

2023 WL 2125824

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Supreme Court of Rhode Island.

POLSENO PROPERTIES MANAGEMENT, LLC

v.

Brenda KEEBLE, in her capacity as
Tax Assessor for the Town of Lincoln.
Polseno Properties Management, LLC

v.

Brenda Keeble, in her capacity as Tax
Assessor for the Town of Lincoln.

No. 2021-299-Appeal.

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(PC 20-2506)

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No. 2021-300-Appeal.

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(PC 21-895)

|

February 21, 2023

Providence County Superior Court, Associate Justice [Richard A. Licht](#)

Attorneys and Law Firms

[Seth H. Handy](#), Esq., for Plaintiff.

[Anthony DeSisto](#), Esq., for Defendant.

Present: [Suttell](#), C.J., [Goldberg](#), [Robinson](#), Lynch Prata, and [Long](#), JJ.

OPINION

Justice [Robinson](#), for the Court.

*1 In these consolidated appeals, the plaintiff, Polseno Properties Management, LLC, appeals from a Superior Court judgment entered in favor of the defendant, Brenda Keeble, in her capacity as the tax assessor for the Town of Lincoln.¹ On appeal, the plaintiff contends that the tax assessor illegally increased the value of its property in light of the development of a “solar array” (the **solar energy** development) on a

portion of the plaintiff's property for tax years 2019 and 2020. The plaintiff also contends that the tax assessor improperly created a new tax classification not recognized by [G.L. 1956 § 44-5-11.8\(b\)](#).

These appeals came before the Supreme Court pursuant to an order directing the parties to appear and show cause why the issues raised in these appeals should not be summarily decided. After considering the parties' written and oral submissions and after reviewing the record, we conclude that cause has not been shown and that these appeals may be decided without further briefing or argument. For the reasons set forth in this opinion, we affirm the judgment of the Superior Court.

I

Facts and Travel

These appeals involve the assessed valuations of property located at 600 George Washington Highway in Lincoln, Rhode Island, where plaintiff owns a 14.6-acre tract of land (the property). As of December 31, 2017, the assessed value of the property was \$1,084,000 (the 2018 assessment). The property is classified as being within a “ML 05 Manufacturing Limited” zoning district.

On June 28, 2018, plaintiff entered into a long-term lease with Green Development, LLC, for the construction and operation of a **solar energy** development on approximately ten acres of the property. Thereafter, the property was “developed with a retail strip mall and a 3.0 megawatt (‘MW’) solar development.” The solar project was completed on December 28, 2018; and, as of December 31, 2018, the assessed value of the property was \$1,382,000 (the 2019 assessment). That 2019 assessment showed that the assessed value of the approximately ten acres upon which the **solar energy** development was located increased from \$7,500 per acre to \$40,000 per acre. The 2019 assessment contained a notation stating: “2018 Adjusted Land to 10 AC for Solar.” As of December 31, 2019, the assessed value of the property was \$1,269,400 (the 2020 assessment). The decrease in value from the 2019 assessment to the 2020 assessment was the result of a change in the valuation of a building (a retail strip mall) located on the property.

Polseno Properties Management, LLC v. Keeble, --- A.3d ---- (2023)

The plaintiff appealed the 2019 tax assessed as of December 31, 2018 (the 2019 tax) to the Lincoln tax assessor, who denied plaintiff's appeal. Thereafter, plaintiff appealed to the tax review board, which also denied plaintiff's appeal. The plaintiff then filed a complaint in the Superior Court on March 19, 2020.

*2 As it had done with respect to the above-referenced 2019 tax, plaintiff similarly appealed the 2020 tax assessed as of December 31, 2019 (the 2020 tax) to the Lincoln tax assessor, who denied the appeal. After plaintiff's appeal was also denied by the tax review board, plaintiff filed a complaint in the Superior Court on February 4, 2021. The parties filed an agreed statement of facts on March 12, 2021. An order was entered on March 22, 2021, consolidating the two cases.

A hearing was held in the Superior Court on August 16, 2021. The parties and the hearing justice first engaged in a consideration of the procedural posture of the case. Although there was a suggestion by the parties in their filings that the proceeding was a trial, the hearing justice indicated that it was his view that what was before him was more in the nature of cross-motions for summary judgment. The parties, in agreement with each other, stated that they viewed this action as one for declaratory judgment.

Turning to the merits of the case, the hearing justice determined that § 44-5-3, upon which plaintiff's appeals were predicated, does not “express[] an intent to exempt from taxation the land upon which [a] renewable energy system is built.” (Emphasis added.) He proceeded to rule: (1) that the property should be assessed by the assessor at its full and fair cash value; and (2) that, “[i]f the assessor may value the land,” then it is relevant that a **solar energy** development exists upon it. The hearing justice denied both plaintiff's and defendant's motions, reasoning that he was treating the matter before him as cross-motions for summary judgment and that determining the full and fair cash value of the land would require a factual determination. He additionally questioned whether he had the jurisdiction to enter a declaratory judgment in a tax case, but he stated that he was willing to give the parties an opportunity to confer with each other before he ruled on that issue.

On August 24, 2021, defendant filed an assented-to motion for entry of final judgment “on all counts” set forth in the two complaints. That motion indicated that the parties had

originally convened for a trial and that the court had ruled in favor of defendant, determining that the taxes assessed by defendant were legal. On September 24, 2021, judgment entered in favor of defendant, and plaintiff filed timely notices of appeal on October 5, 2021.²

II

Standard of Review

*3 Questions of statutory interpretation are reviewed “in a *de novo* manner.” *Powers v. Warwick Public Schools*, 204 A.3d 1078, 1082 (R.I. 2019). This Court has indicated that, “when the language of a statute is clear and unambiguous, this Court must interpret the statute literally and must give the words of the statute their plain and ordinary meanings.” *DeMarco v. Travelers Insurance Company*, 26 A.3d 585, 616 (R.I. 2011) (quoting *State v. DiCicco*, 707 A.2d 251, 253 (R.I. 1998)). In situations where “a statute is susceptible of more than one meaning, we employ our well-established maxims of statutory construction in an effort to glean the intent of the Legislature.” *Olsen v. DeMayo*, 210 A.3d 431, 435 (R.I. 2019) (quoting *Town of Warren v. Bristol Warren Regional School District*, 159 A.3d 1029, 1039 (R.I. 2017)).

III

Analysis

On appeal, plaintiff contends that § 44-5-3(c) prohibits municipalities from increasing the valuation of real property due to the presence of renewable energy projects. The plaintiff asserts that the only tax permitted on solar projects is the tangible property tax imposed in accordance with the rules and regulations established by Rhode Island's Office of Energy Resources. The plaintiff argues that, except for that tax on tangibles, a **solar energy** development is tax-exempt and that it should not be appraised. Consequently, plaintiff claims that the tax assessor erroneously took into consideration tax-exempt property when assessing the value of plaintiff's real property.

Polseno Properties Management, LLC v. Keeble, --- A.3d ---- (2023)

The plaintiff further suggests that the hearing justice's interpretation of § 44-5-3(c) “nullifies the legislature's intent,” which plaintiff posits was to create “consistent and foreseeable tax treatment” for renewable energy. Moreover, plaintiff avers that the hearing justice “erred in holding that § 44-5-12 allows municipalities to assess exempt renewable energy equipment as part of the value of real property.” The plaintiff asserts that a municipality must determine “the full and fair cash value of real property separate and apart from the valuation of tangible property.”

The defendant counters plaintiff's argument with the contention that plaintiff's property, part of which is used for the generation of solar power, “must be taxed at its full and fair cash value” in accordance with § 44-5-12. The defendant further contends that the land upon which the **solar energy** development is located is not subject to the limitation on taxation set forth in § 44-5-3(c) because, in defendant's view, land is not a renewable energy resource. The defendant argues that plaintiff has assumed “without evidentiary support” that the increase in valuation of its property was the result of “improper consideration of tangible property as part of the real property valuation.”

Section 44-5-3(c) reads in relevant part as follows:

“Notwithstanding any exemption provided by this section, and except for the exemptions created by §§ 44-3-3(a) (22), 44-3-3(a)(48) and 44-3-3(a)(49), which exemptions shall remain intact, cities and towns may, by ordinance or resolution, tax any renewable energy resources, as defined in § 39-26-5, and associated equipment only pursuant to rules and regulations that will be established by the office of energy resources in consultation with the division of taxation after the rules are adopted, no later than November 30, 2016. The rules will provide consistent and foreseeable tax treatment of renewable energy to facilitate and promote installation of grid-connected generation of renewable energy and shall consider the following criteria in adopting appropriate and reasonable, tangible property tax rates for commercial renewable energy systems[.]” (Emphasis added.)³

*4 The plaintiff's argument focuses on the term “only” that appears in the statute, suggesting that the General Assembly intended to prohibit municipalities from increasing

the assessment of real property upon which those **solar energy** elements are located.

This Court has held that our duty is to “strictly construe statutory tax exemptions in favor of the taxing authority.” *Delta Airlines, Inc. v. Neary*, 785 A.2d 1123, 1126 (R.I. 2001). We have noted that “the rule of strict construction is not to be applied so as to defeat a clear legislative intent to grant a particular exemption.” *Preservation Society of Newport County v. Assessor of Taxes of City of Newport*, 104 R.I. 559, 565, 247 A.2d 430, 434 (1968). Nevertheless, “the party claiming the tax exemption bears the burden of demonstrating that the statute reveals such an intent.” *Delta Airlines, Inc.*, 785 A.2d at 1126.

We agree with plaintiff's contention that the General Assembly's overall objective in enacting § 44-5-3(c) is clearly stated within that section—that objective being the “consistent and foreseeable tax treatment of renewable energy[.]”⁴ Notwithstanding the General Assembly's general desire to deal creatively with renewable energy resources, it is undisputed that § 44-5-3(c) makes absolutely no mention of real property.⁵ Prior to the 2022 amendment, the statute without question speaks to tangible property taxes to which **solar energy** equipment is subject, and it is utterly silent as to real property. Section 44-5-3(c) even states that the rules “shall consider the * * * [specified] criteria in adopting appropriate and reasonable, tangible property tax rates for commercial renewable energy systems[.]” The unambiguous language of the statute clearly indicates that the statute does not address the real property upon which a **solar energy** development is located. We therefore see no error in including the presence of a **solar energy** development as an element of value assessed to real property.

Furthermore, we are unpersuaded by plaintiff's argument that, if renewable energy resources and equipment are included in the value of real property, the assessment will exceed the full and fair cash value of the property because, as plaintiff contends, the **solar energy** development is a tax-exempt asset that can be taxed only as a tangible asset. Moreover, we view plaintiff's reliance on *St. Clare Home v. Donnelly*, 117 R.I. 464, 368 A.2d 1214 (1977), in making this argument as misplaced. The plaintiff, in citing *St. Clare Home*, argues that “[t]ax-exempt property is not property capable of being appraised.” *St. Clare Home*, 117 R.I. at 468, 368 A.2d at

Polseno Properties Management, LLC v. Keeble, --- A.3d ---- (2023)

1217. It further contends that “[a]pplication of the tax levy to a valuation which included tax-exempt property would necessarily result in a malapportionment of taxes.” *Id.* The plaintiff further emphasizes that property “not capable of being assessed should not be included on the list of property to be valued by the assessor.” *Id.*

*5 In *St. Clare Home*, the plaintiff operated “a home for the aged,” which was scheduled to be sold at a tax sale. *St. Clare Home*, 117 R.I. at 465, 368 A.2d at 1215. The plaintiff in that case, seeking to enjoin the tax sale, claimed that the property was tax-exempt. *Id.* The plaintiff, however, opted against “pursu[ing] the remedy provided in § 44-5-26[.]” and the Superior Court dismissed the suit due to noncompliance with the applicable statutes. *Id.* at 466, 368 A.2d at 1215-16. The plaintiff argued on appeal that the three-month statute of limitations in § 44-5-27 did not apply because the property in question was tax-exempt. *Id.* at 466, 368 A.2d at 1216. This Court agreed. *Id.* We stated that “tax-exempt property is not ratable property and that § 44-5-27 does not apply to limit the remedies of a taxpayer who possesses no ratable estate at all because the property is tax-exempt.” *Id.*

The case at bar presents a factually distinguishable scenario from that at issue in *St. Clare Home*. This is not a case in which tax-exempt property has been taxed. The underlying real estate here is not tax-exempt, and plaintiff even acknowledges the important point that the real property is taxable. It is therefore reasonable for an assessor to consider the existence of a **solar energy** development when assessing the fair market value of the underlying real property in accordance with § 44-5-12. See *Harvard Pilgrim Health Care of New England, Inc. v. Gelati*, 865 A.2d 1028, 1035 (R.I. 2004) (stating that “[t]he assessor, in determining fair market value, ‘is not bound by any particular formula, rule or method * * * to ascertain the fair market value of real estate’ ” (quoting *Ferland Corp. v. Bouchard*, 626 A.2d 210, 215 (R.I. 1993))). Accordingly, in applying the statute’s plain and unambiguous terms to the particular facts of this case, we are of the opinion that plaintiff has failed to demonstrate that § 44-5-3(c) was designed to exclude a **solar energy** development when assessing the real estate upon which it is located.

The plaintiff additionally argues that the tax assessor “effectively created a new tax classification” for property

upon which a **solar energy** development is located, in direct contravention of § 44-5-11.8(b). The plaintiff maintains that the tax assessor created a new property classification because the assessments after 2018 contained the notation that they had been adjusted due to the **solar energy** development. The defendant contends that plaintiff does not cite any part of the record in making this argument, relying only on evidence that is not in the record.

We consider the plaintiff’s argument in this regard to be unpersuasive. The plaintiff points only to the defendant’s “new classification – ‘Solar A’ ” and to the notation on the 2019 assessment (viz., “2018 Adjusted Land to 10 AC for Solar”) to contend that the defendant created a new tax classification. Section 44-5-11.8(b) establishes the following four classes of property for tax classification purposes: (1) residential real estate; (2) commercial and industrial real estate; (3) ratable, tangible personal property; and (4) motor vehicle and trailers subject to excise tax. The plaintiff has completely failed to convince us how the 2019 assessment notation somehow reflects the creation of a new tax classification. The real estate was not being assessed as though it fell outside one of the four classes of property delineated in § 44-5-11.8(b). The notation merely advises how the assessment of the real property was adjusted—i.e., as a result of the **solar energy** development located on the real property. For that reason and because the plaintiff points to no other evidence in support of its claim, we deem the plaintiff’s argument in this regard as unavailing.

IV

Conclusion

*6 For the reasons set forth in this opinion, we affirm the judgment of the Superior Court. The record may be returned to that tribunal.

All Citations

--- A.3d ----, 2023 WL 2125824

Footnotes

1 In both cases, Elaine Mondillo, in her official capacity as tax assessor for the Town of Lincoln, was the initial defendant. On March 8, 2021, the plaintiff moved to amend its complaint in PC 21-895 to reflect the fact that Brenda Keeble had become the new tax assessor for the Town of Lincoln. A copy of the amended complaint was attached to the motion to amend; however, the record indicates that the amended complaint was never filed and docketed.

2 On October 7, 2022, after these cases were scheduled for oral argument, plaintiff filed a “motion for consideration of new law.” The motion indicated that the parties were unable to reach an agreement as to the new law’s specific relevance to the instant case. This Court granted plaintiff’s motion on October 13, 2022.

The new law in question deals with the tax treatment of real property upon which renewable energy resources are located. [General Laws 1956 § 44-5-3\(c\)\(6\)](#), as amended by P.L. 2022, ch. 268, § 1, now states that municipalities “may only assess a tax on the real property upon which a renewable energy resource is located pursuant to § 44-5-12(a)(5) and § 44-27-10.1(b), as applicable.”

Section 44-5-12(a)(5), as now amended, specifically provides that “[r]enewable energy resources shall only be taxed as tangible property under § 44-5-3(c) and the real property on which they are located shall not be reclassified, revalued, or reassessed due to the presence of renewable energy resources, excepting only reclassification of farmland as addressed in § 44-27-10.1.” Section 44-5-12(a)(5) goes on to state that “all assessments of real property with renewable energy resources thereon shall revert to the last assessed value immediately prior to the renewable developer’s purchasing, leasing * * * or otherwise acquiring any interest in the real property.” Lastly, the revised § 44-5-12(a)(5) states that “notwithstanding the above, but without any limitation on taxpayer rights under § 44-5-26, no municipality shall be liable or otherwise responsible for any rebates, refunds, or any other reimbursements for taxes previously collected for real property with renewable energy resources thereupon.”

Although the General Assembly has now prospectively addressed the tax status of renewable energy resources, the statutory interpretation issue now before us remains viable in the present consolidated cases. The new law became effective on July 2, 2022; it was to take effect upon passage, and it is to be applicable to property assessed on and after December 31, 2022. See P.L. 2022, ch. 268, § 3. For those reasons, the new law has no bearing on this case.

3 The statute continues, listing the criteria referenced in the last sentence of the quoted portion of [§ 44-5-3\(c\)](#). [Section 44-5-3\(c\)](#).

4 [Section 44-5-3\(c\)](#) is consistent with the General Assembly’s overall objective alluded to in the text. But it is the actual words of the statute that must be our focus—not the objective that motivated the enactment of those words.

5 We are mindful of the venerable principle of statutory interpretation that “statutory intent is to be found in the words of a statute, if they are free from ambiguity and express a reasonable meaning.” *Little v. Conflict of Interest Commission*, 121 R.I. 232, 237, 397 A.2d 884, 887 (1979); see also *State v. Menard*, 888 A.2d 57, 60 (R.I. 2005) (“The best evidence of [the General Assembly’s] intent can be found in the plain language used in the statute.”) (quoting *Martone v. Johnston School Committee*, 824 A.2d 426, 431 (R.I. 2003)).

Polseno Properties Management, LLC v. Keeble, --- A.3d ---- (2023)

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Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

2023 WL 1975079

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United States Court of Appeals,
District of Columbia Circuit.

SOLAR ENERGY INDUSTRIES

ASSOCIATION, Petitioner

v.

FEDERAL ENERGY REGULATORY

COMMISSION, Respondent

NewSun Energy LLC and

Broadview Solar, LLC, Intervenors

No. 21-1126

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Consolidated with 21-1136, 21-1142, 21-1149, 21-1175

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Argued September 7, 2022

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Decided February 14, 2023

Synopsis

Background: Electric company and trade association representing investor-owned electric companies petitioned for review of order of Federal Energy Regulatory Commission (FERC) granting **solar energy** facility's application to become a qualifying facility under the Public Utility Regulatory Policies Act (PURPA), and **solar energy** trade association petitioned for review of FERC's denial of its motion to intervene in the adjudication of application.

Holdings: The Court of Appeals, [Sentelle](#), Senior Circuit Judge, held that:

[1] PURPA was ambiguous;

[2] FERC's interpretation was reasonable, and thus entitled to *Chevron* deference;

[3] it was not arbitrary or capricious for FERC to treat submissions on application form as helpful but not dispositive;

[4] FERC's decision to treat **solar energy** facility's solar array and battery as a single facility was not arbitrary and capricious;

[5] FERC's decision to look at **solar energy** facility's instantaneous net power output and not its power output over time adhered to PURPA's statutory language; and

[6] **solar energy** trade association did not suffer an injury-in-fact required for Article III standing to petition for review of FERC's denial of motion to intervene.

Petitions denied and dismissed.

[Walker](#), Circuit Judge, filed opinion concurring in part and dissenting in part.

Procedural Posture(s): Review of Administrative Decision.

West Headnotes (15)

[1] **Administrative Law and Procedure** 🔑 Plain, literal, or clear meaning; ambiguity or silence

Under the first step of the *Chevron* framework for evaluating an agency's interpretation of a statute, the court asks whether Congress has directly spoken to the precise question at issue.

[2] **Administrative Law and Procedure** 🔑 Plain, literal, or clear meaning; ambiguity or silence

Under the first step of the *Chevron* framework for evaluating an agency's interpretation of a statute, if Congress has directly spoken to the precise question at issue, the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.

[3] **Administrative Law and Procedure** 🔑 Plain, literal, or clear meaning; ambiguity or silence

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

Administrative Law and

Procedure ➔ Permissible or reasonable construction

If a statute is silent or ambiguous with respect to the specific issue, the court moves to step two of the *Chevron* analysis, and must uphold any agency interpretation that is reasonable.

[4] **Administrative Law and**

Procedure ➔ Public utilities

Electricity ➔ Regulation of supply and use

Meanings of “facility” and “power production capacity” as used in Public Utility Regulatory Policies Act (PURPA) were ambiguous as to whether the relevant capacity is that of the individual subcomponent generating direct-current (DC) power, meaning the solar array, or of all the facility's components working together to produce grid-usable alternating-current (AC) power, which would include the inverters, such that court would defer to any reasonable interpretation of PURPA by Federal Energy Regulatory Commission (FERC) under *Chevron* deference; PURPA did not define terms. Federal Power Act § 3, 16 U.S.C.A. § 796(17)(A).

[5] **Administrative Law and**

Procedure ➔ Permissible or reasonable construction

To determine whether agency's interpretation of statute was reasonable, so as to warrant *Chevron* deference, Court of Appeals looks to see if it is based on permissible construction of statute in light of its language, structure, and purpose and consistent with legislative history.

[6] **Electricity** ➔ Regulation of supply and use

Federal Energy Regulatory Commission (FERC) waived for review by Court of Appeals argument raised for the first time in Court of Appeals that term “capacity” has an industry-specific

definition meaning the maximum amount of power that can be supplied to the power grid for end-user demand, since this was not a basis for FERC's decision granting alternative energy supplier's application to become a qualifying facility under the Public Utility Regulatory Policies Act (PURPA). Federal Power Act § 3, 16 U.S.C.A. § 796(17)(A).

[7] **Electricity** ➔ Regulation of supply and use

Federal Energy Regulatory Commission's (FERC) interpretation of ambiguous terms “power production capacity” as the facility's net output to the electric utility, and of “facility” as all of the putative qualifying facility's component parts as they work together as a whole, as used in the Public Utility Regulatory Policies Act (PURPA), leading to determination that alternative energy supplier was a qualifying facility with a power production capacity not greater than 80 megawatts (MW) because its component parts, working together, produced no more than 80 MW of grid-usable alternating-current (AC) power was reasonable and well-supported by the statute's text, structure, purpose, and legislative history, and thus FERC's determination was entitled to *Chevron* deference. Federal Power Act § 3, 16 U.S.C.A. § 796(17)(A)(ii).

[8] **Electricity** ➔ Regulation of supply and use

It was not arbitrary or capricious for Federal Energy Regulatory Commission (FERC) to treat submissions on application form, providing a formula for calculating the facility's maximum net power production capacity, starting with the maximum gross power production capacity at the terminals of the individual generators and subtracting out certain enumerated figures, including electrical losses and power used to run the facility's equipment, as helpful for determining, but not dispositive of, **solar energy** facility's eligibility to be considered a “qualifying facility” with a power production

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

capacity not greater than 80 megawatts (MW) for purposes of the Public Utility Regulatory Policies Act (PURPA). Federal Power Act § 3, 16 U.S.C.A. § 796(17)(A)(ii); 18 C.F.R. § 292.207(a)(1); (b)(2).

[9] **Electricity** 🔑 Regulation of supply and use

Federal Energy Regulatory Commission's (FERC) decision to treat **solar energy** facility's solar array and battery as a single facility so as to be considered a "qualifying facility" under FERC's reasonable interpretation of Public Utility Regulatory Policies Act (PURPA) was not inconsistent with PURPA's text or FERC's own precedent, and thus decision was not arbitrary and capricious; facility's battery could store only direct-current (DC) power and could not deliver any usable power to the grid. Federal Power Act § 3, 16 U.S.C.A. § 796(17)(A)(ii); 18 C.F.R. § 292.204(a)(1)-(2).

[10] **Electricity** 🔑 Regulation of supply and use

Federal Energy Regulatory Commission's (FERC) decision to look at **solar energy** facility's instantaneous net power output and not its power output over time adhered to statutory language of Public Utility Regulatory Policies Act (PURPA) which measures power production capacity in megawatts, rather than in megawatt-hours, which measures power production over time, and thus FERC's decision was not arbitrary and capricious. Federal Power Act § 3, 16 U.S.C.A. § 796(17)(A)(ii).

[11] **Federal Courts** 🔑 Persons Entitled to Seek Review or Assert Arguments; Parties; Standing

For Court of Appeals to have jurisdiction, the plaintiff must have Article III standing. U.S. Const. Art. 3, § 2, cl.1.

[12] **Federal Civil Procedure** 🔑 In general; injury or interest

Federal Civil Procedure 🔑 Causation; redressability

The irreducible constitutional minimum of Article III standing contains three elements: (1) the plaintiff must have suffered injury in fact, an actual or imminent invasion of a legally protected, concrete and particularized interest; (2) there must be a causal connection between the alleged injury and the defendant's conduct at issue; and (3) it must be likely, not speculative, that the court can redress the injury. U.S. Const. Art. 3, § 2, cl.1.

[13] **Electricity** 🔑 Regulation of supply and use

Failure of **solar energy** trade association to timely intervene in adjudication of **solar energy** provider's application to be recognized as a qualifying facility under the Public Utility Regulatory Policies Act (PURPA), resulting from association's own mistaken judgment, and leading to its inability to participate in Federal Energy Regulatory Commission's (FERC) proceedings and decision regarding approach for measuring a facility's power production capacity, did not give rise to an Article III injury-in-fact required for standing to petition for review of FERC's denial of its motion to intervene; trade association did not have a right to participate in any proceedings regarding approach for measuring a facility's capacity. U.S. Const. Art. 3, § 2, cl.1; Federal Power Act § 3, 16 U.S.C.A. § 796(17)(A).

[14] **Administrative Law and Procedure** 🔑 Rulemaking, adjudication, or other mechanism

Agencies have very broad discretion to decide whether to proceed by adjudication or rulemaking.

[15] **Federal Civil Procedure** 🔑 In general;
injury or interest

The mere fact that an adjudication creates a precedent that could harm a non-party does not create the injury-in-fact required for Article III standing. U.S. Const. Art. 3, § 2, cl.1.

On Petitions for Review of Orders of the Federal Energy Regulatory Commission

Attorneys and Law Firms

[Jeremy C. Marwell](#) argued the cause for petitioners The Edison Electric Institute and Northwestern Corporation. With him on the briefs were Sarah N. Norcott and James T. Dawson.

[Heather Curlee](#) argued the cause for petitioner **Solar Energy Industry Association**. With her on the briefs was [Todd G. Glass](#).

Adam Lowney and Christopher Jones were on the brief for amicus curiae Pacificorp d/b/a/ Pacific Power and Rocky Mountain Power in support of petitioners.

[Jared B. Fish](#), Attorney, Federal Energy Regulatory Commission, argued the cause for respondent. With him on the brief were Matthew R. Christiansen, General Counsel, and Robert H. Solomon, Solicitor. [Anand Viswanathan](#), Attorney, entered an appearance.

[Robert M. Loeb](#) argued the cause for intervenors NewSun Energy LLC and Broadview Solar, LLC. With him on the brief were Gregory M. Adams, [Adam Wenner](#), and [Jeremy R. Peterman](#). Peter Richardson entered an appearance.

[Kip D. Nelson](#), Nick Jimenez, and [Irion A. Sanger](#) were on the brief for amici curiae Carolinas Clean Energy Business Association, et al. in support of respondent.

Before: [Pillard](#) and [Walker](#), Circuit Judges, and [Sentelle](#), Senior Circuit Judge.

Opinion

Opinion concurring in part and dissenting in part filed by Circuit Judge [Walker](#).

[Sentelle](#), Senior Circuit Judge:

*1 The Edison Electric Institute and NorthWestern Corporation, d/b/a NorthWestern Energy, (collectively, “Utilities”) petition for review of an order by the Federal Energy Regulatory Commission (“Commission”) in which the Commission granted Broadview Solar’s application to become a qualifying facility under the Public Utility Regulatory Policies Act of 1978 (“PURPA”). The **Solar Energy Industries Association** (“SEIA”) petitions for review of the Commission’s denial of its motion to intervene in the adjudication of Broadview’s application.

Because we conclude that the Commission’s interpretation of the statute is entitled to deference and that the Commission did not act arbitrarily or capriciously, we deny the Utilities’ petitions. We dismiss SEIA’s petitions because it lacks Article III standing.

Background

Section 210 of PURPA was enacted with the goal of promoting the creation and use of alternative energy. *See Am. Paper Inst., Inc. v. Am. Elec. Power Serv. Corp.*, 461 U.S. 402, 404–05, 103 S.Ct. 1921, 76 L.Ed.2d 22 (1983). It does so, in part, by directing the Commission to prescribe rules affording “qualifying small power production facilities,” also commonly known as “qualifying facilities,” certain benefits. *See* 16 U.S.C. § 824a-3(a)–(b). To be a qualifying facility under the Act, a facility must use “biomass, waste, renewable resources, geothermal resources, or any combination thereof” to produce energy and have “a power production capacity which, together with any other facilities located at the same site ..., is not greater than 80 megawatts.” *Id.* § 796(17)(A)(i)–(ii). Facilities may self-certify that they meet these requirements, or they may apply for certification from the Commission. *See* 18 C.F.R. § 292.207(a)–(b). One notable benefit to being a qualifying facility is the mandatory purchase obligation. Under it, electric utilities are required to purchase the energy generated by qualifying facilities,

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

providing those facilities with a guaranteed market. *See* 16 U.S.C. § 824a-3(a)(2); 18 C.F.R. § 292.303(a).

In September 2019, Broadview applied for certification from the Commission that its Montana facility was a qualifying facility. That facility consists of a 160 MW solar array and a 50 MW battery storage system, both of which produce or store direct current, or DC, power. Because the nation's electric grid runs on alternating current, or AC, power, solar facilities must also have devices known as inverters to convert DC power into grid-usable AC power. Broadview's Montana facility has inverters with a total net capacity of 80 MW.

In its application, Broadview noted its intent to interconnect with and sell energy to NorthWestern Energy, as it would be entitled to do under the mandatory purchasing requirement as a qualifying facility. The Edison Electric Institute, a trade association representing investor-owned electric companies across the United States subject to mandatory purchasing requirements, and NorthWestern Energy filed motions to intervene in the Broadview docket, objecting to certification of Broadview's facility. Both motions were timely filed by the October 2, 2019, deadline.

*2 The Commission denied Broadview's application for certification in a September 2020 Order, determining that Broadview's facility exceeded the statute's maximum “power production capacity” of 80 MW. *See Broadview Solar, LLC*, 172 FERC ¶ 61,194 (2020), *set aside*, 174 FERC ¶ 61,199 (2021), *reh'g denied and modified*, 175 FERC ¶ 61,228 (2021). In reaching this conclusion, the Commission determined that the relevant “capacity” was that of the solar array, which was 160 MW of DC power, and not the inverters’ “conversion limit” of 80 MW of AC power. *Id.* at 62,276. The Commission acknowledged it was departing from its previous approach set out in *Occidental Geothermal, Inc.*, 17 FERC ¶ 61,231 (1981), which focused on the facility's net output, or “send-out,” capacity. It determined, however, that the send-out approach was inconsistent with the statute's text. Broadview filed a request for rehearing. After the Commission issued its September 2020 Order, SEIA also filed a motion to intervene, nearly one year after the original deadline.

In March 2021, the Commission issued a new Order granting Broadview qualifying facility status and setting aside its September 2020 Order. *Broadview Solar, LLC*,

174 FERC ¶ 61,199 (2021). After determining that § 796(17)(A) was ambiguous as to the proper measure of a facility's “power production capacity,” the Commission determined that its former send-out approach was the best interpretation because it takes into account all of the facility's components working together, not just the maximum capacity of one subcomponent, and focuses on grid-usable AC power. *Broadview Solar, LLC*, 174 FERC ¶ 61,199, at 61,797. Because Broadview's send-out capacity at any single point in time is capped by the inverters’ net output capacity of 80 MW of power, the Commission determined that Broadview's facility met the statutory requirements and granted it qualifying facility status. *Id.* at 61,799, 61,801–02. In the same March 2021 Order, the Commission also determined SEIA failed to establish good cause for its untimely motion to intervene and denied that motion. *Id.* at 61,795.

The Utilities and SEIA filed requests for rehearing. The Commission issued its June 2021 Order, reaffirming that Broadview was a qualifying facility and modifying its March 2021 Order to reject the Utilities’ arguments that Broadview's facility represented a novel subversion of the statute and that the battery's capacity had to be calculated separately from the capacity of the solar array. *Broadview Solar, LLC*, 175 FERC ¶ 61,228 (2021). This appeal followed.

Analysis

A. PURPA

i. *Chevron* Challenge

The Utilities argue that the Commission exceeded its statutory authority because, in their view, the “power production capacity” of Broadview's facility is the total amount of DC power generated by the solar array and not the grid-usable AC power produced by the inverters working in conjunction with the solar array and battery. The Commission argues that the statute is ambiguous as to the proper measure of a facility's “power production capacity” and that its interpretation, focusing on the amount of AC power being sent out to the grid, is reasonable. We agree with the Commission.

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

[1] [2] [3] In interpreting the statute, this Court's analysis is governed by the two-step framework set out in *Chevron, U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 104 S.Ct. 2778, 81 L.Ed.2d 694 (1984). Under step one, the court asks “whether Congress has directly spoken to the precise question at issue.” *Id.* at 842, 104 S.Ct. 2778. If it has, “the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.” *Id.* at 842–43, 104 S.Ct. 2778. But “if the statute is silent or ambiguous with respect to the specific issue,” the court moves to step two and must uphold any agency interpretation that is “reasonable.” *Id.* at 843–44, 104 S.Ct. 2778.

[4] The parties’ dispute in this case turns on the meanings of “facility” and “power production capacity” in 16 U.S.C. § 796(17)(A). PURPA does not define these terms. In plain language, a facility’s “power production capacity” is the maximum amount of power that the facility can produce. But the statute does not state whether the relevant capacity is that of the individual subcomponent generating DC power, *i.e.*, the solar array, or of all the facility’s components working together to produce grid-usable AC power, which would include the inverters. Because Congress has not spoken to the issue, we move to step two and must defer to any reasonable agency interpretation.

*3 [5] To determine whether the Commission's interpretation was reasonable, we look to see if it “is based on a permissible construction of the statute in light of its language, structure, and purpose” and consistent with the legislative history. *Nat'l Treasury Emps. Union v. Fed. Lab. Rels. Auth.*, 754 F.3d 1031, 1042 (D.C. Cir. 2014) (quoting *Am. Fed'n of Labor v. Chao*, 409 F.3d 377, 384 (D.C. Cir. 2005)); *see also Bell Atl. Tel. Co. v. FCC*, 131 F.3d 1044, 1048-49 (D.C. Cir. 1997).

[6] [7] We start with the text. On appeal, the Commission raised for the first time the argument that “capacity” has an industry-specific definition meaning the maximum amount of power that can be supplied to the power grid, *i.e.*, for end-user demand. Because this was not a basis for the Commission's decision, we do not consider it here. *See Secs. & Exch. Comm'n v. Chenery Corp.*, 318 U.S. 80, 87, 95, 63 S.Ct. 454, 87 L.Ed. 626 (1943). Even so, the Commission's interpretations of “power production capacity” as “the facility's net output to the electric utility,” and of “facility” as “all of the putative [qualifying facility's]

component parts as they work together as a whole,” were eminently reasonable. *See* 175 FERC ¶ 61,228, at 62,316–17 (internal quotation marks and citation omitted). As discussed, the statute is ambiguous on the meanings of “power production capacity” and “facility.” The only grid-usable “power” that Broadview produces is AC power, and Broadview's inverters work with the solar array and battery as an integral component in producing that power.

The Commission's interpretation was further guided, and is amply supported, by the statute's structure and purpose. Determining qualifying facility status by the facility's net output brings various provisions of PURPA into harmony. One of the main benefits of being a qualifying facility is the mandatory purchasing requirement. But the mandatory purchasing requirement only applies to grid-usable power—meaning AC power. The Commission's interpretation of “power production capacity” similarly focuses on net output of grid-usable AC power. Thus, the measure used to determine whether a facility is eligible for qualifying facility status is the same used to determine benefits available to those qualifying facilities.

The Commission's focus on net output is likewise “consistent with the statutory purpose” of PURPA. *Troy Corp. v. Browner*, 120 F.3d 277, 285 (D.C. Cir. 1997) (citing *Chevron*, 467 U.S. at 843, 104 S.Ct. 2778). Title II of PURPA was intended “to encourage the development of ... small power production facilities” and promote the use of alternative energy sources, such as solar. *Conn. Valley Elec. Co. v. FERC*, 208 F.3d 1037, 1045 (D.C. Cir. 2000) (quoting *FERC v. Mississippi*, 456 U.S. 742, 750, 102 S.Ct. 2126, 72 L.Ed.2d 532 (1982)). Excluding facilities from qualifying facility status because their component parts have individual production capacities over 80 MW, even though the overall facility cannot send out more than 80 MW to the grid, would be inconsistent with that goal.

Compared to facilities that rely on other energy sources, solar facilities are relatively inefficient at generating power. A solar array needs sunlight; cloud cover and nighttime hinder its production capabilities. Broadview addressed this by installing a solar array with a capacity of 160 MW and a battery, enabling it to produce extra power to be stored in the battery while conditions are optimal and then release that power to the grid when conditions prevent the array from producing enough power to meet the inverters’ 80 MW

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

limit. The Utilities complain that this allows Broadview to circumvent the statutory restrictions on qualifying facilities. But viewed in light of the statute's purpose, this arrangement is a feature, not a bug: Broadview is able to more consistently produce, send out, and sell the maximum amount of renewable energy permitted under the statute.

*4 The Commission's interpretation is also consistent with the legislative history. See *City of Cleveland v. U.S. Nuclear Reg. Comm'n*, 68 F.3d 1361, 1367–68 (D.C. Cir. 1995). The Utilities rely on one sentence from a House Committee Report stating that “[t]he power production capacity of the facility means the rated capacity of the facility.” H.R. Rep. No. 95-1750, at 89 (1978) (Conf. Rep.). While neither the legislative history nor PURPA defines “rated capacity,” it is most frequently used to refer to the performance anticipated under “standard operating conditions.” *Occidental*, 17 FERC ¶ 61,231, at 61,444–45. The Utilities adopt this definition in their briefing but fail to apply that definition to the House Committee's full quote, which referred to the “rated capacity of the facility.” H.R. Rep. No. 95-1750, at 89 (1978) (Conf. Rep.) (emphasis added). Broadview's facility consists of a solar array, battery, and inverters that can regularly produce 80 MW of grid-usable power. As the Commission previously recognized, “a facility's power production capacity is not necessarily determined by the nominal rating of even a key component of the facility. ... [I]t is not uncommon for smaller facilities to find it most economic to employ commercially available components[,] some of which have individual capabilities significantly exceeding the overall facility capabilities.” *Occidental*, 17 FERC ¶ 61,231, at 61,445.

The Commission's determination that Broadview is a qualifying facility with a “power production capacity ... not greater than 80 megawatts,” 16 U.S.C. § 796(17)(A)(ii), because its component parts, working together, produce no more than 80 MW of grid-usable AC power was reasonable and well-supported by the statute's text, structure, purpose, and legislative history.

ii. Arbitrary and Capricious Challenges

The Utilities raise several other arguments, none of which compels a different result than their first. First, the Utilities

claim the Commission acted arbitrarily and capriciously by granting Broadview's application and ignoring errors on one of Broadview's form submissions. The Commission requires that all qualifying facility applicants complete its Form 556. See 18 C.F.R. § 292.207(a)(1), (b)(2). That form provides a formula for calculating the facility's maximum net power production capacity, starting with the “maximum gross power production capacity at the terminals of the individual generator(s)” and subtracting out certain enumerated figures, including electrical losses and power used to run the facility's equipment. FERC Form No. 556. When asked for the “maximum gross power production capacity at the terminals of the individual generator(s),” Broadview, in one submission, reported a value of approximately 82.5 MW, while the Utilities claim the correct value was 160 MW. Because of that error, the Utilities claim the Commission could not grant Broadview's application.

[8] This argument fails because it treats an applicant's completion of Form 556—a tool meant to aid the Commission in its eligibility determination—as itself determinative. As the Commission explained in its March 2021 Order, “Form No. 556 was always intended to be a flexible tool ... to submit information relevant to whether a facility meets the requirements to be considered a [qualifying facility].” 174 FERC ¶ 61,199, at 61,800. Even assuming the correct input on the form was 160 MW, Broadview explained its facility's novel setup and why its “maximum net power production capacity” was 80 MW. The Commission's decision to treat Broadview's Form 556 submissions as helpful for determining, but not dispositive of, the facility's eligibility was not arbitrary or capricious.

[9] The Utilities also argue the Commission's decision to treat the solar array and battery as a single facility was arbitrary and capricious. Because the Commission's decision to do so was not inconsistent with the statutory text nor the Commission's own precedent, this argument also fails.

When determining whether a facility is eligible for qualifying facility status, the Commission must look at the combined power production capacity of “facilities located at the same site.” 16 U.S.C. § 796(17)(A)(ii); see also 18 C.F.R. § 292.204(a)(1)–(2). As we have discussed, the Commission's interpretation of “facility” to encompass all the components working together to produce grid-usable AC power was reasonable. But standing on its own, Broadview's battery

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

can store only DC power and cannot deliver any usable power to the grid. Accordingly, the battery is not a separate “facility” under the Commission's reasonable interpretation of the statutory text.

*5 Citing *Luz Development & Finance Corp.*, 51 FERC ¶ 61,078 (1990), the Utilities argue that Broadview's battery must be considered a separate facility and its capacity aggregated with that of the solar array or inverters. But *Luz* merely recognized that a battery can be a standalone qualifying facility, *id.* at 61,172; that possibility does not compel the result that it must be a separate facility. The battery in *Luz* was used to store energy purchased from the grid until it was later resold during periods of higher demand, *id.* at 61,168, and is easily distinguishable from Broadview's battery that stores DC power until it can be sent through the inverters and transformed into grid-usable AC power.

[10] Finally, the Utilities challenge the Commission's decision to look at Broadview's instantaneous net power output and not its power output over time. The statute measures “power production capacity” in “megawatts.” But power production over time is measured in “megawatt-hours.” Rather than being arbitrary and capricious, the Commission's focus on instantaneous power production adhered to the statutory language.

B. SEIA's Petitions

Turning now to SEIA's petitions for review of the Commission's denial of its motion to intervene, “[o]ur analysis begins and ends with consideration of our jurisdiction.” *Swanson Grp. Mfg. LLC v. Jewell*, 790 F.3d 235, 239 (D.C. Cir. 2015).

[11] [12] For this Court to have jurisdiction, the plaintiff must have standing. “The ‘irreducible constitutional minimum of standing contains three elements’: (1) the plaintiff must have suffered injury in fact, an actual or imminent invasion of a legally protected, concrete and particularized interest; (2) there must be a causal connection between the alleged injury and the defendant's conduct at issue; and (3) it must be ‘likely,’ not ‘speculative,’ that the court can redress the injury.” *Ctr. for Law & Educ. v. Dep't of Educ.*, 396 F.3d 1152, 1157 (D.C. Cir. 2005) (quoting *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 560–61, 112 S.Ct. 2130, 119 L.Ed.2d 351 (1992)).

[13] SEIA fails on the first requirement as it has not suffered an Article III injury-in-fact. SEIA's claimed injury is that it was “effectively precluded” from defending the net output, or send-out, approach in the Commission's adjudication of Broadview's application. Pet. Br. at 9–10. According to SEIA, any reconsideration of that approach was likely to occur, if at all, during the Commission's contemporaneous rulemaking or the ensuing Ninth Circuit litigation. Because SEIA failed to anticipate FERC's decision to reconsider the send-out approach in the Broadview adjudication, it also failed to timely intervene in that proceeding and thus could not participate to defend the approach.

[14] [15] At the outset, it should be noted that agencies have “very broad discretion to decide whether to proceed by adjudication or rulemaking.” *Conf. Grp., LLC v. FCC*, 720 F.3d 957, 965 (D.C. Cir. 2013). The Commission's decision to consider the send-out approach in the Broadview adjudication, rather than through the rulemaking process, was within the bounds of its discretion. SEIA's claimed injury presupposes that it had a right to participate in any proceedings regarding the send-out approach. It did not. “[T]he mere fact that an adjudication creates a precedent that could harm a non-party does not create the injury-in-fact required for Article III standing.” *Id.* at 959.

SEIA's failure to timely intervene is the result of its own mistaken judgment. The effect of that mistake—SEIA's inability to participate in the Commission's proceedings—does not give rise to an Article III injury. Accordingly, its petitions are dismissed.

CONCLUSION

*6 For the reasons stated above, we deny the Utilities' petitions and dismiss SEIA's petitions.

Walker, Circuit Judge, concurring in part and dissenting in part:

The Public Utility Regulatory Policies Act gives lucrative benefits to small facilities that produce solar power. It defines them as facilities with a “power production capacity” of no more than 80 megawatts. 16 U.S.C. § 796(17)(A)(ii).

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

Broadview is a solar-power facility. At its peak, it can produce up to 130 megawatts of useful power. So it is not a “small facility.”

Because the Federal Energy Regulatory Commission concluded otherwise, I would grant the petitions for review and vacate FERC's decision.

I. Background

A. The Public Utility Regulatory Policies Act

The Public Utility Regulatory Policies Act encourages companies to produce renewable energy. *See* 16 U.S.C. § 824a-3(a); *see generally* *FERC v. Mississippi*, 456 U.S. 742, 745-46, 750-51, 102 S.Ct. 2126, 72 L.Ed.2d 532 (1982) (describing the Act's history).

To achieve that goal, the Act gives extraordinary benefits to “small power production facilit[ies].” 16 U.S.C. § 796(17)(A). Those facilities produce electricity from “biomass, waste, renewable resources, [or] geothermal resources.” *Id.* § 796(17)(A)(i). The Act exempts them from several regulatory burdens. *Id.* § 824a-3(e)(1) (directing FERC to make rules exempting “small power production facilities” from regulation under various statutes). And it guarantees them a viable market by forcing public utilities to buy power that small facilities produce. 16 U.S.C. § 824a-3(a)(2), (b).

Requiring public utilities to purchase all the power produced by small facilities is strong medicine. It can force them to buy power that they do not need or to buy power at an above-market price. That cost is passed on to consumers. *Powering America: Reevaluating the Public Utility Regulatory Policies Act's Objectives and its Effects on Today's Consumers: Hearing Before the H. Subcomm. on Energy & Commerce, 115th Cong. 84 (2017)* (testimony of Terry L. Kouba, Vice President, Alliant Energy).

Thus, the Act's definition of “small facility” plays a key role in the statutory scheme: It keeps the mandatory-purchasing regime within bounds. The broader the definition of “small facility,” the greater the number of power plants that get special regulatory treatment under the Act.

The Act defines “small facility” as a “facility” with a “power production capacity” of no more than 80 megawatts. *Id.* § 796(17)(A)(ii).

B. Broadview's Design

Broad Reach Power makes solar and wind energy in California, Montana, Texas, Utah, and Wyoming. Its complex in Yellowstone County, Montana cost at least \$2 billion to build. In 2019, the Montana Complex could deliver 620 megawatts of power. That is only slightly less than the amount of power produced by the Hoover Dam in 1939, when it became the world's largest hydroelectric facility. *The Story of the Hoover Dam*, Bureau of Reclamation (July 13, 2022), <https://perma.cc/6JWN-BY77>.

In 2019, the Montana Complex contained four separate but similar solar-power projects. One of them is called Broadview I.

*7 Broadview includes a solar array, a battery, and inverters. With 470,000 solar panels, its solar array produces up to 160 megawatts of direct-current power. The battery stores some of those megawatts. And the inverters convert up to 80 megawatts from DC power to alternating-current power. Because the electric grid accepts only AC power, inversion makes the power ready for the grid to receive it.

Depending on the time of day, Broadview's components serve different purposes. During the day, the solar array sends 80 megawatts of power to the inverters and charges the battery. But at night, it can't generate power. That's when the battery matters most. At night, it sends stored power to the inverters and then on to the grid. With the battery, Broadview can deliver more power to the grid than it could without it.

C. FERC's Decision

In 2019, Broadview asked FERC to certify it as a “small facility.” It argued that its “power production capacity” was not greater than 80 megawatts because its inverters can send only 80 megawatts to the grid at once. 16 U.S.C. § 796(17)(A)(ii).¹

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

FERC initially denied Broadview's application, but it reversed course on rehearing. According to FERC, the Public Utility Act's definition of "small facility" is ambiguous because the statute "neither defines the terms 'facility' and 'power production capacity,' nor explains how the Commission is supposed to ascertain the 'power production capacity' of any particular 'facility.'" JA 200. FERC decided to interpret "power production capacity" to mean the "maximum output that the facility can produce for the electric [grid]." JA 201.

Two intervenors, Northwestern Energy and the Edison Electric Institute, petitioned for this Court's review. If Broadview is a small facility, the Public Utility Act's mandatory-purchasing rule will force Northwestern and some of Edison's members to buy Broadview's power — even if they don't need it.

II. *Chevron*

The majority opinion captures the central issue: "The parties' dispute in this case turns on the meanings of 'facility' and 'power production capacity' in 16 U.S.C. § 796(17)(A). [The Public Utility Act] does not define these terms. In plain language, a facility's 'power production capacity' is the maximum amount of power that the facility can produce. But the statute does not state whether the relevant capacity is that of the individual subcomponent generating DC power, *i.e.*, the solar array, or of all the facility's components working together to produce grid-usable AC power, which would include the inverters." Majority Op. ———.

I agree with that summary. The statute does not expressly state whether "power production capacity" includes "all the facility's components working together." But a lack of express language does not mean that the statute has no answer to the question presented. I would not so quickly conclude, as the Court's next sentence does, that "Congress has not spoken to the issue" and so we "must defer to any reasonable agency interpretation" under *Chevron v. Natural Resources Defense Council*, 467 U.S. 837, 104 S.Ct. 2778, 81 L.Ed.2d 694 (1984). Majority Op. ———.

*8 That is the path of "*Chevron* maximalism." *Buffington v. McDonough*, — U.S. —, 143 S. Ct. 14, 21, 214 L.Ed.2d 206 (2022) (Gorsuch, J., concurring in denial of certiorari).

When no express text makes the answer immediately obvious, some maximalists make a beeline to agency deference — before any inquiry into statutory structure, cross-references, context, precedents, dictionaries, or canons of construction. Then, they use the tools of statutory interpretation not to find the best reading of the text but instead to test whether the agency's interpretation is "reasonable." *Id.* at 20.

On the D.C. Circuit, *Chevron* maximalism is alive and well. *See, e.g., Loper Bright Enterprises, Inc. v. Raimondo*, 45 F.4th 359, 369 (D.C. Cir. 2022) ("some question" about the meaning of a statute is enough to trigger *Chevron* deference); *American Hospital Association v. Azar*, 967 F.3d 818 (D.C. Cir. 2020) (relying heavily on *Chevron*), *rev'd sub nom American Hospital Association v. Becerra*, — U.S. —, 142 S. Ct. 1896, 1906, 213 L.Ed.2d 251 (2022) (not mentioning *Chevron*).

But the Supreme Court's recent decisions repudiate maximalism. Indeed, the Court has not deferred to an agency under *Chevron* since 2016. *See, e.g., Becerra v. Empire Health Foundation*, — U.S. —, 142 S. Ct. 2354, 213 L.Ed.2d 685 (2022) (not mentioning *Chevron*); *National Federation of Independent Business v. OSHA*, — U.S. —, 142 S. Ct. 661, 211 L.Ed.2d 448 (2022) (same); *BNSF Railway Co. v. Loos*, — U.S. —, 139 S. Ct. 893, 203 L.Ed.2d 160 (2019) (same). Instead, the Court has policed the limits of deference to agencies. *See, e.g., West Virginia v. EPA*, — U.S. —, 142 S. Ct. 2587, 213 L.Ed.2d 896 (2022).

The most important limit is found in *Chevron* itself: "If a court, employing traditional tools of statutory construction, ascertains that Congress had an intention on the precise question at issue, that intention is the law and must be given effect." *Chevron*, 467 U.S. at 843 n.9, 104 S.Ct. 2778. In other words, courts must try every tool of statutory construction *before* declaring the text ambiguous and proceeding to agency deference. If they do, they "will almost always reach a conclusion about the best interpretation" of the statute, thus resolving any ambiguity. *Kisor v. Wilkie*, — U.S. —, 139 S. Ct. 2400, 2448, 204 L.Ed.2d 841 (2019) (Kavanaugh, J., concurring); *see also SAS Institute Inc. v. Iancu*, — U.S. —, 138 S. Ct. 1348, 1358, 200 L.Ed.2d 695 (2018) (quoting *Chevron*, 467 U.S. at 843 n.9, 104 S.Ct. 2778) ("Even under *Chevron*, we owe an agency's interpretation of the law no deference unless, after 'employing traditional tools

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

of statutory construction,’ we find ourselves unable to discern Congress’s meaning.”).

True, Congress may leave “a gap for the agency to fill.” *Chevron*, 467 U.S. at 843, 104 S.Ct. 2778. “For example, Congress might [direct] an agency to issue rules to prevent companies from dumping ‘unreasonable’ levels of certain pollutants. In such a case, what rises to the level of ‘unreasonable’ is a policy decision.” Brett M. Kavanaugh, *Fixing Statutory Interpretation*, 129 Harv. L. Rev. 2118, 2152 (2016). Where an agency uses its expertise to fill such a gap, courts should not second guess the agency’s decision. *Id.*

But today’s case is different. The Public Utility Act does not invite FERC to fill a policy gap. Instead, as FERC recognizes, the meaning of the statute’s technical language “turns on legal principles of the sort that a court usually [applies] — i.e., principles of statutory interpretation — and not determinations specifically entrusted to an agency’s expertise.” FERC Br. 40 n.9 (cleaned up). And courts should not defer when a statute’s meaning can be resolved using normal interpretive tools. “The judiciary is the final authority on issues of statutory construction.” *Chevron*, 467 U.S. at 843 n.9, 104 S.Ct. 2778.

*9 So here there is every reason to resist the temptation “habitua[lly] to defer to the interpretive views of [the] agenc[y].” *Valent v. Commissioner of Social Security*, 918 F.3d 516, 525, 205 L.Ed.2d 417 (6th Cir. 2019) (Kethledge, J., dissenting). Instead, we can decide this case by applying, in FERC’s words, the “legal principles of the sort that a court usually [applies] — i.e., principles of statutory interpretation.” FERC Br. 40 n.9 (cleaned up). That approach follows the Supreme Court’s recent *Chevron* caselaw and avoids further entrenching a vertical split between how the Supreme Court and lower courts apply *Chevron*.²

III. Broadview Is Not a “Small Facility”

Applying the normal tools of statutory interpretation, Broadview is not a “small facility” under the Public Utility Act because its “power production capacity” is greater than 80 megawatts.

A. “Facility”

Start with the term “facility.” 16 U.S.C. § 796(17)(A). A facility is “something ... that is built, installed, or established to serve a particular purpose.” Facility (def. 4b), *Merriam-Webster* (2023). The statute’s focus on a “facility” suggests that we should assess the production capacity of a power plant *as a whole*, not the capacity of an individual component.

That rules out a few possibilities.

First, it tells us that we should not look only at the capacity of Broadview’s 160-megawatt solar array. That approach would ignore the facility’s other components — for instance, the inverters that limit the array’s output to the grid.

Second, it tells us that we should not exclude the power used to charge the facility’s battery. The battery is part of the facility. So refusing to count power that the solar array sends to the battery fails to give full meaning to the word “facility.”

FERC says we shouldn’t count power sent to the battery because it is “not useful to anybody.” *See* Oral Arg. Tr. 31. But a battery like Broadview’s lets a solar facility send power to the grid at times when it otherwise could not. By allowing the facility to deliver power at night, the battery “increase[s] [Broadview’s] ability to provide reliable and/or timely service to ... customers.” JA 54 (Pasley Affidavit).

The battery also makes Broadview more efficient. A solar-power facility without a battery sends to the grid “approximately 25 to 30 percent” of the maximum power its array could theoretically generate each day. *Id.* With the battery, Broadview sends “approximately 35 to 40 percent,” *id.*, because it is “capable of sustaining its maximum output for additional hours in the day,” JA 23. That increased efficiency makes the facility more profitable. *See* Christopher Cerny, *A Broad View of Broadview Solar: How FERC’s Whiplash-Inducing Orders Expand the Scope of PURPA*, 23 Minn. J.L. Sci. & Tech. 363, 406 (2022).

In short, the battery *is* useful. It lets Broadview make more money by prolonging its maximum output.

B. “Power Production Capacity”

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

*10 Turn next to the phrase “power production capacity.”

1. “Power”

Power means “a source or means of supplying energy, especially[] electricity.” Power (def. 6), *Merriam-Webster* (2023). “Power” includes both DC power and AC power. *See Chemehuevi Tribe of Indians v. Federal Power Commission*, 489 F.2d 1207, 1217 (D.C. Cir. 1973) (discussing history of power transmission). So both the DC power used to charge the battery and the AC power sent directly to the grid count as “power.”

Yet FERC claims that only the 80 megawatts of AC power sent to the grid should count as Broadview's power-production capacity. That adds an atextual limit that Congress didn't adopt. The Public Utility Act says “power production capacity,” not “AC power production capacity.” And Congress is perfectly capable of saying “AC” when it wants to. *See, e.g., 26 U.S.C. § 48E(a)(2)(A)(ii)* (defining a “qualified facility” as one “with a maximum net output of less than 1 megawatt (*as measured in alternating current*)”) (emphasis added).

2. “Production”

After “power” comes “production.” To “produce” something is to “create” it, or to “cause [it] to accrue.” Produce (defs. 6 & 7), *Merriam-Webster* (2023). Another apt synonym is to “generate.” *See Facebook, Inc. v. Duguid*, — U.S. —, 141 S. Ct. 1163, 1171-72, 209 L.Ed.2d 272 (2021) (noting the “close[] connect[ion]” between the verb “produce” and the noun “generator”).

Power sent to a battery like Broadview's is created and does accrue. Before the sun's rays hit Broadview's array, the battery is empty. It is charged when the facility converts **solar energy** into useful power. If Broadview did not “produce” the power used to charge the battery, what did? ³

Consider what happens when the battery charges. Broadview uses a lithium-ion battery. Charging that battery prompts a chemical reaction, causing lithium ions to move within the battery. *How Does a Lithium-Ion Battery Work?*, Energy.gov (Sept. 14, 2017), <https://perma.cc/CUA8-Y9UK> (during

charging “[l]ithium ions are released by the cathode and received by the anode”). Without power, that chemical reaction could not happen. So Broadview must “produce” the power used to charge the battery.

3. “Capacity”

In the statute's context, “capacity” means “the maximum amount of power that the facility can produce.” Majority Op. — — —; *see also* Capacity (def. 5), *Merriam-Webster* (2023) (defining “capacity” as “maximum output”).

But here, FERC rewrites the statute. It says “capacity” includes only the power that a facility supplies to the electric grid. Yet that changes “power production capacity” to “power delivery capacity.” And the word “production” means something different from “delivery.” *See* Deliver (def. 5), *Merriam-Webster* (2023) (“[T]o send ... to an intended target or destination.”). ⁴

*11 To its credit, FERC conceded at oral argument that “power production capacity” would likely include power never delivered to the grid if it is used “on site” for a “useful” purpose like powering an on-site factory. Oral Arg. Tr. 30. But that concession just highlights the problem with FERC's approach: Charging a battery like Broadview's *is* a useful purpose.

C. Broadview's “Power Production Capacity”

Broadview has the capacity to produce 130 megawatts of power. It produces 80 megawatts of inverted AC power that is delivered to the grid *while* producing 50 megawatts of not-yet-inverted DC power to charge its battery. ⁵ Because “power” includes AC and DC power, Broadview's power production capacity is the sum of the two:

$$80 + 50 = 130$$

Consider an analogy. Every weekday, a lumberjack cuts down two trees and chops them into sellable timber. But he has a small truck and can take only one tree's worth of timber to market daily. What is the lumberjack's daily timber

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

“production capacity”? Two trees. Every day he works, he can turn two trees into sellable timber. (Maybe he delivers some of the other trees on the weekends.)

Broadview is similar. When the sun is out, Broadview produces 80 megawatts of power for the inverters and 50 megawatts of power for the battery — the equivalent of the lumberjack's two trees. Like the lumberjack's second tree, the 50 megawatts of power sent to the battery is still produced even though it isn't immediately delivered to the market for use on the grid. The key is that the 50 megawatts produced by the solar array and sent first to the battery is not wasted by the facility. Those 50 megawatts end up on the grid — just like the 80 megawatts sent from the solar array directly to the inverters.

That gives Broadview a power production capacity of 130 megawatts. And because the power production capacity of a “small facility” cannot exceed 80 megawatts, Broadview is not a “small facility.” 16 U.S.C. § 796(17)(A).

IV. Conclusion

The following three facts are uncontested:

1. When the Public Utility Act says “power,” it does not specify between AC power and DC power.
2. Broadview can send 80 megawatts of AC power directly to the grid for sale via the inverters.
3. At the exact same moment, up to 50 megawatts of DC power goes straight to the battery, then later to the inverters, and then on to the grid for sale.

Because Broadview can produce 80 megawatts for its inverters while it simultaneously produces 50 megawatts for its battery, Broadview's facility is capable of producing more than 80 megawatts of power. So it is too large to be a “small facility.”

For that reason, I would grant the petitions, vacate the rehearing orders, and remand to FERC for reconsideration.⁶

All Citations

--- F.4th ----, 2023 WL 1975079

Footnotes

- 1 Because Broadview is more than one mile apart from the other facilities in the Montana Complex, FERC analyzes it separately under the small-facility rule. 18 C.F.R. § 292.204(a)(1)-(2); see also Order re. *Broadview Solar III*, 2021 WL 3641570 (Aug. 13, 2021) (accepting withdrawal of an application for small-facility status for another plant in Montana Complex).
- 2 Though the Supreme Court has given up on *Chevron* maximalism (and perhaps on *Chevron* altogether), lower courts have not. Between 2003 and 2013, lower courts applied *Chevron* in 74.8% of statutory interpretation cases involving agencies and reached step two 65.7% of the time. Kent H. Barnett & Christopher J. Walker, *Chevron in the Circuit Courts*, 116 Mich. L. Rev. 1, 29, 33 (2017). That trend has continued since then. In 2020 and 2021, circuit courts applied *Chevron* 84.5% of the time and reached step two in 59.2% of those cases. See Brief of the Cato Institute and Liberty Justice Center as Amicus Curiae in Support of Petitioners at 21, *Loper Bright v. Raimondo*, No. 22-451 (2022) (supporting petition for certiorari).
- 3 Some power at facilities like Broadview is lost to inefficiencies during production. FERC allows power plants to deduct those “electrical losses” from their power production capacity. See JA 210. So if Broadview had a 160-megawatt array, 80-megawatt inverters, and no battery, it would count as a “small facility” — albeit an inefficient one that loses half of its potential output during production.

Solar Energy Industries Association v. Federal Energy..., --- F.4th ---- (2023)

- 4 FERC conflated “production” and “delivery” in its rehearing order, although its counsel wisely retreated from that approach on appeal. *Compare* JA 201 (FERC: “ ‘production’ and ‘delivery’ ... are overlapping”), *with* Oral Arg. Tr. 33 (FERC: “we’re not talking about delivery”); *id.* at 37 (“[Y]ou’re not depending on a conflation of the words production and delivery — right? [FERC:] Correct.”).
- 5 The record is unclear on the amount of power the battery can receive from the array. But the parties agree that the battery can take in up to 50 megawatts. *Compare* Edison Br. 10 n.3 (“The Broadview Project’s battery can be charged at the same rate as it discharges — i.e., it can receive and send out 50 megawatts of energy each hour.”), *with* FERC Br. 14 (“[U]p to 50 megawatts of power is diverted to battery storage for later release.”).
- 6 I agree with the majority that **Solar Energy** lacks standing to challenge FERC’s denial of its motion to intervene.

William Penn School District; Panther Valley School..., Not Reported in Atl....

2023 WL 1990723

Editor's Note: Additions are indicated by **Text** and deletions by **Text** .

Only the Westlaw citation is currently available.

See Pa. Commonwealth Court Internal Operating Procedures, Sec. 414 before citing.

Commonwealth Court of Pennsylvania.

William Penn School District; Panther Valley School District; The School District of Lancaster; Greater Johnstown School District; **Wilkes-Barre Area School District**; **Shenandoah Valley School District**; Jamella and Bryant Miller, parents of K.M., a minor; **Sheila Armstrong**, parent of S.A., minor; Tracey Hughes, parent of **P.M.H.**, minor; Pennsylvania Association of Rural and Small Schools; and **The National Association** for the Advancement of Colored People-Pennsylvania State Conference, Petitioners

v.

Pennsylvania Department of Education; Kim L. Ward, in her official capacity as President Pro-Tempore of the Pennsylvania Senate; Mark Rozzi, in his official capacity as the Speaker of the Pennsylvania House of Representatives; Josh Shapiro, in his official capacity as the Governor of the Commonwealth of Pennsylvania; Pennsylvania State Board of Education; and Dr. Khalid N. Mumin, in his official capacity as Acting Secretary of Education, Respondents

No. 587 M.D. 2014

I

FILED: February 7, 2023

OPINION NOT REPORTED

RENÉE COHN JUBELIRER, President Judge

TABLE OF CONTENTS

***1** I. INTRODUCTION AND BACKGROUND.....1

II.	FINDINGS	OF
FACT		3
A.	The	
Parties.....		3
B.	Education	
Clause.....		8
C.	The	
System.....		21
1.	The	
Department.....		25
2.	The	State
Board.....		32
a. Master Plan		34
b. Academic Standards		37
D.	Types	of
Assessments		43
1.	State	Assessment
System.....		43
2.	ESSA	Plan
Goals		57
3.		PVAAS/ Growth
.....		66
4.	Future	Ready
Index.....		PA 69
5.		
Attainment.....		72
6.		Other
Measures		73
E.	Funding	of
System.....		the 74

**Wright, Walter 2/22/2023
For Educational Use Only**

William Penn School District; Panther Valley School..., Not Reported in Atl....

1.	Federal				
Funding	76	12.	Springfield		
		Township.....	384		
2.	State				
Funding	80	13.	Charter		
		Schools.....	390		
3.	Local				
Funding	97	a. Commonwealth Charter Academy	391		
4.	Local	School	District	b. 21st Century Academy	400
Budgeting.....	97				
F.	Fact			14.	Logos
Witnesses.....	102	Academy	405		
1.	State	Board	and	Department	
witnesses.....	102			15.	NAACP-
				PA.....	411
2.	David			G.	Expert
Donley	116			Witnesses	415
3.	Greater			1.	
Johnstown.....	118			Petitioners.....	415
4.	Panther			a. Derek Black	415
Valley.....	152			b. Matthew G. Kelly	418
5.				c. Steven Barnett.....	446
Lancaster	193			d. Pedro Noguera	456
6.	Shenandoah			e. Clive Belfield.....	468
Valley	244			f. Rucker Johnson.....	480
7.	Wilkes-			2.	
Barre	268			Respondents	500
8.	William			a. Christine Rossell.....	500
Penn.....	306			b. Jason Willis.....	506
9.				c. Abel Koury	539
Philadelphia.....	344			d. Max Eden.....	547
10.	Otto-			e. Eric Alan Hanushek.....	556
Eldred.....	374				
11.					
PARSS	381				

William Penn School District; Panther Valley School..., Not Reported in Atl....

<p>H. Effect of Funding Scheme on Low Wealth Districts569</p> <p>III. WHETHER PETITIONERS HAVE FAILED TO JOIN INDISPENSIBLE PARTIES.....</p> <p>IV. WHETHER THE WRONG PARTIES WERE SUED.....611</p> <p>V. PENNSYLVANIA'S EDUCATION CLAUSE.....616</p> <p>VI. DEFINING “A THOROUGH AND EFFICIENT SYSTEM OF PUBLIC EDUCATION TO SERVE THE NEEDS OF THE COMMONWEALTH”617</p> <p style="padding-left: 20px;">A. Parties’ Arguments.....617</p> <p style="padding-left: 40px;">1. Petitioners.....617</p> <p style="padding-left: 40px;">2. Legislative Respondents619</p> <p style="padding-left: 40px;">3. Executive Respondents623</p> <p style="padding-left: 40px;">4. State Board.....624</p> <p style="padding-left: 40px;">5. Petitioners’ Reply.....624</p> <p style="padding-left: 40px;">6. Amici.....626</p> <p style="padding-left: 20px;">B. Discussion627</p> <p style="padding-left: 40px;">1. Plain Language.....628</p> <p style="padding-left: 40px;">2. History.....634</p>	<p style="text-align: right;">3. Other Jurisdictions636</p> <p>VII. MEASURING WHETHER RESPONDENTS ARE FULFILLING THEIR CONSTITUTIONAL OBLIGATION AND MEETING THE STANDARD.....647</p> <p style="padding-left: 20px;">A. Parties’ Arguments.....647</p> <p style="padding-left: 40px;">1. Petitioners.....647</p> <p style="padding-left: 40px;">2. Legislative Respondents650</p> <p style="padding-left: 40px;">3. Executive Respondents656</p> <p style="padding-left: 40px;">4. State Board.....657</p> <p style="padding-left: 40px;">5. Amici.....658</p> <p style="padding-left: 40px;">6. Petitioners’ Reply.....663</p> <p style="padding-left: 20px;">B. Discussion665</p> <p style="padding-left: 40px;">1. Applicable Standard of Review and Burden of Proof665</p> <p style="padding-left: 40px;">2. Measuring whether the standard is being met675</p> <p style="padding-left: 60px;">*2 a. The Inputs676</p> <p style="padding-left: 80px;">i. Funding.....677</p> <p style="padding-left: 80px;">ii. Courses, curricula, and other programs.....681</p> <p style="padding-left: 80px;">iii. Staffing690</p>
--	--

William Penn School District; Panther Valley School..., Not Reported in Atl....

<p>iv. Facilities698</p> <p>v. Instrumentalities of learning.....702</p> <p>b. The Outcomes.....707</p> <p> i. State Assessments709</p> <p> ii. PVAAS.....718</p> <p> iii. National measures722</p> <p> iv. High school graduation rates.....723</p> <p> v. Postsecondary enrollment and attainment.....726</p> <p> vi. Other measures.....728</p> <p>VIII. WHAT TYPE OF RIGHT IS EDUCATION AND WHAT LEVEL OF SCRUTINY APPLIES TO PETITIONERS’ EQUAL PROTECTION CLAIM..729</p> <p> A. Parties’ Arguments.....729</p> <p> 1. Petitioners.....729</p> <p> 2. Legislative Respondents731</p> <p> 3. Executive Respondents & State Board735</p> <p> 4. Amici.....735</p> <p> 5. Petitioners’ Reply.....740</p> <p> B. Discussion741</p> <p> 1. Type of Right745</p>	<p>2.</p> <p>IX. WHETHER RESPONDENTS VIOLATED THE EQUAL PROTECTION CLAUSE</p> <p> A. Parties’ Arguments.....765</p> <p> 1. Petitioners.....765</p> <p> 2. Legislative Respondents766</p> <p> 3. Petitioners’ Reply.....768</p> <p> B. Discussion769</p> <p> X. CONCLUSION.....770</p> <p>I. INTRODUCTION AND BACKGROUND</p> <p>Benjamin Franklin once said “[a]n investment in knowledge pays the best interest.”¹ Here, the question is whether the investment the Commonwealth of Pennsylvania has made in its system of public education complies with the Pennsylvania Constitution. Six school districts,² along with some parents and their children,³ and two organizations,⁴ brought this action in the Court’s original jurisdiction nearly a decade ago, claiming Respondents⁵ are not investing enough, particularly in the lower-wealth school districts across the Commonwealth and, as a result, are not meeting their constitutional duties.</p> <p>*3 Specifically, at issue is whether the General Assembly has provided for the “maintenance and support of a thorough and efficient system of public education to serve the needs of the Commonwealth,” as the Education Clause of the Pennsylvania Constitution, PA. CONST. art. III, § 14, requires. Petitioners allege it has not, and this alleged violation is the basis of count I of Petitioners’ Petition for</p>	<p>Level of Scrutiny.....760</p> <p>of</p> <p>760</p> <p>765</p> <p>765</p> <p>766</p> <p>768</p> <p>769</p> <p>770</p>
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William Penn School District; Panther Valley School..., Not Reported in Atl....

Review. In count II, Petitioners contend that low-wealth districts, which frequently serve higher need students, are not on a level playing field with higher-wealth districts, such that the current funding system violates equal protection principles.

Respondents originally filed preliminary objections to the Petition for Review, alleging, among other things, that this matter involved political questions and, thus, was not justiciable under separation of powers principles. An en banc panel of this Court agreed, sustained those preliminary objections, and dismissed the Petition for Review. *William Penn Sch. Dist. v. Pa. Dep't of Educ.*, 114 A.3d 456 (Pa. Cmwlth. 2015) (*William Penn I*). On appeal, the Pennsylvania Supreme Court reversed and remanded the matter for disposition of other preliminary objections, which had not previously been addressed. *William Penn Sch. Dist. v. Pa. Dep't of Educ.*, 170 A.3d 414 (Pa. 2017) (*William Penn II*). Following remand, another en banc panel of this Court overruled the remaining preliminary objections. *William Penn Sch. Dist. v. Pa. Dep't of Educ.* (Pa. Cmwlth., No. 587 M.D. 2014, filed May 7, 2018) (*William Penn III*). The Court deferred ruling on an application to dismiss the matter as moot based upon an intervening change to the statutory funding scheme and permitted Petitioners to file an amended petition for review, if desired. *Id.* Petitioners did not, and subsequently the Court denied the application to dismiss. (*See Order of August 20, 2018.*)

Respondents filed answers with new matter, to which Petitioners replied, thereby closing the pleadings. This matter was then specially assigned to the undersigned for purposes of case management and trial. Over the course of the next two years, the parties engaged in extensive discovery, which saw seven unopposed extensions of case management deadlines granted. Prior to trial, the Court ruled upon various discovery disputes and motions *in limine*. Pretrial preparations were also complicated by the COVID-19 (COVID) pandemic.

Finally, on November 12, 2021, the Court heard the parties' opening statements. Over the course of 49 days, dozens of witnesses testified live, and numerous others testified via deposition. The trial transcript alone spans over 15,000 pages. In addition, nearly 1,700 exhibits were admitted into the record. Based upon the voluminous record, the Court makes the following findings of fact.

II. FINDINGS OF FACT

A. The Parties

1. Petitioners are a collection of Pennsylvania school districts, parents, students/former students, and organizations who have asserted a constitutional challenge to the Commonwealth's system for funding public K-12 education.

2. The Greater Johnstown School District (Greater Johnstown) is located in Cambria County, Pennsylvania, around the City of Johnstown. (*See Joint Stipulation of Facts (Nov. 1, 2021) (Stip.)*, ¶ 6.)

3. The City of Johnstown was once a thriving steel and coal center. (*Transcript (Tr.) at 2572.*) Greater Johnstown is located in a blue-collar community and is now the poorest school district in the Commonwealth by median income. (*See PX-04828; Tr. at 2572-73.*) Its biggest employers are a medical facility and the school district itself. (*Tr. at 2574-75.*)

*4 4. There are three schools in Greater Johnstown, serving approximately 2,900 students total: an elementary school for grades K-4; a middle school for grades 5-7; and a high school for grades 8-12. (*PX-04807; Tr. at 2580, 2569-70, 2640.*)

5. The School District of Lancaster (Lancaster) is located in Lancaster County and encompasses the City of Lancaster, which has approximately 60,000 residents, and Lancaster Township, a small town that could not afford its own school system. (*Tr. at 5045-46, 6000-01; Stip. ¶ 7.*) It is one of the largest school districts in the state, with approximately 10,500 students. (*Tr. at 5046.*)

6. Lancaster has 19 schools in 20 buildings: 12 elementary schools that house students in grades K-5; 1 school that serves students in grades K-8; 4 middle schools for students in grades 6-8; 1 high school for grades 9-12; 1 cyber school; and an alternative school for students who are over-age and under-credited. (*Tr. at 5047, 5226-27, 5232; Stip. ¶ 7.*)

7. Panther Valley School District (Panther Valley) is comprised of four small towns across Carbon and Schuylkill Counties — Summit Hill, Lansford, Nesquehoning, and Coaldale. (*Tr. at 262; Stip. ¶ 8.*) Panther Valley is a former coal mining community and is facing the departure of its three biggest businesses. (*Tr. at 263-65, 813-14.*)

William Penn School District; Panther Valley School..., Not Reported in Atl....

8. There are approximately 1,800 students in Panther Valley, an enrollment that has increased in recent years. (Tr. at 265-66.) Panther Valley operates three schools: the Panther Valley Elementary School for grades K-3, the Panther Valley Intermediate School for grades 4-6, and the Panther Valley Junior Senior High School for grades 7-12. (Tr. at 266.)
9. Shenandoah Valley School District (Shenandoah Valley) is a small, rural district in the heart of Pennsylvania's former coal country, in Schuylkill County. (Tr. at 3376; Stip. ¶ 9.) Its only significant industry today is Mrs. T's Pierogies, a prepared food manufacturer. (Tr. at 3376.)
10. There are approximately 1,100 students in Shenandoah Valley, who all learn in one school building containing both an elementary school (for grades pre-K-6) and a secondary school (for grades 7-12). (Tr. at 3377; PX-04812.)
11. Wilkes-Barre Area School District (Wilkes-Barre) is an urban district on the banks of the Susquehanna River in Luzerne County, Pennsylvania. (Stip. ¶ 10.) The district serves “a coal mining community that has a rich tradition.” (Tr. at 10669-70.)
12. Wilkes-Barre serves approximately 7,500 students in nine schools: five elementary schools for students in grades K-5, two middle schools for grades 6-8, Wilkes-Barre Area High School for grades 9-12, and a STEM Academy that is located within the high school. (Tr. at 10648-49.) Wilkes-Barre Area High School, which opened in September 2021, is the result of a consolidation of three former schools in the district: James M. Coughlin High School (Coughlin); Elmer L. Meyers High School (Meyers); and GAR High School (GAR). (Tr. at 10649-50; Stip. ¶ 10.)
13. Comprised of six boroughs that were consolidated into one district in 1971, the William Penn School District (William Penn) is a majority Black district located in Delaware County. (Tr. at 6528-29, 6863, 6865-66; PX-04811.)
- *5 14. William Penn educated approximately 4,900 students in 2019-20. (Tr. at 6865; PX-04811.) The district's facilities comprise 12 buildings: 8 elementary schools, 1 middle school, 2 high school buildings, and the central administration building. (Tr. at 6866; Stip. ¶ 11.)
15. Student Petitioner S.A. is a 2020 graduate of Mastbaum High School (Mastbaum) in the School District of Philadelphia (SDP). (Parties' Joint Designations of the 7/3/2019 Deposition of S.A. (S.A. Dep.) at 8-9; Stip. ¶ 13.) Petitioner Sheila Armstrong is the mother of S.A. and a resident of SDP. (Stip. ¶ 13.)
16. SDP is not a party to this matter, although Student Petitioner S.A. attended SDP. SDP is situated in the “poorest big city in the country” and is the Commonwealth's largest school district “by far.” (Tr. at 7707, 7712.)
17. SDP operates 216 schools and a total of 300 buildings, many of which are badly aging. (Tr. at 7709-10.) In 2019-20, the district had an enrollment of approximately 130,617 students, and another 70,000 SDP students were enrolled in charter schools. (Tr. at 7711-12; PX-04813.)
18. Petitioner P. Michael Horvath⁶ graduated from Wilkes-Barre in 2019. (Stip. ¶ 14; Tr. at 10037.) His mother is Petitioner Tracey Hughes, a resident of the district.
19. Student Petitioner K.M. formerly attended William Penn and is a 2021 graduate of the Pennsylvania Leadership Charter School. (Stip. ¶ 12.) Petitioners Bryant and Jamella Miller are the parents of Petitioner K.M., and residents of the William Penn. (Stip. ¶ 12.)⁷
20. The Pennsylvania Association of Rural and Small Schools (PARSS) is a statewide membership organization composed of approximately 178 second-, third-, and fourth-class public school districts and 18 intermediate units (IUs) in Pennsylvania, including Shenandoah Valley. (Stip. ¶ 15; PD-00009-0002-0023.) Any school district that has a small student count or is considered rural based on a sparsity calculation can become a member of PARSS. (Tr. at 6138.) Overall, PARSS districts serve approximately 300,000 students across the Commonwealth. (Tr. at 6138.)
21. Petitioner NAACP-Pennsylvania State Conference (NAACP-PA) is a non-profit organization operating in Pennsylvania and is a unit of the National Association for the Advancement of Colored People (NAACP), described as the nation's oldest and largest nonpartisan civil rights organization. (Stip. ¶ 16.) A primary purpose of the NAACP-

William Penn School District; Panther Valley School..., Not Reported in Atl....

PA is to improve the political, educational, social, and economic status of African Americans and other racial and ethnic minorities. (Stip. ¶ 16.) The NAACP-PA includes members whose children and grandchildren attend public schools in Pennsylvania. (Tr. at 8918-19.)

22. Petitioners named the Governor of the Commonwealth of Pennsylvania (Governor) as a Respondent in his official capacity. (Stip. ¶ 18.)

23. Petitioners named the Pennsylvania Department of Education (Department or PDE) as a Respondent. It is empowered by statute to “administer all of the laws of this Commonwealth with regard to the establishment, maintenance, and conduct of the public schools[.]” Section 1302(a) of The Administrative Code of 1929, 71 P.S. § 352(a).⁸ It oversees all public school districts, IUs, charter schools, cyber charter schools, career and technology centers (CTC), and vocational technical schools, among other components of Pennsylvania’s system of public education. (Stip. ¶ 17.)

*6 24. Petitioners named the Secretary of the Department of Education (Secretary) as a Respondent in his official capacity. (Stip. ¶ 19.)

25. The Governor, Department, and Secretary are referred to herein as Executive Respondents, collectively.

26. Petitioners named the Speaker of the Pennsylvania House of Representatives (Speaker) as a Respondent in his official capacity. (Stip. ¶ 20.)

27. Petitioners also named the President Pro Tempore of the Pennsylvania Senate (President Pro Tempore) as a Respondent in an official capacity. (Stip. ¶ 21.)

28. Speaker and President Pro Tempore are, together, referred to herein as Legislative Respondents.

29. Respondent Pennsylvania State Board of Education (State Board or Board) is the regulatory and policy-making board for basic and higher education in the Commonwealth and is responsible for adopting “broad policies and principles, and establish[ing] standards governing the educational program of the Commonwealth.” Section 2603-B(a) of The Public

School Code of 1949 (School Code), 24 P.S. § 26-2603-B(a).⁹

B. Education Clause

30. The United States Constitution does not contain a provision addressing education.

31. The history surrounding what became the Education Clause in the Pennsylvania Constitution was discussed extensively by the Pennsylvania Supreme Court in *William Penn II*. The Supreme Court’s discussion relied heavily on the “exemplary” unpublished single-judge opinion of Judge Pellegrini in *Pennsylvania Association of Rural & Small Schools v. Ridge* (Pa. Cmwlth., No. 11 M.D. 1991, filed July 9, 1998), slip op. at 86-105, *aff’d*, 737 A.2d 246 (Pa. 1999) (*PARSS*). See *William Penn II*, 170 A.3d at 419-23 & n.6.

32. Petitioners presented the testimony of Derek Black, a professor of law at the University of South Carolina Law School and the Ernest F. Hollings Chair in Constitutional Law at the University of South Carolina Law School. (Tr. at 904.) At trial, Professor Black was qualified as an expert in “the history of education law with a specialty in the history of state constitutional education clauses.” (Tr. at 918-19.) Professor Black published more than 30 articles and a textbook about education law, policy, and history with a focus on the history of education clauses in state constitutions and has analyzed approximately 20 state education clauses. (Tr. at 905-12.) The Court finds Professor Black’s testimony as to the facts of the Education Clause credible. Legislative Respondents objected to Professor Black’s testimony as providing a legal opinion that goes to the ultimate issue in this case. (*Id.* at 901-02.) The Court ultimately overruled the objection finding his testimony was factual in nature. (*Id.* at 6828-29.) To the extent Professor Black proffered any legal opinion testimony on the interpretation of the Education Clause, the Court does not consider it.

33. Even before education became part of the Constitution, our founders recognized its importance. William Penn, in his 1681 Frame of Government of Pennsylvania, the Commonwealth’s first charter, provided for the creation of schools, and Penn himself believed that no cost should be spared in providing for education. *PARSS*, slip op. at 87.

William Penn School District; Panther Valley School..., Not Reported in Atl....

*7 34. While it was absent from the 1701 Charter of Privileges, the topic of education was set forth in the Commonwealth's first constitution. The 1776 Constitution provided “[a] school or schools shall be established [in] each county by the legislature, for the convenient instruction of youth, with such salaries to the masters paid by the public, as may enable them to instruct youth at low prices.” PA. CONST. OF 1776, § 44.

35. In 1790, the original provision was replaced with the following: “The legislature shall, as soon as conveniently may be, provide, by law, for the establishment of schools throughout the State, in such manner that the poor may be taught gratis.” PA. CONST. OF 1790, art. VII, § 1.

36. As Judge Pellegrini previously stated, the 1790 Constitution, which established what became known as “pauper school[s],” did not have widespread reach and was not accomplishing its goal. *PARSS*, slip op. at 89. In 1828, the Commonwealth paid tuition for just less than 4,500 children, and more than half of Pennsylvanian children did not attend school. *Id.* Public schooling had failed to gain traction in poor and more remote areas of Pennsylvania, and a significant portion of rural Pennsylvania did not have any schools. (Tr. at 1027-28.) As a result, numerous efforts were undertaken to expand education's reach to more children.

37. Governor George Wolf, in an 1830 address to the legislature, stated:

Of the various projects which present themselves, as tending to contribute most essentially to the welfare and happiness of a people, and which come within the scope of legislative action, and require legislative aid, there is none which gives more ample promise of success, than that of a liberal and enlightened system of education, by means of which, the light of knowledge will be diffused throughout the whole community, and imparted to every individual susceptible of partaking of its blessings; to the poor as well as to the rich, so that

all may be fitted to participate in, and to fulfil all the duties which each one owes to himself, to God, and to his country. The constitution of Pennsylvania imperatively enjoins the establishment of such a system. Public opinion demands it. The state of public morals calls for it; and the security and stability of the invaluable privileges which we have inherited from our ancestors, require our immediate attention to it.

Id. at 90 (quoting VI *Register of Pennsylvania* 386 (1830), quoted in Cremin, *The American Common School* 104-05). From this, it is clear that one of the end goals of our forebearers was to provide as many children as possible with an education that would allow them to participate as meaningful and productive members of society.

38. A few years later, a bill was passed creating a system of public schools with school districts in every ward, township, and borough.¹⁰ *Id.* at 92. Along with the bill, the joint legislative committee on education issued a report stating:

A radical defect in our laws upon the subject of education, is that the public aid now given, and imperfectly given, is confined to the poor. Aware of this, your committee have taken care to exclude the word *poor*, from the bill which will accompany this report, meaning to make the system *general*, that is to say, to form an educational association between the rich, the comparatively rich, and the destitute. Let them all fare alike in the primary schools; receive the same elementary instruction; imbibe the same republican spirit, and be animated by a feeling of perfect equality. (Emphasis added.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

*8 *Id.* at 91 (quoting XIII *Register of Pennsylvania* 97 (1834), quoted in Cremin, *The American Common School* 106).

39. Under the new law, a tax-based system was born, and districts that opted into the new system were required to raise two times the amount to be provided by the state.¹¹ *Id.* at 92. “By 1837, 742 of the 987 districts were participating in the state system.” *Id.*

40. Although a constitutional convention in 1837 resulted in a new constitution, the language of the Education Clause remained unchanged from the 1790 Constitution. *Compare PA. CONST. OF 1790, art. VII, § 1, with PA. CONST. OF 1838, art. VII, § 1.*

41. Despite the language remaining constant, the Commonwealth's involvement in education did not remain stagnant.¹² For instance, “the first state normal schools” were established, along with the State Teachers’ Association, and the *Pennsylvania School Journal* was first published. *PARSS*, slip op. at 93.

42. A constitutional convention was held from November 12, 1872, to December 27, 1873. (Tr. at 928.) The impetus of the 1872-73 Constitutional Convention was to address political corruption and abuses. *See* Hellerich, *Public Education and the Pennsylvania Constitutional Convention of 1873*, *History of Education Journal* (Autumn, 1957, Vol. 9, No. 1, pp. 1-7). Petitioners’ expert Professor Black explained that the “convention was called for the specific purpose of solving perceived problems in the Commonwealth at the time,” one of which, he testified, was public education. (Tr. at 924-28.)

43. By the time of the next constitutional convention in 1873, “[a]dvocates of public education, armed with a succession of legislative actions, wanted to solidify the constitutional basis of public schools by proposing new language for the education article.” *PARSS*, slip op. at 97.

44. At one of the first readings of the Education Clause before the committee of the whole at the Constitutional Convention, a member of the Committee on Education stated that Pennsylvania had “long since” “out-grown” pauper schools. *See* DEBATES OF THE CONVENTION

TO AMEND THE CONSTITUTION OF PENNSYLVANIA (1873) (“PENNSYLVANIA DEBATES”), Vol. 2:419.¹³

*9 45. The Committee on Education first proposed Section 1 of the Education Clause to provide: “The Legislature shall provide for the maintenance and support of a thorough and efficient system of public schools, wherein all the children of this Commonwealth above the age of six years may be educated.” *Id.*, Vol. 2:250, 2:419. Section 2 proposed an appropriation of at least \$1 million annually for public schools. *Id.*, Vol. 2:250; 2:435.¹⁴ There was also discussion among the delegates about other potential requirements, such as compulsory education, uniformity across curricula and textbooks, and creation of industrial schools for delinquent or neglected children.

46. One delegate stated that “our action, if this article be adopted in its present form, is pure legislation.” *Id.*, Vol. 7:691. Another delegate agreed the Constitution was “loaded down” with legislation, “but if we are to legislate at all, I insist that we shall legislate upon this most important of all the interests of the State.” *Id.*, Vol. 7:678.

47. The delegates shared the viewpoint that education was of the utmost importance to the Commonwealth. *See, e.g., id.*, Vol. 2:421 (“The section on education is second in importance to no other section to be submitted to this Convention.”); 2:389 (“The most important interest requiring attention in our State is unquestionably that of education.”); 6:39 (“This section as it is now is the most important section that has been reported from any committee.”); 7:680 (“[A] system of public school education is the most important interest of the State.”); 7:691-92 (“If there is any duty more incumbent upon the whole people of this Commonwealth than any other, it is to see that every child of the Commonwealth shall be educated and taken care of.”).

48. While the delegates appeared to agree that education should be addressed in the new Constitution, there was debate as to what extent. The more requirements sought to be imposed led to divide among the delegates.

49. On the one hand, there were delegates that appeared to welcome imposing greater requirements on the Legislature in terms of what must be provided. For example, some viewed the proposed \$1 million appropriation as being “of the highest

William Penn School District; Panther Valley School..., Not Reported in Atl....

importance to the efficiency of the public school system of Pennsylvania.” *Id.*, Vol. 2:436. However, some delegates thought the figure was not enough or would be viewed as a limit, rather than a floor, on spending. *See id.*, Vol. 6:39 (“It lags behind now and has for twenty years lagged behind the appropriations that were made when the present system was first brought into existence, and it is because the Legislature has not come up to the demands of the interests of education that this ought to stand as it is.”); 6:56 (“I feared that a provision of that kind in the Constitution would be taken by the Legislature as a limit, and that it would appropriate that sum and no more.”).

50. On the other hand, there were other delegates who bucked at imposing too many requirements on the Legislature for fear they were usurping legislative authority. *See, e.g., id.*, Vol. 7:681 (“[T]he Legislature has entire control over the subject of education.”); 7:689 (“[W]e have here in the Constitution usurped the functions of the Legislature.”).

51. This was particularly so with regard to the \$1 million appropriation requirement, which some delegates thought was “entirely within the discretion of the Legislature[] and should be properly left there,” and that “[t]he Convention has no power to make any appropriation out of the public treasury,” as “[t]hat is a matter which rests exclusively with the Legislature.” *Id.*, Vol. 7:678. *See also id.*, Vol. 7:678-79 (calling the \$1 million floor “a gross assumption of the power that belongs to the Legislature”); 7:690-91 (“You have taken away from the Legislature the power to appropriate money,” and “[w]e have thus far usurped the power of the Legislature, the proper authority to raise and disburse money, and appropriated absolutely one million of dollars annually to the common schools.”).

*10 52. Another delegate said that more money needed to be distributed to neglected children, “and less of it distributed for the higher branches of education in schools to which many children are sent when their parents are fully competent and able and sufficiently wealthy to educate them otherwise.” *Id.*, Vol. 6:46. It appeared several delegates did not believe it was necessary to provide the so-called higher branches of education in all schools. According to one delegate, “[t]he purpose of the common school system of Pennsylvania is to instruct the children of the State in these common branches of education, and not in the higher branches.” *Id.*, Vol. 2:433. And one delegate stated:

I think that the wants of the people of this Commonwealth, and the good of the Commonwealth itself are not entirely contained in this word “education,” or what is understood by the term “education.” Every one understands what the word education means. It is being taught in those branches of knowledge which are to fit persons for the useful duties of life. It is to teach them the ordinary branches of reading, writing and arithm[e]tic and such other additional branches as the laws may provide shall be taught in the public schools.

Id., Vol. 6:51-52.

53. Another area in which there was significant disagreement centered on whether the system should be uniform. The delegate who first proposed adding the word “uniform” to the Education Clause expressed concern that without the term, “there is no limitation whatever to the extent or variety of schools that we may have in this State.” *Id.*, Vol. 2:422. Echoing current concerns, there was also concern at that time that poorer counties would be taxed at a high rate while wealthier counties could impose a smaller tax but still offer more to their students. *Id.*, Vol. 7:679.

54. Others saw uniformity as “very impracticable.” *Id.*, Vol. 2:422. The Committee on Education rejected including the word “uniform” because a “majority of its members thought the introduction of the word, if not fraught with some danger, would, at least be attended with considerable inconvenience.” *Id.*, Vol. 2:423. One delegate opposing a uniform system stated:

We do not want to have a “uniform” system. We want to have the right to introduce when and where we please some of these higher branches into our common schools, so that our children who can not go to colleges and academies away from home may go into their own schools, paid for and sustained by the people of the State, and study these higher branches with a teacher of competence. We do not

William Penn School District; Panther Valley School..., Not Reported in Atl....

want this word “uniform” here for it may be construed as to lead to a conclusion on the part of school directors and others that we are to have only the elementary branches so as to be “uniform” with similar schools elsewhere in the country. ... Why, this word would operate even as against the introduction of chemical or philosophical apparatus into one school because in another school they could not afford to have it.

Let those of us who prefer the plan of giving our children the benefits of the higher studies in their own district, and near their own homes, be allowed to do so. As to the school tax, we can, in any event, only get our share of that; and if we choose to pay something more for the privilege I speak of, over and above the tax, let us have the right to do it. Let us have a higher class of studies where we want it. If you put this word “uniform” into the section, school directors will hesitate and discuss whether they have a right to do anything of this kind or not.

Id., Vol. 2:425-426.

55. Yet another delegate “doubt[ed] very much whether it is the duty of the Commonwealth to provide for the education of the children at large,” instead suggesting the matter “belongs, primarily, to the citizens of each locality.” *Id.*, Vol. 7:679. This sentiment was echoed when a proposal was made to require uniform books across the Commonwealth, where a delegate thought that school board directors of each district “know better what the children in their district need.” *Id.*, Vol. 2:429. Some delegates thought the issue was one for the Legislature. *Id.*, Vol. 2:432; 2:453. Ultimately, uniformity was rejected and not included in the Constitution.

*11 56. Although there was disagreement on a number of subjects, one area where the delegates appeared united was on the importance of education to the Commonwealth as a whole. Even before the language “to serve the needs of the Commonwealth” appeared in the Education Clause, it was apparent that at least part of the purpose of education was to prepare children to participate in society as adults. For instance, one delegate during the Convention stated, “This great State of Pennsylvania has taken her position long since, on the high ground that it is the duty of the State, as a matter of justice and self-preservation, that every child in the Commonwealth should be properly educated and trained for

the high and responsible duties of citizenship.” *Id.*, Vol. 2:472. Another delegate stated:

I believed then, as I do now, that the safety of the State and the safety of the government depends upon the education of all the children. If we would preserve republican institutions, if we would preserve our present form of government, it is absolutely necessary that all the children in the Commonwealth and in the United States should be educated.

Id., Vol. 6:64. *See also id.*, Vol. 6:43-44 (“But there are other motives than simple humanity to urge the State to a full measure of her duty in the matter of education. The relation of education and labor is a great economic question now receiving the consideration of the best minds in this country and Europe.”).

57. Delegates believed education was essential to the future of the Commonwealth. For instance, one delegate stated that “[i]f we are all agreed upon any one thing it is, that the perpetuity of free institutions rests, in a large degree, upon the intelligence of the people, and that intelligence is to be secured by education.” *Id.*, Vol. 2:421. Yet another stated, “In the uneducated ballot is found the nation's greatest danger; but the educated ballot is the nation's main tower of strength.” *Id.*, Vol. 6:45.

58. Ultimately, a new education clause was adopted in 1874, which provided: “The General Assembly shall provide for the maintenance and support of a thorough and efficient system of public schools, wherein all the children of this Commonwealth above the age of six years may be educated, and shall appropriate at least one million dollars each year for that purpose.” PA. CONST. OF 1874, art. X, § 1.

59. It was nearly a century later before the Education Clause was reexamined. The Commission on Constitutional Revision, also known as the Woodside Commission, which was created by the General Assembly, was charged with “study[ing] the Constitution ... in the light of contemporary

William Penn School District; Panther Valley School..., Not Reported in Atl....

conditions and the anticipated problems and needs of the people of the Commonwealth.” Act 400 of 1957, § 3, 141st Gen. Assemb., Reg. Sess. (Pa. 1957). The Woodside Commission originally proposed the Education Clause to read “The General Assembly shall provide for the maintenance of support of a thorough and efficient system of public schools, wherein all the children of the Commonwealth may be educated.” Report of the Commission on Constitutional Revision, at 152 (Mar. 1959).

60. A legislative journal indicates that the amendment to the Education Clause would “update[] the constitution by replacing the obsolete requirement that all children of the Commonwealth above the age of six be educated, and at least \$1 million be spent for that purpose.” H.R. Journal, 151st Gen. Assemb., Sess. of 1967, Vol. 1, No. 6 at 80 (Jan. 30, 1967). This is consistent with Professor Black's view that the changes to the Education Clause were to “clean[] up ... historical outdated aspects” of the Education Clause. (Tr. at 935-37.)

61. Project Constitution, which was an initiative of the Pennsylvania Bar Association, proposed adding the “to serve the needs of the Commonwealth” language because “the system of public education should not necessarily be limited to serve the needs of children as the Constitution now provides.” Report of Committee No. 10 on Education, 34 Pa. B. Ass'n Q. 147, 304-05 (Jan. 1963).

*12 62. The change was classified as a Class 3 change, meaning it was a change to the Constitution's language and form but was not “of sufficient importance to be recommended for adoption other than as a part of a general revision of the Constitution.” Report of the Commission on Constitutional Revision, at 18. In contrast, a Class 1 change was “of first importance, critically needed for the efficient conduct of the [s]tate government” and Class 2 changes were “very desirable” but “not vital for the efficient conduct of the [s]tate government.” *Id.* Essentially, the changes were a “drafting change.” (Tr. at 963.) It would have been “illegitimate” to render an “enormous change” to the Constitution without debate. (Tr. at 965-68.)

63. In 1965, the General Assembly passed Joint Resolution 9, which consolidated various articles including the Education Clause into one article related to legislation. Joint Res. No. 9, S.B. 532, 149th Gen. Assemb., Reg. Sess. (Pa. 1965). The changes to the Education Clause were reintroduced, pursuant

to [article XI, section 1 of the Pennsylvania Constitution](#) (setting forth the amendment procedure), in 1967 as Joint Resolution 3, S.B. 4, 151st Gen. Assemb., Reg. Sess. (Pa. 1967), which also passed.

64. The current Education Clause was presented to, and adopted by, the voters of Pennsylvania at the primary election held on May 16, 1967. *See* P.L. 1037, J.R. 3 (May 16, 1967); Laws of Pennsylvania, Session of 1967, Proclamation of the Governor (proclaiming the adoption of the constitutional amendments by the electorate).

65. The current Education Clause provides: “The General Assembly shall provide for the maintenance and support of a thorough and efficient system of public education to serve the needs of the Commonwealth.” PA. CONST. art. III, § 14.

66. A comparison of the 1874 Education Clause to the current [article III, section 14](#) reveals the following changes (additions highlighted, deletions struck through in red): “The General Assembly shall provide for the maintenance and support of a thorough and efficient system of public education schools, wherein all the children of this Commonwealth above the age of six years may be educated, and shall appropriate at least one million dollars each year for that purpose to serve the needs of the Commonwealth.”

C. The System

67. Pennsylvania's system of public education includes 500 school districts,¹⁵ over 160 brick-and-mortar charter schools, 14 cyber charter schools, 29 IUs, 84 career and technical education (CTE) centers, and over 136 CTE programs, which are offered at Pennsylvania high schools, among various other institutions and programs. (Stip. ¶¶ 2-5.) As of 2018, the K-12 education system served more than 1.7 million students. (*See* PX-01830-0013.)

68. In 2020-21, Pennsylvania's school districts operated 2,999 schools, including elementary schools, middle schools, junior/senior high schools, and other schools with different combinations of grade levels. (LR-01635, “LEA and School” Tab.)

69. Based on geographic size, Pennsylvania school districts vary significantly. The largest geographically is Keystone Central School District, which is 970.76 square miles.

William Penn School District; Panther Valley School..., Not Reported in Atl....

(LR-00531, Row 6983.) There are 8 school districts that are larger than 400 square miles. (LR-00531, Rows 6983, 15101, 4904, 13484, 13913, 416, 15266, and 10679.) In contrast, the smallest geographically is Jenkintown School District, which is 0.58 square miles. (LR-00531, Row 6653.) There are 13 school districts that are smaller than 2.5 square miles. (LR-00531, Rows 1538, 1571, 1934, 3023, 4079, 6521, 6587, 6653, 8237, 8765, 9953, 11999, 15893.)

*13 70. Pennsylvania school districts also vary significantly based on enrollment. The largest school district by enrollment is SDP, with approximately 124,111 students in 2020-21. There are 15 school districts with over 10,000 students. The smallest school district by enrollment is Austin Area School District with only 188 students, including a senior class of 15 students. There are 18 school districts with under 500 students. (LR-01635, "LEA" Tab.)

71. In the 2020-21 school year, the 6 Petitioner School Districts educated approximately 1.64% of Pennsylvania public school students compared to SDP, which educated approximately 7.32% of Pennsylvania public school students. (LR-05042.)

72. School districts are governed by local school boards which have authority over the development of policy, governance, and budgets for the operations of their districts. (Tr. at 2451-52.) Local boards also are involved in decisions about textbooks, materials, and curriculum. (Tr. at 4384.)

73. A charter school is a public school operated by a private board with public funding pursuant to a statutory process. *See* Section 1703-A of the Charter School Law, 24 P.S. § 17-1703-A. ¹⁶ There are two types – brick-and-mortar charter schools and cyber charter schools. (Stip. ¶ 3.) A cyber charter school is a public school that “predominantly deliver[s] educational services via ... video conferencing technology[,] based on a learning management system.” (Tr. at 12272-74.) A learning management system is like a “virtual schoolhouse ... where all [of] the video conferencing interchange ... occurs.” (Tr. at 12273-74.)

74. As of 2020-21, Pennsylvania charter schools educated 169,252 students, or approximately 10% of public school students in the Commonwealth. (LR-05038A.) Over the past nine years, charter schools have become an increasingly

popular choice for students and families. Between 2012-13 and 2020-21, the number of K-12 public school students who were being educated in Pennsylvania charter schools increased by approximately 49,787 students, a 41.7% increase; during the same time frame, the overall number of K-12 public school students in Pennsylvania schools decreased by approximately 61,656 students. (LR-05038A.)

75. Pennsylvania has 29 IUs, which provide a variety of services, some of which are provided for a fee, to school districts, charter schools, and private schools, including special education, professional development, and technical assistance services. (Stip. ¶ 4.)

76. Some IUs provide instructional services to schools, most often in the area of special education, either in the school or a space that the IU leases. (Parties' Joint Designations of the 3/11/2020 Deposition of Matthew Stem (Stem Dep.) Vol. 1 at 19.) Some IUs also provide career and technical education to students, who are not charged for such services. (Stem Dep. Vol. 1 at 20.)

77. The Department provides funding to IUs. (Tr. at 2041.)

78. Across the Commonwealth, IUs provide a significant amount of support to school districts concerning the use of curriculum resources. (Tr. at 2073.)

79. In addition, IUs directly educate a small number of students. In 2020-21, IUs educated approximately 10,223 students. (LR-05038A.)

80. Pennsylvania students have opportunities to participate in CTE programs, which are programs of study, approved by the Department, in industry-related fields and aligned to industry-related needs. (Tr. at 2102-03.)

*14 81. In Pennsylvania, CTE programs “offer students the opportunity to develop critical skills through a combination of classes and hands-on learning experiences, which allow them to apply academic concepts to real-world problems.” (Tr. at 2105-06; LR-04191-00001.)

82. Pennsylvania's CTE system is focused on providing young people with skills, knowledge, and habits that they need for success in college and careers: “a strong academic and technical foundation; opportunities to explore and

William Penn School District; Panther Valley School..., Not Reported in Atl....

experience careers; and[] engagement in activities that develop employability skills.” (LR-04216-00003.)

83. CTE programs are offered in both traditional high schools, such as Greater Johnstown and Lancaster, and CTE centers. (Tr. at 2103, 2961-62, 5243-45.) The CTE programs typically include courses that are led by individuals who are qualified in the relevant industry field, as well as academic courses. (Tr. at 2104.)

84. There are comprehensive CTCs, part-time CTCs, and CTE programs that various Pennsylvania high schools offer to students. (Tr. at 2107.)

85. For a student in a CTE program, the CTE program typically ends with a student having the opportunity to obtain an industry credential, and the student's performance in the program is typically measured by a National Occupational Competency Testing Institute (NOCTI) exam or a National Institute for Metalworking Skills (NIMS) exam. (Tr. at 2103, 2111.) NOCTI exams are national assessments. (Tr. at 2113.) These exams are developed with industry partners and have two components – one performance-based and the other one written. (Tr. at 2111.)

86. Across Pennsylvania, there are more than 80 CTE centers that offer Department-approved programs to thousands of students. (Tr. at 2107; LR- 04191.) As of 2018, there were 1,747 state-approved CTE programs, which were being offered to students through 84 CTCs and 140 high schools. (Tr. at 2110; LR-04216-00003.)

87. CTE programs prepare students for both college and career. (Tr. at 2109; LR-04216-00002.) They are available throughout Pennsylvania in most regions of the Commonwealth. (Tr. at 2115; LR-04216-00020.)

88. In Pennsylvania, while overall high school enrollment has decreased, student enrollment in CTE programs has increased. (Tr. at 2110; LR-04216-00003.)

89. As of the 2020-21 school year, CTC schools and CTE programs educated approximately 48,809 students in Pennsylvania. (LR-05038A.) Over the past 9 years, there has been an 8.2% increase in the number of Pennsylvania public school students who are educated through CTC schools. (LR-05038A.)

90. Pennsylvania's system of public education also includes “a network of 604 state-supported public libraries and 29 District Library Centers, which provide resources, technology, and programs that support pre-K through grade 12 students, as well as adult learners, in all 67 counties.” (PX-01830-00014.)

91. The School Code is the basic law that governs public education in Pennsylvania.

1. The Department

92. The Department, formerly named the “Department of Public Instruction,” was created by Section 1 of the Act of July 23, 1969, P.L. 181, No. 74 (Act 74), [71 P.S. § 1037](#).¹⁷

*15 93. The General Assembly has given the Department the power and duty “[t]o administer the laws of [the] Commonwealth with regard to the establishment, maintenance, and conduct of the public schools[.]” [71 P.S. § 352](#).

94. The Secretary is the only cabinet-level official required by the [Constitution, Article IV, sections 1 and 8\(a\) of the Pennsylvania Constitution, PA. CONST. art. IV, §§ 1, 8\(a\)](#).

95. The Department has a depute for elementary and secondary education. (LR-00538A.) Within that depute, the Department has multiple bureaus, divisions, and offices, including the Bureau of School Support, Bureau of Curriculum Assessment and Instruction, Bureau of Special Education, Bureau of Career and Technical Education, the Safe Schools office, the School Services office, and the School Improvement office. (LR-00538A; Tr. at 2050.)

96. The Bureau of Curriculum Assessment and Instruction contains:

- a. The Division of Federal Programs, which oversees all of the federal title funding in the Commonwealth;
- b. The Division of Assessment and Accountability, which oversees the Pennsylvania System of School Assessment (PSSA), Keystone Exam system, and assessment budget; and

William Penn School District; Panther Valley School..., Not Reported in Atl....

- c. The Division of Instructional Quality, which oversees content area, technical assistance, and professional development supports. (Tr. at 2050-51; LR-00538A.)
97. The Bureau of Special Education is composed of:
- a. Three divisions of Monitoring and Improvement (East, West, and Central), which oversee the special education services that are delivered to Pennsylvania students, along with the Commonwealth's implementation of the Individuals with Disabilities Education Act (IDEA), 20 U.S.C. §§ 1400-1490; and
- b. The Division of Analysis and Financial Reporting, which deals with state and federal special education funding. (Tr. at 2051-52; LR-00538A.)
98. The Bureau of School Support is composed of:
- a. The Division of Planning and Professional Development, which oversees things like school district comprehensive plans and continuing professional education for teachers;
- b. The Division of Student Services, which oversees migrant education, 21st century learning, McKinney-Vento funds, which are used to support homeless students, and certain other items that are part of the Department's budget; and
- c. The Division of Charter Schools, which “provides supports to authorizers and to charter schools in their delivery of instruction and in their authorizing responsibilities.” (Tr. at 2046-47, 2052; LR-00538A.)
99. The Bureau of Career and Technical Education deals with the financial and instructional elements that undergird the CTE programs in the Commonwealth. (Tr. at 2052; LR-00538A.)
100. The Safe Schools Office oversees all statutory, regulatory, and policy functions that pertain to safe schools, including safety and security grants and social and emotional learning supports. (Tr. at 2052-53; LR-00538A.)
101. The School Services Office administers a wide variety of statutory and regulatory programs, including the Opportunity Scholarship Tax Credit Program. (Tr. at 2053; LR-00538A.)
102. The School Improvement Office oversees many of the Department's programs that concern meaningful differentiation for the Comprehensive Support and Improvement (CSI), Additional Targeted Support and Improvement (ATSI), and Targeted Support and Improvement (TSI) schools. (Tr. at 2053; LR-00538A.)
- *16 103. Matthew Stem, former Deputy Secretary of Elementary and Secondary Education, testified “[t]he notion that every child can learn was a fundamental belief of the [D]epartment and drove [its] policy development and technical support and the way [it] operationalized [its] systems as a foundational belief.” (Tr. at 1760.)
104. The Department provides a variety of resources to local school districts. For instance, the Department established and administers the Standards Aligned System (SAS),¹⁸ which is a portal of educational resources that are designed to help schools. (Tr. at 2054-55.)
105. As stated on the portal website, SAS “is a comprehensive research-based resource[,]” for Pennsylvania schools and educators. SAS focuses on six elements: standards, assessment, curriculum framework, instruction, materials and resources, and safe and supportive schools. The Department describes SAS as “a state-of-the-art portal.” (LR-04208.) There is no charge for school districts to use SAS. (Tr. at 2090.)
106. Aside from the SAS portal, the Department has created the Pennsylvania Evidence Resource Center. This center is a “repository of evidence-based strategies that can be implemented [in] schools,” with the information broken down based on categories from the Future Ready PA Index.¹⁹ The Pennsylvania Evidence Resource Center can be accessed by anyone. (Tr. at 1892-93.)
107. In addition, Pennsylvania school districts are required to develop comprehensive plans that are aligned with practices of continuous improvement and improved educational practices. Comprehensive plans set forth a school district's current practices, which challenges the school district faces,

William Penn School District; Panther Valley School..., Not Reported in Atl....

and the school district's plan to address those challenges. The Department leads this comprehensive planning program and provides resources to school districts to assist them in the comprehensive planning process. (Tr. at 2094-97.)

108. The Department operates Community Education Councils, which, in partnership with postsecondary educational institutions, "provide ... postsecondary educational opportunities in places where those institutions are not otherwise generally present." (Tr. at 8787.)

109. Pennsylvania school districts are not required by state law to provide pre-K education, but a school district may opt to do so. (Tr. at 4485.)

110. The Pre-K Counts program is the largest of the Commonwealth's state-funded pre-K programs. (Tr. at 4501.) Through Pre-K Counts, three- and four-year-old children start learning basic academic skills (reading and writing) and start to learn socially through a focus on social-emotional learning and engaging families in child development. (Stem Dep. Vol. 1 at 22.) Pre-K Counts programs are provided by school districts, private academic nursery schools licensed by the Department, Head Start grantees, care centers, and groups that are designated as high-quality settings on the Keystone STARS evaluation. (Parties' Joint Designations of the 7/2/20 Deposition of Tracey Campanini (Campanini Dep.) at 28.)

*17 111. The Pre-K Counts program is available to families with an income of less than 300% of the federal poverty line, which encompasses about 60% of Pennsylvania's population. (Tr. at 4500.) Combined, during the 2019-20 school year, Pennsylvania's 5 state-funded pre-K programs enrolled about 22% of 4-year-olds and 11% of 3-year-olds in the Commonwealth. (Tr. at 4501.) As of December 2021, more than 29,000 children participated in the Pre-K Counts program, which was an increase of 4,000 children since July 2020. (Tr. at 4952.)

112. Tracey Campanini, Deputy Secretary at the Office of Child Development and Early Learning (OCDEL), which is a joint deputate of the Department and the Department of Human Services (DHS) that monitors and oversees early childhood education in the Commonwealth, explained that all Pre-K Counts and Head Start grantees in Pennsylvania are required to use OCDEL's early childhood education

standards. (Tr. at 4913-14, 4729-31.) The standards are rigorous and reflect five goals:

one, engage in activities that include measuring, representing, organizing, and understanding data; two, persist in activities that include measuring, representing, organizing, and understanding data; three, problem solve in activities that include measuring, representing, organizing, and understanding data; four, when prompted, communicate thinking while engaged in activities that include measuring, representing, organizing, and understanding data; and fifth and finally, talk and listen to peers during activities that include measuring, representing, organizing, and understanding data[.]

(Tr. at 4922-23; PX-02195-0039.) School districts that implement Pre-K Counts or Head Start must align their curricula to these standards. (Tr. at 4784.)

113. The Pre-K Counts program also requires teachers to have a four-year degree in specialized training and early childhood development. (Tr. at 4553.) By contrast, the federally funded Head Start program only requires that half of the teachers have a four-year college degree. (Tr. at 4553-54.)

114. In 2014-15, Pennsylvania funded 18,205 total pre-K student slots in both its Pre-K Counts and Head Start programs. In 2020-21, Pennsylvania funded 31,593 total slots in both of these programs. This represents a 73.54% increase in the number of total Pre-K Counts and Head Start student slots funded by Pennsylvania over this 7-year period. (LR-05046A.)

115. OCDEL uses the Keystone STARS program to assess the quality of a pre-K program in Pennsylvania. The Keystone STARS program designates pre-K programs with a certain STAR number. A STAR 1 program is reserved primarily for licensed childcare providers. A STAR 2 program has

William Penn School District; Panther Valley School..., Not Reported in Atl....

met certain requirements regarding community and family partnerships; and has committed to certain qualifications and staff development. (Tr. at 4930-35.)

116. Programs designated as STAR 3 and STAR 4 that are in good standing with applicable performance standards and are licensed through the Department are considered “high quality” programs. (Campanini Dep. at 115-16.)

117. When determining that there is an unmet need for pre-K slots in Pennsylvania, OCDEL only considers programs designated as “high quality” and omits from the calculation STAR 1 and STAR 2 programs. (Tr. at 4768-69.)

118. STAR 1 and STAR 2 programs, however, must still meet certain requirements for class size, staff qualifications, community partnerships, and other criteria. (Tr. at 4933-35.) For example, STAR 2 programs require “[a]ll on-site program leadership team members and teaching staff to complete Professional Development Plans ... in the [Professional Development] Registry to support educational achievement and professional growth.” (Tr. at 4947; LR-03076-00009.) Additionally, every Pre-K Counts and Head Start Supplemental Assistance program (Head Start Supplemental Assistance) has a 10:1 student-to-teacher ratio and a maximum of 20 students per class, and most pre-K slots are full-day. (Tr. at 4957.)

*18 119. OCDEL also uses a broad definition of “at risk” children to determine the number of eligible children. OCDEL considers children living at up to 300% of the federal poverty guidelines as “at risk” and uses that figure to calculate unmet need. (Tr. at 4905-06, 5017-18.) A family of four living at 300% of the federal poverty guidelines would earn approximately \$76,000 per year. (Tr. at 4949-50.)

120. “Head Start has been [a] major federally-funded preschool program for children in poverty for the past [50 years].” (Tr. at 4679.) As of December 2021, approximately 26,000 Pennsylvania children were enrolled in the Head Start program. (Tr. at 4954.)

121. The cost of Head Start is currently more than \$10,000 per child annually. (Tr. at 4679.)

122. Head Start Supplemental Assistance provides state funds to supplement federal Head Start services. (Tr. at 4795-96.) As

of December 2021, about 8,200 children participated in Head Start Supplemental Assistance. (Tr. at 4953.) Pennsylvania's budget for Head Start Supplemental Assistance increased from approximately \$49 million in the 2016-17 school year to \$69 million by the time of trial. (Tr. at 5000.)

2. The State Board

123. The State Board is an administrative board that, under Section 202 of The Administrative Code of 1929, 71 P.S. § 62, is housed within the Department. The General Assembly delegated the State Board the powers and duties as set forth in Article XXVI-B of the School Code. *See* Sections 2601-B–2606-B of the School Code, 24 P.S. §§ 26-2601-B–26-2606-B.²⁰ (*See also* Tr. at 4172.)

124. The State Board is charged by the General Assembly to “adopt broad policies and principles[] and establish standards governing the educational program of the Commonwealth.” 24 P.S. § 26-2603-B.

125. The State Board is comprised of 21 members – 4 are the majority and minority chairs of the House and Senate education committees and the other 17 are nominated by the Governor and confirmed by the Senate. 24 P.S. § 26-2602-B(a)-(b). (*See also* Tr. at 4173-74.) The members of the State Board are volunteers in that capacity. (Tr. at 4308-09.)

126. The Secretary serves as chief executive officer of the State Board and can speak on any matters before the State Board but cannot vote. 24 P.S. § 26-2602-B(g). (*See also* Tr. at 4184-85.)

127. By statute, the State Board is organized into the Council of Basic Education and Council of Higher Education, each comprised of 10 members. 24 P.S. § 26-2602-B.

128. The State Board meets at least six times per year. (LR-02237-00001.)

129. The State Board has two full-time employees: an executive director and an administrative assistant. The State Board also has counsel, who is provided through the Governor's Office of General Counsel. (Tr. at 4309.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

130. The State Board sets standards for teacher certification promulgated through regulations at Chapter 49. (Tr. at 4176.)

131. The State Board also promulgated state assessment requirements in its Chapter 4 regulations, which are discussed more fully below. (Tr. at 4181.)

a. Master Plan

132. The State Board is also responsible for developing a master plan for basic education and a master plan for higher education, the purpose of which is to provide guidance to the Governor and General Assembly, as well as to institutions that are funded by state appropriations. 24 P.S. § 26-2603-B. (See also Tr. at 4183-84, 4256, 4297-98.)

*19 133. In 2018, the State Board released its current Master Plan for Basic Education. While the Master Plan for Basic Education includes recommendations, it does not create any requirements. In fact, the State Board does not believe that anyone is required to respond to the Master Plan for Basic Education, and it does not “directly engage in follow-up” regarding that plan. While the State Board regularly receives reports from the Department, those reports do not address the helpfulness or usefulness of the policy recommendations that the State Board has made in its Master Plan for Basic Education. (Tr. at 4299-4300.)

134. Before the current Master Plan for Basic Education, the State Board does not know when it last prepared a Master Plan for Basic Education, although Karen Molchanow, the Board's Executive Director, was able to find one from the late 1990s. (Tr. at 4301.) Executive Director Molchanow did not know why there was a gap between the State Board's preparations of its Master Plans for Basic Education. (Tr. at 4301.) As of 2017, the State Board is required to prepare a Master Plan for Basic Education every 10 years. Previously, it was required to prepare one every five years. (Tr. at 4415-16; PX-00035.)

135. The State Board engaged an individual through the Capital Area IU to take the lead in preparing the Master Plan for Basic Education. (Tr. at 4266-67, 4298-99.)

136. The Master Plan for Basic Education recognizes that educational programs are not static, and that technology is an

essential part of learning in today's 21st century environment. (Tr. at 4358-59.)

137. The Master Plan for Basic Education states that “modern teaching relies on modern technology.” (PX-00035-0012.) Cognizant of “differences in infrastructure and capabilities in school districts across the state” that “will lead to opportunity gaps for some students that will have lasting ramifications for the individuals and their communities,” the State Board has urged the Department to “monitor unequal investments in technology and infrastructure that could widen the college career readiness gap for some students.” (PX-00035-0012.)

138. The Master Plan for Basic Education also identifies the importance of high-quality pre-K programs, of ensuring that students are taught by highly qualified certified teachers, and of ensuring that schools use quality curricular materials, such as advanced technology, to improve student outcomes. (PX-00035-0006, 0008-0009, 0011-0012.)

139. According to the Master Plan for Basic Education, all students must be provided with the opportunity to achieve college, career, and civic success. (Tr. at 4259.)

140. In the Master Plan's recommendations on school finance, the State Board agreed that “[t]he combination of local, state, and federal funding must provide adequate support for the updated and improved school programs that enable every student to meet our rigorous expectations. State policy cannot disregard the importance of capacity to ensure successful implementation of its goals.” (PX-00035-0009.)

141. In the Master Plan for Basic Education, the State Board asserts that education funding must be expertly and efficiently managed at both the state and local levels. The State Board recommends that the General Assembly consider the adequacy of school funding, although it does not identify a specific amount of funding that would be necessary to achieve adequacy. The State Board, likewise, does not assert that Pennsylvania schools are under-funded. (Tr. at 4266, 4419-22; PX-00035-0009.)

142. The State Board does not conduct any cost-effectiveness analysis to accompany its Master Plan for Basic Education. (Tr. at 4298.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

*20 143. The Master Plan for Basic Education has a narrow scope. In developing the plan, the State Board is to consider and make recommendations on 10 areas as set forth in 24 P.S. § 26-2603-B(i), or any other areas the State Board deems appropriate.²¹ In the plan, the State Board does not attempt to balance education with any of the Commonwealth government's many other responsibilities. (Tr. at 4306-07.)

144. The State Board engages in a constant review and appraisal of education in the Commonwealth. The State Board's evaluation takes into account such matters as educational objectives, alternative organizational patterns, alternative programs of study, and the operating efficiency of the education system. (Tr. at 4413, 4416; LR-02237-00002.)

b. Academic Standards

145. The General Assembly has delegated authority for defining and adopting the academic standards of the Commonwealth to the State Board. 24 P.S. § 26-2603-B(a); 22 Pa. Code § 4.1.

146. The State Board engaged the Department to support the development of the academic standards and bring those standards through the regulatory process. (Tr. at 1599-1600.)

147. The School Code addresses cooperation between the Department and the State Board, providing:

Statements of policy, standards, rules and regulations promulgated by the [B]oard shall be binding upon the Department The [D]epartment shall submit to the [B]oard for approval, modification or rejection, all rules and regulations proposed by the [D]epartment in the areas under the control of the [B]oard. The Department ... shall furnish upon request of the [B]oard such data and information as the [B]oard may, from time to time, require, and the [D]epartment shall provide administrative services for and on

behalf of the [B]oard for the implementation of the [B]oard's statements of policy, standards, rules and regulations.

24 P.S. § 26-2606-B.

148. By regulation, the State Board defines “the purpose of public education and its relationship with the academic standards.” 22 Pa. Code § 4.11(a).²²

149. According to the State Board's regulations, the purpose of public education is to prepare students “for adult life by attending to their intellectual and developmental needs and challenging them to achieve at their highest level possible.” 22 Pa. Code § 4.11(b). Furthermore, “[i]n conjunction with families and other community institutions, public education prepares students to become self-directed, life-long learners and responsible, involved citizens.” *Id.*

150. The State Board has further determined that public education “provides opportunities for students to: (1) [a]cquire knowledge and skills[;] (2) [d]evelop integrity[;] (3) [p]rocess information[;] (4) [t]hink critically[;] (5) [w]ork independently[;] (6) [c]ollaborate with others[;] and (7) [a]dapt to change.” 22 Pa. Code § 4.11(c).

*21 151. The State Board's regulations and the academic standards contained therein “describe the knowledge and skills that students will be expected to demonstrate before graduating from a public school.” 22 Pa. Code § 4.11(d). The regulations provide that “[i]t is the policy of the Board that the local curriculum be designed by school entities to achieve the academic standards under [22 Pa. Code] § 4.12 (relating to academic standards) and any additional academic standards as determined by the school entity.” 22 Pa. Code § 4.4(a). In addition, “[i]t is the policy of the Board that local school entities have the greatest possible flexibility in curriculum planning consistent with providing quality education and in compliance with the School Code.” 22 Pa. Code § 4.4(b).

152. Although the regulations require school districts to align their curricula and instruction to the academic standards, they have autonomy in developing the curricula and the sequencing of their instruction. (Tr. at 2057-08, 4212.) The

William Penn School District; Panther Valley School..., Not Reported in Atl....

Department provides districts with resources to help them align their curricula to the academic standards. (Tr. at 2058; LR-04208.)

153. Between 2010 and 2014, the Board adopted new academic standards in certain subjects, often referred to as Pennsylvania Common Core Standards (Pennsylvania Core Standards). While related to the national Common Core, the Pennsylvania Core Standards are specific to the Commonwealth and its needs. (Tr. at 4190-91.) The 2014 Pennsylvania Core Standards were more rigorous than previous standards. (Tr. at 4316.)

154. There are 12 academic standards adopted by the State Board through regulation covering content such as science and technology; environment and ecology; social studies, including history, geography, civics and government, and economics; arts and humanities; career education and work; health, safety, and physical education; family and consumer science; English language arts (ELA); and mathematics. *See* 22 Pa. Code §§ 4.11(g); 4.12(a).²³ (*See also* Tr. at 4175-76; PX-00036-0001; PX-02189 through PX-02207.)

155. The academic standards are adopted after a rigorous two-year long process, where the State Board and the Department sought and received feedback from the public, educators, and the General Assembly. (Tr. at 4189; Petition for Review (Pet. for Rev.) ¶¶ 102-103; PX-03144 ¶¶ 102-103 (State Board's Answer and New Matter); PX-03145 ¶¶ 102-103 (Executive Respondents' Answer and New Matter).)

156. The process begins with the Department drafting standards with the assistance of “teams of content experts,” which are presented to the State Board for consideration. (Tr. at 4186-87.) Draft standards are then presented to stakeholders throughout the state for their comments. (Tr. at 4187.) Once adopted by the State Board as proposed rulemaking, the regulations are published for public comment, providing another opportunity for public input. (Tr. at 4187-88.)

*22 157. Following the regulatory review process and development of final proposed regulations, the state academic standards are reviewed by the Independent Regulatory Review Commission (IRRC), as well as the House and

Senate Education Committees before they are adopted as final regulations and become part of the School Code. (Tr. at 4188.)

158. “[T]he state academic standards are responsive to what [the State Board has] set as priorities for students to know and be able to demonstrate by the end of the grade level[.]” (Tr. at 4189.) They are uniform, rigorous, and achievable and are designed to prepare students to be “college- and career-ready” upon graduation. (Tr. at 1603-04, 1609-10, 1611-14.)

159. The State Board's regulations in chapter 4 set forth an expectation that the State Board “will conduct periodic reviews of academic standards,” the purpose of which “is to ensure that [the standards] continue to meet the academic needs of our students and to ensure that [the standards] continue to put students in a position where they will be ready to enter the workforce and post[]secondary education and support the economic needs of the Commonwealth.” (Tr. at 4192-93.) *See* 22 Pa. Code § 4.12(i) (requiring the State Board to review academic standards “[n]o sooner than every 5 years and no later than every 10 years ... to determine if they are appropriate, clear, specific and challenging, and will make revisions as necessary”).

160. In addition to having four members of the General Assembly sit on the State Board, as part of the regulatory review process, any amendment to the State Board's regulations is submitted to the education committees of both legislative chambers for comment on proposed rulemaking, which may approve or disapprove the final rulemaking. (Tr. at 4193-94.)

161. The Pennsylvania Core Standards, adopted following the course of normal review, “ensure[d] that there was a voice for Pennsylvania stakeholders in the mathematics and [ELA] standards,” that the “standards reflect[] 21[st] Century skills to prepare students in the Commonwealth to meet the rigor expected of post[]secondary education and [the] workforce,” and that they were supported also by leaders from business who felt students would benefit by being challenged “in critical thinking, complex problem-solving, effective communication, ... applying math in real world settings and having focus on informational text as well as fiction text.” (Tr. at 4196-97, 4314-16.)

162. During this process, the Pennsylvania House of Representatives unanimously “urged” the Secretary and

William Penn School District; Panther Valley School..., Not Reported in Atl....

the State Board “to ensure that Pennsylvania's academic standards are thoroughly rigorous [and effective] for all Pennsylvania students[.]” H. Res. 338, PN-2084 (2013). (*See also* Tr. at 4204-05.)

163. The new academic standards focused on workforce needs of the Commonwealth to ensure that the Commonwealth maintains its economic competitiveness by preparing students to be college and career ready. (Tr. at 4197-98, 4202-03.)

164. By using the terms “college and career ready,” the standards are designed to prepare graduates to succeed in “colleges and universities across the Commonwealth, as well as programs that are focused on career and technical education at the postsecondary or adult education level that results in industry certifications.” (Tr. at 4201.) Moreover, the standards are “in alignment with [the] identified workforce needs” of Pennsylvania industries. (Tr. at 4315.)

*23 165. When asked by Petitioners’ counsel if Pennsylvania's standards are “high-quality academic expectations of what every student should know and be able to do” that are rigorous and achievable by students across the state, former Deputy Secretary Stem responded yes. (Tr. at 1608-09.) They “are robust and relevant to the real world and reflect the knowledge and skills our young people need to succeed in life after high school, in both postsecondary education and a globally competitive workforce.” (PX-03145-0051 ¶ 18 (Executive Respondents’ Answer and New Matter); *see also* Tr. at 1603-04, 1609-12, 4197-99, 4206-07.)

166. The State Board and Department believe that the Pennsylvania Core Standards are rigorous and have not taken a position that they should be less rigorous. (Tr. at 1612-13, 4205.) The State Board believes that academic standards should be rigorous to meet the needs of the Commonwealth in supporting workforce and economic competitiveness, as well as preparing students for entry into communities post-graduation. (Tr. at 4206-07, 4317-18.) In its Master Plan for Basic Education, the State Board emphasizes the impact of “21st century technology” and “rapid innovation” requiring Pennsylvania graduates to succeed in a “globally competitive environment” and able “to adapt to future changes in the workplace” as well as being “knowledgeable and informed,”

and “able to analyze incomplete information and judge differing opinions in order to make the informed decisions necessary in a democracy.” (PX-00035-0003.)

167. The academic standards that have been set for kindergarten through 5th grade “provide students with a foundation to engage in learning progressions to prepare them for that more rigorous work in the upper grade levels.” (Tr. at 4208-09.)

168. Technology is included in the academic standards because it is “integrated into so many aspects of daily life, as well as the way that people interact in multiple fields in the workforce[.]” (Tr. at 4210-11.)

169. The skills reflected in the ELA academic standards for 11th and 12th graders “relate to students’ ability to engage in critical thinking and complex problem-solving by citing evidence to support their arguments.” (Tr. at 4211-12; PX-02201-0060.)

D. Types of Assessments

1. State Assessment System

170. For decades, the General Assembly has required the State Board to

develop or cause to be developed an evaluation procedure designed to measure objectively the adequacy and efficiency of the educational programs offered by the public schools of the Commonwealth. The evaluation procedure to be developed shall include tests measuring the achievements and performance of students pursuing all of the various subjects and courses comprising the curricula.

William Penn School District; Panther Valley School..., Not Reported in Atl....

Section 290.1 of the School Code, 24 P.S. § 2-290.1.²⁴ (See also PX-01719 (describing the history of Pennsylvania's state assessments).)

171. The State Board's regulations require the Commonwealth to measure whether a student is achieving proficiency on the state's academic standards through the use of standardized tests in the State Assessment system. 22 Pa. Code § 4.51(a)(1)-(2). (See also Tr. at 1614-15.)

172. The two state assessment methods currently required by the State Board's regulations are the PSSA and the Keystone Exams. 22 Pa. Code § 4.51(b).

173. The regulations duly promulgated by the State Board require that the PSSA exams be “standards-based and criterion referenced” assessments, which cover the areas of “[ELA], Mathematics, and Science and Technology and Environment and Ecology.” 22 Pa. Code § 4.51a(a). As former Deputy Secretary Stem explained:

*24 Criterion-referenced tests are those that are scored relative to a set of knowledge or a set of standards or a set of competencies. ... So it's not a normed test where you would take all of the scores and move them across a curve. It's a test that is simply measuring whether or not whoever's taking that test has demonstrated the skills required that the test is testing. So in a criterion-referenced test, you could have ... high percentages of students that are below basic or you could have very high percentages that are advanced as well.

(Tr. at 1654-55.) Executive Director Molchanow also testified the exams are “criterion-referenced, which should be designed so that each and every student has the ability to achieve the highest performance level expected because they are aligned to a concrete standard.” (Tr. at 4372.)

174. The PSSA in ELA and mathematics is administered to students in grades 3 through 8 and science is administered for students in grades 4 and 8. (Tr. at 4217.)

175. The Keystone Exams are end-of-course tests given in the grade level in which students completed the relevant coursework. See generally 22 Pa. Code § 4.51b.

176. Other than a small number of students with severe cognitive disabilities who take the Pennsylvania Alternate System of Assessment, the majority of special education students take the PSSA and Keystone Exams. (Tr. at 4352-53.)

177. English Language Learner (ELL) students also take the PSSA and Keystone Exams when they are in the appropriate grade or enrolled in the appropriate course. (Tr. at 2214-16.)

178. In 2003-04, Pennsylvania administered the PSSA ELA and math exam in grades 3, 5, 8, and 11. During that year, PSSA exams in the topic of writing were administered at grades 6, 9, and 11. (LR-04217-00014–00015.) PSSA exams in science were added in the 2007-08 school year. (LR-04217-00016–00017.) In 2013, the 11th grade PSSA exams were removed in favor of the Keystone Exam, which was then administered at that grade level. (LR-04217-00012.) Starting in the 2014-15 school year, the PSSA exams administered to students were aligned to the new Pennsylvania Core Standards. (LR-04217-00023–00024.) In 2017-18, the PSSA exams were reevaluated and reduced in length in an effort to reduce the amount of time spent on testing. (LR-04217-00012.)

179. To date, the Keystone Exams in algebra I, biology, and literature are administered at the high school level. (Tr. at 4217.) The General Assembly specifically requires the State Board to develop Keystone Exams in those subjects. See Section 121 of the School Code, 24 P.S. § 1-121.²⁵ (See also Tr. at 4219.)

180. The State Assessment system is designed to serve the following six purposes:

- a. “Provide students, parents, educators and citizens with an understanding of students and school performance. . . . [.]” 22 Pa. Code § 4.51(a)(1).

- b. “Determine the degree to which school programs enable students to attain proficiency of academic standards under § 4.12... [.]” 22 Pa. Code § 4.51(a)(2).
- c. “Provide information to State policymakers, including the General Assembly and the Board, on how effective schools are in promoting and demonstrating student proficiency of academic standards.” 22 Pa. Code § 4.51(a)(3).
- d. “Provide information to the general public on school performance.” 22 Pa. Code § 4.51(a)(4).
- e. “Provide results to school entities based upon the aggregate performance of all students. . . [.]” 22 Pa. Code § 4.51(a)(5).
- f. “Assess student proficiency in the Academic Standards for [ELA] ... , Mathematics ... , Science and Technology and Environment and Ecology ... and Civics and Government ... for the purpose of determining, in part, a student's eligibility for high school graduation.” 22 Pa. Code § 4.51(a)(6).

*25 181. The State Board is responsible for the assessment system but delegates responsibilities for test creation and scoring to the Department, subject to final approval of the State Board. (Tr. at 4215, 4221-22, 4296-97.) The State Board's regulations require the Department to “develop or cause to be developed PSSA assessments based on Pennsylvania Core Standards in Mathematics and [ELA] ... and academic standards in Science and Technology and Environment and Ecology under § 4.12 and contained in” the corresponding appendices. 22 Pa. Code § 4.51a(b). Throughout this development process, the Department must “consult with educators, students, parents and citizens regarding the specific methods of assessment.” *Id.*

182. As part of the overarching goal of measuring proficiency, the Department recommended and the State Board approved “specific criteria for” scoring “advanced, proficient, basic, and below basic levels” on the exams. 22 Pa. Code § 4.51a(a)(4). These are also referred to as performance level descriptors.

183. A score at “[t]he Advanced Level reflects superior academic performance, and work at this level demonstrates

a thorough command of, and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates advanced academic preparation for engaging successfully in further studies in this content area.” (PX-02067-0192.)

184. A score at “[t]he Proficient Level reflects satisfactory academic performance, and work at this level demonstrates an adequate command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates academic preparation for engaging successfully in further studies in this content area.” (PX-02067-0192.)

185. A Basic Level score “reflects marginal academic performance, and work at this level demonstrates a partial command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates additional academic support may be needed for engaging successfully in further studies in this content area.” (PX-02067-0192.)

186. Finally, a Below Basic Level score shows “inadequate academic performance, and work at this level demonstrates a minimal command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards. Consistent performance at this level indicates extensive additional academic support may be needed for engaging successfully in further studies in this content area.” (PX-02067-0192.)

187. According to former Deputy Secretary Stem, students scoring well on the PSSAs in their early years are exhibiting early indicators that they will be successful in school. (Tr. at 1700-01.) A student who scores proficient on the Keystone Exams has generally demonstrated he or she is college and career ready in those subjects, with a better chance at professional success. (Tr. at 1670-71.) Basic or below basic is a true indication that a student is falling behind. (Tr. at 1659-61.)

188. The Department engages in an intensive and rigorous development process to ensure the validity and reliability of the PSSA exams in accordance with the law. This process is documented annually in technical reports, which are made publicly available. (Tr. at 1648. *See, e.g.*, PX-02067.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

189. The State Board's regulations require the performance on the PSSA assessments be determined based on the following criteria:

a. "Performance on PSSA [ELA] assessments shall be demonstrated by students' responses to comprehension questions about age-appropriate reading passages, by their written responses to in-depth comprehension questions about the passages and by the quality of their written compositions on a variety of topics and modes of writing." 22 Pa. Code § 4.51a(a)(1).

*26 b. "Performance on PSSA mathematics assessments shall be demonstrated by students' responses to questions about grade-appropriate content and by the quality of their responses to questions that require a written solution to a problem." 22 Pa. Code § 4.51a(a)(2).

c. "Performance on PSSA science assessments shall be demonstrated by students' responses to grade appropriate content and by the quality of their responses to questions that demonstrate knowledge of each category of the standards for science, environment, ecology, technology and engineering." 22 Pa. Code § 4.51a(a)(3).²⁶

190. To ensure that questions, or "items," on the PSSA exams measure students' performance according to the criteria required by law, the PSSA exams are subject to a 15-step development cycle, which occurs over the course of each year. (PX-02067-0046 at Figure 3-1.)

191. This development cycle generally includes developing new items, reviewing them for bias, fairness, and sensitivity at multiple levels; field testing those items; reviewing the data from field test results; and modifying items throughout the cycle to ensure alignment with the scope and criteria of the PSSA. (PX-02067-0047 at Figure 3-2.)

192. This cycle begins with the development of items that specifically measure academic standards:

As part of the item construction process, each item was reviewed by content specialists and editors at

[the Data Recognition Corporation (DRC)].²⁷ Content specialists and editors evaluated each item to make sure that it measured the intended Eligible Content and/or Assessment Anchor Content Standard. They also assessed each item to make certain that it was appropriate for the intended grade and that it provided and cued only one correct answer (M[multiple] C[hoice] items only)....

(PX-02067-0049.) "Following this internal process, items were reviewed by content specialists at the [] Department. ..." (*Id.*)

193. The PSSA Technical Guide explains the Eligible Content and Assessment Anchors as follows:

The PSSA Assessment Anchor Content Standards and Eligible Content are based on the Pennsylvania Core Standards in [ELA] and mathematics and the Pennsylvania Academic Standards in science. Although the Academic Standards indicated what students should know and be able to do, educator concerns regarding the number and breadth of Academic Standards led to an initiative by the ... Department ... to develop Assessment Anchor Content Standards (Assessment Anchors) to indicate which parts of the Academic Standards (Instructional Standards) would be assessed on the PSSA. Based on recommendations from Pennsylvania educators, the Assessment Anchors were designed as a tool to improve the articulation of curricular, instructional, and assessment practices.

*27

The Assessment Anchors clarify what is expected across each grade span and focus the content of the standards into what is assessable on a large-scale test. The Assessment Anchor documents also serve to communicate Eligible Content, also called assessment limits, or the range of knowledge and skills from which the PSSA would be designed.

(PX-02067-0033.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

194. The items are then reviewed by a “content committee,” which “consist[s] of Pennsylvania educators from school districts through the Commonwealth ... , some with postsecondary university affiliations.” (PX-02067-0050.)

195. At this stage of review, “[t]he primary responsibility of the content committee was to evaluate items with regard to quality and content classification, including grade-level appropriateness, estimated difficulty, depth of knowledge, and source of challenge.” (PX-02067-0050.)

196. Subsequent to the content committee process and prior to field testing, “all newly developed test items for [ELA], mathematics, and science were also submitted to a Bias, Fairness, and Sensitivity Committee for review[,]” which evaluates each item to identify concerns “related to ageism, disability, ethnicity, culture, gender, region, religion, socioeconomic status, or stereotyping.” (PX-02067-0051.)

197. Items are then field tested through placement on the current year's PSSA exam in order to “compute and obtain statistics to (a) review items prior to operational use and to (b) obtain item parameters for pre-equating purposes.” (PX-02067-0058.) Performance on field-tested items do not count towards a student's score for that year's PSSA exam. (Tr. at 2185-86.)

198. After field testing is complete, the data received and the items themselves are subject to further review with the expectation that

[i]n general, more capable students are expected to respond correctly to easy items and less capable students are expected to respond incorrectly to difficult items. If either of these situations does not occur, the item will be reviewed by DRC test development staff and committees of Pennsylvania educators to determine the nature of the problem and the characteristics of the students affected. ...

(PX-02067-0058.) If an item is determined to need further review for this reason, it is said to be “flagged.” (Tr. at 2186-87.)

199. The 2019 PSSA Technical Report details the review process for “flagged” items as follows:

Items not identified for this review were those that had good statistical characteristics and, consequently, were regarded as statistically acceptable. Likewise, items of extremely poor statistical quality were regarded as unacceptable and needed no further review. However, there were some items – relatively few in number – that DRC content-area test development specialists and DRC psychometric specialists regarded as needing further review by a committee of Pennsylvania educators. The intent was to capture all items that needed a closer look; thus, the criteria employed tended to over-identify rather than under-identify items.

*28 The review of the items with data was conducted by over 50 Pennsylvania educators (teachers and PDE staff) broken out into subject-area and/or grade level or span committees. The review for mathematics Grades 3-8 took place between July 24-26, 2018. The review for ELA Grades 3-8 took place July 24-25, 2018. The review for science took place on July 24, 2018. In these sessions, committee members were first trained by a representative from DRC's psychometrics staff with regard to the statistical indices used in item evaluation. This was followed by a discussion with examples concerning reasons that an item might be retained regardless of the statistics. The committee review process involved a brief exploration of possible reasons for the statistical profile of an item (e.g., possible bias, grade appropriateness, instructional issues) and a decision regarding acceptance. DRC content-area test development specialists facilitated the review of the items. Each committee reviewed the pool of field tested items and made recommendations on each item and/or scenario/passage. ...

(PX-02067-0059.)

200. As former Deputy Secretary Stem explained, items that are flagged for review are not removed “just because too many students got a question right or wrong.” (Tr. at 2195-96.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

201. The State Board's regulations require the Department to “develop and recommend to the [State] Board for its approval specific criteria for advanced, proficient, basic[,] and below basic levels of performance.” 22 Pa. Code § 4.51a(a)(4).

202. The process for establishing the score cut-off levels or “cut scores,” for the PSSA exams is known as “bookmarking.” (Tr. at 1654.) Educators and members of the technical advisory committee “draw the lines” of what scores must be attained to be considered advanced, proficient, basic, and below basic, as required by law. (Tr. at 1654, 4336-37.) See also 22 Pa. Code § 4.51a(a)(4). The bookmarking process is the same process that is used in establishing cut scores for the National Assessment of Educational Progress (NAEP). (Tr. at 4326.)

203. It is shorthanded as “bookmarking” because it involves teams of experts placing “bookmarks” at points between different score levels. Experts make

a ranking of questions from least rigorous to most rigorous. And then as the teams of teachers go through, they put bookmarks in, essentially, the places where the content seems to cross from one — from one level to the next, so as an educator, what I would say “below basic” that inadequate knowledge looks like versus, okay, when you get to this point this looks like the type of basic level of knowledge around this particular eligible content around this standard. It's done in groups. And then others come together; they compare their bookmarks. They then discuss them because they don't always line up, until they come to a place where there's general consensus around where those — where those lines are drawn. ...

(Tr. at 1666-67.)

204. Former Deputy Secretary Stem explained the process is validated by the Department's Technical Advisory Council Committee and the “Center for Assessment,” which is “a nationally recognized assessment organization.” He further explained they “are national assessment leaders that inform and ensure someone outside of Pennsylvania, something that ... doesn't have skin in the game can speak to the integrity of the process, which is really important for our [S]ecretary and for myself and the team.” (Stem Dep. Vol. 1 at 223-24; see also Tr. at 1669.)

205. Former Deputy Secretary Stem testified the cut scores measure “what students should know and be able to do based on the standards, the performance level descriptors, and the eligible content” and are “not designed to generate a bell curve.” (Tr. at 2201-03.)

206. The performance descriptors and cut scores adopted by the State Board were aligned to the standards. (Tr. at 4316.)

207. After adopting new Pennsylvania Core Standards in 2014, the State Board adopted new cut scores demarcating the lines between levels of proficiency. (Tr. at 4316-17.)

208. The performance descriptors and cut scores would have been written to match the rigor of the new standards and would be reflective of aligned assessments. (Tr. at 4316-17.) The new cut scores and performance descriptors themselves are not more rigorous but are aligned to the more rigorous new standards. (Tr. at 4317.)

*29 209. The State Board approved the performance level descriptors because it believes that they accurately describe each performance level. (Tr. at 4223-24.)

210. The State Board approved the cut scores because it believes that they are accurate and reliable. (Tr. at 4225-26.)

211. In 2015, the PSSAs were aligned with the new Pennsylvania Core Standards. The State Board received data regarding the impacts of the newly aligned PSSA exams, which showed a drop in scores between 2014 and 2015. The State Board did not take this drop to mean that the quality of education in Pennsylvania became worse. (Tr. at 4321.)

212. The State Board recommended that the Department communicate to parents and others that the PSSA assessments

William Penn School District; Panther Valley School..., Not Reported in Atl....

themselves had changed and that, as a result, there would be a drop in exam scores in 2015. (Tr. at 4349-50; LR-01014.)

213. The State Board believes that the PSSAs are an accurate reliable measure for determining whether students are meeting academic standards set by the State Board, as it is the measure developed by the State Board to make that determination. (Tr. at 4218.)

214. The State Board also believes that the Keystone Exams are a reliable measure, as the State Board determined it will be used for that purpose. (Tr. at 4218.)

215. Similarly, the Department believes state assessments are an important way of measuring the effectiveness of the education system, and that they “shed an important light on equity within the educational system.” (Tr. at 1672-73.)

216. The Keystone Exams were adopted by the State Board with the intention to ensure that students are adequately prepared for college and career without remedial support. (Tr. at 4220.)

217. The state assessments are designed to ensure that students are prepared to enter the workforce and postsecondary education. (Tr. at 4221.)

218. Because passing the Keystone Exams never became a requirement for graduating from Pennsylvania public schools, the State Board has not been able to conduct an analysis into postsecondary and workforce success. (Tr. at 4337-38.)

219. Parents receive notice by letter about their child's score on the PSSA and Keystone assessments every year. (Tr. at 5611-12, 8142-44; PX-00313.) Parents are told that the performance of students who score below basic represents “[i]nadequate academic performance that indicates little understanding and minimal display of the skills” (PX-00313.) Students who score basic are described as providing a “[m]arginal academic performance, work approaching, but not yet reaching, satisfactory performance. Performance indicates a partial understanding and limited display of the skills” (PX-00313.) Students who score proficient are demonstrating “[s]atisfactory academic performance indicating a solid understanding and adequate display of the skills” in the content, and those

who score advanced are displaying “[s]uperior academic performance.” (PX-00313.)

220. The Commonwealth uses these assessments for determining “low-achieving schools.” The sole criteria for being designated as a low-achieving school are annual assessment results: those public schools which rank in the lowest 15% of the Commonwealth, based on combined mathematics and reading scores on state assessments, are considered “low achieving.” The term does not include charter schools, cyber charter schools, or area career and technical schools. Section 2002-B of the School Code, [24 P.S. § 20-2002-B](#).²⁸

*30 221. Schools designated as a “low-achieving school” do not receive any additional resources as a result of the designation. (Tr. at 1678.) Instead, school districts are required to notify families that their students are eligible to leave the schools with an “opportunity scholarship.” (Tr. at 1678-79, 3533-34.)

222. State assessments are also used, at least in part, to evaluate teachers and administrators, as well as charter schools. (PX-03144 ¶ 107 (State Board Answer and New Matter); Tr. at 1698.)

2. ESSA Plan Goals

223. Pursuant to the “Every Student Succeeds Act” (ESSA),²⁹ the Department published a Consolidated State Plan (ESSA Plan). (PX-01830.) The ESSA Plan was submitted to the United States Department of Education on May 31, 2019, and was approved on August 1, 2019. (PX-01830-0001-0002.)

224. ESSA was signed into law in 2015 to reauthorize the Elementary and Secondary Education Act of 1965 (ESEA), [20 U.S.C. §§ 6301-7941](#). (PX-01830-0013.)

225. ESSA “advances ESEA's promise of ensuring that all students – from pre-K to postsecondary, and especially low-income students, students of color, students with disabilities, English Learners, and other historically marginalized students – have access to a world-class education that prepares them for college, career, and life.” (PX-01830-0013.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

226. In developing its ESSA Plan, “[t]he Department sought input from parents and families, educators, community leaders, education advocates, researchers, experts, policymakers, and other individuals throughout the process.” (PX-01830-0013; Tr. at 1787-90.)

227. The ESSA Plan confirms the Commonwealth's commitments to “advancing equity and success for all students throughout the pre-K through 12 and postsecondary continuum; maintaining local control and flexibility; investing in evidenced-based strategies; and promoting transparency and meaningful engagement.” (PX-01830-0017.)

228. The Department created a variety of goals in its ESSA Plan, including for test score proficiency, graduation rates, ELL language and attainment, and career standards benchmarks. (Tr. at 1813-14, 2251-52.)

229. The ESSA Plan established long-term goals, which were informed by the “analyses of historical, aggregate level achievement and graduation rate data.” (PX-01830-0021.)

230. Rather than one “uniform, aspirational goal for all student groups and schools,” the long-term goals contained in the ESSA Plan vary for different student groups, which is intended to avoid “minimizing the cumulative impact of decades of systemic inequity in the nation's public education system.” (PX-01830-0021.)

231. “[T]he guiding principle for the development of” the goals was for them to be within reach. (Tr. at 1816.) “[M]uch in the way that smart goals have to be achievable,” former Deputy Secretary Stem testified, “statewide goals have to be achievable.” (Tr. at 1816, 1821-22.) However, former Deputy Secretary Stem cautioned that “it's very unlikely that we would meet the 2030 ESSA goals without the additional funding for the resources for the strategies to meet the needs” of Pennsylvania students. (Tr. at 1913.)

232. The long-term goals target a goal year of 2030 and utilize baseline data from the 2015 school year. (PX-01830-0021.)

233. For example, in 2015, the baseline for all students was 61.6% proficient or advanced in ELA and 43.2% proficient or advanced in mathematics. (PX-01830-0021, Table 1.1.)

White students had baseline proficient or advanced rates on Pennsylvania assessments of 69.4% in ELA and 50.5% in mathematics; Black students had proficient or advanced rates of 35.9% and 17.1%; and Hispanic³⁰ students had rates of 40% and 22.7%, respectively. (*Id.*) Baselines were also established for other student groups. (*Id.*)

*31 234. From that baseline, the Department set 2030 goals that seek to halve the number of students who are not proficient. (Tr. at 1816; PX-01830-0166–0167.) The ESSA goal for 2030 for all students is 80.8% proficient in ELA and 71.6% proficient in mathematics. (PX-01830-0021, Table 1.1.) The 2030 goals for proficient or advanced for White students are 84.7% in ELA and 75.3% in mathematics, while the goals for Black students are 68% and 58.6%, and for Hispanic students 70% and 61.4%, respectively. (*Id.*) Goals were also established for other student groups. (*Id.*)

235. Interim goals for all students and student subgroups are reflected in the Appendix of the ESSA Plan. Interim goals for ELA are as follows:

Tabular or graphical material not displayable at this time.

(PX-01830-0166.)³¹

236. Interim goals for mathematics are as follows:

Tabular or graphical material not displayable at this time.

(PX-01830-0167.)

237. Similarly, under the ESSA Plan, the Department set statewide goals for graduation rates for all Pennsylvania students and particular subgroups. (PX-01830-0168–0169.)

238. The baseline, four-year cohort graduation rate for all students was 84.8%. The baseline, four-year cohort graduation rate for White, Black, and Hispanic students is

William Penn School District; Panther Valley School..., Not Reported in Atl....

89.3%, 71.8%, and 69.5%, respectively. (PX-01830-0168.)
Baselines were also established for other student groups. (*Id.*)

239. The 2030 goal for four-year cohort graduation rates for all students is 92.4%. (PX-01830-0168.) For White students, the goal is 94.7%. (*Id.*) For Black students, the goal is 85.9%, and for Hispanic students the goal is 84.8%. (*Id.*) Goals were also established for other student groups. (*Id.*)

240. Interim goals for all students and student subgroups are reflected in the Appendix of the ESSA Plan. Interim goals for four-year cohort graduation rates are as follows:

Tabular or graphical material not displayable at this time.

(PX-01830-0168.)

241. The ESSA Plan also established baseline rates, as well as interim goals and the ultimate 2030 goal for five-year cohort graduation rates. (PX-01830-0169.)

242. To ensure that all graduating high school students have the knowledge and skills defined by the academic standards to be college and career ready, Governor Wolf signed into law Act 158 of 2018³² (Act 158), 24 P.S. § 1-121. (*See also* PX-00059-0003.)

243. Act 158, which applies starting with the graduating class of 2023, shifted the high school graduation requirements for public schools across the Commonwealth to allow high school students to demonstrate college, career, and community readiness through multiple pathways. *See* 24 P.S. § 1-121. (*See also* PX-00059-0003; Tr. at 1625-26.)

244. The pathways include:

- a. The Keystone Proficiency Pathway, which allows for a student to graduate by scoring proficient on each Keystone Exam – Algebra I, Literature, and Biology. 24 P.S. § 1-121. (*See also* PX-00059-0003; Tr. at 1630.)
- b. The Keystone Composite Pathway, which allows for a student to graduate through a combination of Keystone Exam scores, such that a score of less than proficient on

one Keystone Exam may be offset by a score of advanced on another. 24 P.S. § 1-121. (*See also* PX-00059-0004; Tr. at 1630-31.)

*32 c. The Alternate Assessment Pathway, which allows for a student to graduate through an alternative exam to the Keystone Exams alongside successful completion of Keystone associated courses. 24 P.S. § 1-121. (*See also* PX-00059-0004; Tr. at 1631.)

d. The Evidence-Based Pathway, which allows for a student to graduate without scoring proficient on the Keystone Exams but instead by demonstrating college and career readiness through additional pieces of evidence alongside successful completion of Keystone associated courses. 24 P.S. § 1-121. (*See also* PX-00059-0004; Tr. at 1631.)

e. The Career and Technical Pathway, which allows for a student to graduate by attaining an industry certification alongside the successful completion of Keystone associated courses. 24 P.S. § 1-121. (*See also* PX-00059-0004–0005; Tr. at 1631-32.)

245. Act 158's requirements were adopted based upon recommendations made by the Department, as directed by the General Assembly, after engaging stakeholders across the Commonwealth for input and reporting on the consensus as to the knowledge and skills that high school students must attain to demonstrate college and career readiness. (Tr. at 1634-35.)

246. The new graduation requirements under Act 158 are more rigorous than those currently in effect. (Tr. at 1643.)

247. The Department describes its ESSA goals as ambitious. (Tr. at 2352.)

248. ESSA also requires all states, including Pennsylvania, to engage in a process called “meaningful differentiation” to identify schools that are at varying degrees of risk. (Tr. at 1681; PX-01707-0010.) As part of this process, the Department designates schools as CSI, ATSI, and TSI. (*See* PX-01806; PX-01803.) CSI schools are those schools designated as the lowest 5% of Title I schools. (Tr. at 1684; PX-01707-0010.) ATSI schools are those schools that have one or more student groups within the school that are performing at a level commensurate with CSI schools. (Tr.

William Penn School District; Panther Valley School..., Not Reported in Atl....

at 1684-85; PX-01707-0010.) TSI schools are those schools who receive an early warning that one of their student groups is at risk of falling into the ATSI level. (Tr. at 1686.)

249. Through its ESSA Plan and elsewhere, the Department has identified strategies that will help students become college and career ready, best ensure student success, and close achievement gaps. (Tr. at 1792-93, 1874-75; PX-01830.) Those strategies include:

- a. high quality pre-K, (PX-01830-0014);
- b. a sufficient number of effective teachers to meet student needs and a stable teaching force, (PX-01830-0093-0094, Tr. at 1896, 1902, 1907-08);
- c. early intensive resources provided from kindergarten to 3rd grade that focus on the concepts of literacy, mathematics, and numeracy, (PX-01830-0116-0117);
- d. professionals in math and reading to provide remediation, including reading specialists, and Multi-tiered Systems of Support (MTSS) that work to identify those students who are in need of additional interventions and provide those interventions, (Tr. at 1878-79, 1900; PX-01830-0074-0075);
- e. personalized learning experiences that encourage school systems to focus on individual needs, (PX-01830-0098-0099; Tr. at 1889);
- f. Positive Behavior Interventions and Support (PBIS) and similar programs to address emotional needs, (PX-01830-0123-0125; Tr. at 1890);
- *33 g. a sufficient number of school counselors, (PX-01830-0108-0109; Tr. at 1896-97);
- h. school libraries and school librarians, (PX-01830-0127; Tr. at 1897);
- i. Advanced Placement (AP), International Baccalaureate (IB), and college-level courses, (PX-01830-0100; Tr. at 1897);
- j. programs to increase school attendance, (PX-01830-0118-0119; Tr. at 1898);
- k. after-school programs, (PX-01830-0148; Tr. at 1900);

l. access to art and music, (Tr. at 1901); and

m. extracurricular activities to develop leadership skills, collaboration skills, persistence skills, and resiliency, (Tr. at 1901-02).

250. The Department has also taken the position that “meaningful access to cutting-edge technology is a prerequisite for success in today's classroom and in a 21st century economy.” (PX-01830-0127.) Accordingly, in its ESSA Plan, the Department has committed funding to purchasing “technology equipment and hand-held devices to improve student academic achievement and increase digital literacy and enhance effective use of technology.” (PX-01830-0149.) The Department also recognizes that “Pennsylvania's economy will be driven by STEM³³ skills, including computer science, coding and software development. These skills require technology and tools to make instruction meaningful.” (PX-01830-0127.)

251. Former Deputy Secretary Stem testified that “[t]he Department's position is that when presented with the high quality resources and appropriate instruction and all the other elements of an effective school system, that every child can be successful.” (Tr. at 2502.)

3. PVAAS/Growth

252. The Pennsylvania Value Added Assessment System (PVAAS) is a tool, created by Statistical Analysis System Institute Incorporated (SAS, Inc.), to measure individual student growth over time based on that student's performance on PSSA and Keystone Exams. (Tr. at 1955-56.)

253. The Guide to PVAAS Public Reporting states, PVAAS:

follows the growth of groups of students over time in order to estimate their growth. With value-added assessment, educators get a sense of whether they are making appropriate academic growth for their students. More specifically, [PVAAS] accomplishes this by following the

same students over time thus looking at the growth of students in order to make an accurate estimate of educational effectiveness. These schooling influences accumulate across the years and measurably thus affect students' attainment at least four years beyond the grade in which students encountered them. Without a value-added metric for measuring effective schooling, districts, and schools have no way of knowing if they are capitalizing on the academic growth opportunities for all students. Student opportunities to grow each year must be maximized to allow more students to be college and career ready.

*34 (PX-02118-0005.)

254. "Value-added is a statistical analysis used to measure districts' and schools' impact on the academic growth rates of groups of students from year to year." (PX-02118-0006.)

255. Growth is measured by comparing current achievement with prior achievement, with achievement being measured by Pennsylvania state assessments. (PX-02118-0006.)

256. PVAAS calculates and reports a "Growth Measure," which is an "estimate of a district's or school's influence on students' academic growth in each state assessed grade and subject or Keystone content area." (PX-02118-0009.)

257. PVAAS's growth measures are expressed in both positive and negative numbers, with a zero signifying that relative to other students, a student grew one year in one year's time, and therefore "maintained their relative position" to others. (Tr. at 1961-62; PX-02120-0005.) In other words, "they haven't fallen behind, but they haven't necessarily advanced significantly either." (Tr. at 1962.)

258. The more positive a growth score, the greater the evidence that the student has made at least one year's worth of growth over the course of a year. (Tr. at 1962-63.)

259. PVAAS also calculates and reports an Average Growth Index (AGI), which is stated to be "a measure of student growth across the tested grade levels in a district or school." (PX-02118-0009.) AGI, as an index, is a value "based on the Growth Measure over grade levels and its relationship to the standard error. ..." (PX-02118-0010.) AGI is calculated by dividing the growth measure by a standard error. (Tr. at 1970; PX-02118-0016.)

260. "The Standard Error allows users to establish a confidence band around the Growth Measure to determine if growth is evident for the group of students in question. The inclusion of more data (i.e., more students, more data points) generally yields a smaller Standard Error and makes the Growth Measure more precise." (PX-02118-0018.)

261. Documentation from the Department explains that, "[i]n general, if the [AGI] is positive (greater than 0), this indicates that, on average, students ... met or exceeded the growth standard." (LR-04229-00005.) Conversely, "[i]f the [AGI] is negative (less than 0), this indicates that, on average, students ... did not meet the growth standard." (*Id.*)

262. AGI is also "color-coded to aid in the interpretation of the information," which is intended to indicate, on average, whether "students gain, maintain, or fall behind regarding their achievement." (PX-02118-0010.)

263. AGI is reported on a five-color scale. Dark Blue is an indication that there is "significant evidence of exceeding the standard." (PX-02120-0005.) Any population with an AGI of greater than two is rated as Dark Blue. (*Id.*) Light Blue is an indication that there is "moderate evidence of exceeding the standard." (*Id.*) Any population with an AGI of greater than one but less than two is rated as Light Blue. (*Id.*) Green is an indication that there is "evidence of meeting the standard." (*Id.*) Any population with an AGI of less than one but greater than negative one is rated as Green. (*Id.*) Yellow is an indication that there is "moderate evidence of not meeting the standard." (*Id.*) Any population with an AGI of less than negative one but greater than negative two is rated as Yellow. (*Id.*) Red is an indication that there is "significant evidence of not meeting the standard." (*Id.*) Any population with an AGI of less than negative two is rated as Red. (*Id.*)

*35 264. When AGI results in the color-code Green, "educators would want to determine if green is good enough

William Penn School District; Panther Valley School..., Not Reported in Atl....

for that group of students.” (LR-00618-00009.) The guide “PVAAS Methodologies: Measuring Growth & Projecting Achievement” explains:

If the achievement of the group is high, then many teachers, schools, and districts may say “that green is good.” However, even with a green, there are certainly opportunities for students to increase their average achievement and for educators to support students in making academic growth.

If the group of students is lower achieving, some educators might say that it's good that the group did not slip further behind. However, most educators would agree that green is not sufficient, or good enough, for a lower achieving group of students since this means that the group would simply be maintaining a lower level of achievement. For students with lower achievement, the goal of teachers, schools, and districts should be to raise the achievement of the student group.

(*Id.*)

265. AGI is heavily dependent on school district size. (Tr. at 1975.) This is because the standard error used to calculate AGI is derived from the number of tests given in a district, and thus is a proxy for school district size. (Tr. at 1974-75.) As former Deputy Secretary Stem described it, the reasoning is that “the greater number of students you have ... the greater your confidence is going to be” in the evidence of growth or regression. (Tr. at 1972.)³⁴

4. Future Ready PA Index

266. In preparing the ESSA plan, the Department heard from commenters that schools should be evaluated holistically based on a range of measures, not just test scores. (Tr. at 2283.) Consequently, the Department developed the Future Ready PA Index.

267. The Future Ready PA Index is a tool designed to aid educators, stakeholders, school districts, and the Commonwealth at large in evaluating the performance of educational institutions. (PX-01830-0015.)

268. The purpose of the Future Ready PA Index is to provide a holistic snapshot of the performance of school. (PX-01830-0015; Tr. at 1699.)

269. In developing the Future Ready PA Index, the Department “facilitated 30 sessions, reaching more than 1,000 stakeholders to identify nearly two dozen research-based indicators of school performance.” (PX-01830-0015.)

270. The Future Ready PA Index reports on State Assessment Measures, including proficiency on PSSA and Keystone Exams; on Academic Growth Measures, such as PVAAS; on On-Track Measures, including English Language Growth and Attainment, Regular Attendance, and Early Indicators of Success; and on College and Career Measures, including the Career Standards Benchmark, High School Graduation Rates, Industry-Based Learning, Rigorous Courses of Study, and Postsecondary Transition to School, Military, or Work.³⁵ (*See generally* Tr. at 1700-1800.)

*36 271. The Department maintains and reports an attendance measure, referred to as “regular attendance,” on the Future Ready PA Index. “Regular attendance” and “chronic absenteeism” are the inverse of each other. Chronically or habitually absent students are students who miss 10% or more of the days that they are enrolled in school. The Department's “regular attendance” measure refers to the percentage of students who attend school 90% of the time. Accordingly, if a student is enrolled for a full school year (approximately 180 days), the student would be habitually absent if the student missed 18 or more days of school. In contrast, if the student missed 17 or fewer days, the student would be included in the group of students considered to regularly attend school. The measure does not distinguish between excused and unexcused absences. (PX-01703-0013; Tr. at 2297-301.)

272. The Future Ready PA Index also includes a metric that uses assessment scores called “early indicators of success,” which are “attentive to what's happening at Grade 3 reading and what's happening at Grade 7 math, because those are two pivotal junctures in a student's educational career, being able to read on grade level by Grade 3 and being mathematically sound in Grade 7.” (Tr. at 1700.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

273. The Career Standards Benchmark reported in the Future Ready PA Index is a calculation of students' career readiness experiences in the school. (PX-01703-0015.) Its purpose is to highlight how well schools help students explore career opportunities and develop career goals throughout their schooling. The Department believes that the career standards benchmark accomplishes this goal. (Tr. at 2295-96; PX-01830-0054.)

274. The Department also reports a "Rigorous Courses of Study" indicator on the Future Ready PA Index. This indicator represents the percentage of 12th grade students who participated in at least one AP, IB, or dual enrollment course, or was a concentrator in a CTE program of study. Students are counted once, even if they completed multiple rigorous courses of study. (PX-01703-0023-0024.)

275. The Department reports a "Postsecondary Transition to School, Military, or Work" indicator on the Future Ready PA Index. This indicator represents the percentage of high school graduates who are shown as enrolling in college or postsecondary studies on the National Student Clearinghouse (NSC) database, enlisting in the military as determined from the Defense ManpowerData Center database, or entering the workforce as determined from the Pennsylvania Department of Labor and Industry's Data Mart database. (PX-01703-0026-0027.)

276. Former Deputy Secretary Stem acknowledged there are some limitations for the workforce data presented in the Future Ready PA Index because the data does not allow the Department to disaggregate by student group the way it does with other measures and because it is limited to Pennsylvania data obtained from the Department of Labor and Industry. Therefore, the Department does not have data from students employed outside of Pennsylvania. (Tr. at 1752-53.) Nor does it reflect individuals who are self-employed or employed in certain family-owned businesses. (PX-01703-0027.)

277. Future Ready PA Index also provides interim targets for schools to close at least half of any existing achievement gaps by 2030. (Tr. at 1706-08.)

278. The Commonwealth's need for a skilled and educated workforce that can thrive in the global economy of the 21st century led to the adoption of a postsecondary attainment goal in 2018. (Tr. at 8668-70.)

279. The State Board's Council of Higher Education, in conjunction with the Department, adopted an attainment goal of having 60% of Pennsylvania's age 25-64 population hold a postsecondary degree or industry-recognized credential by 2025. (Tr. at 4234, 4238, 4242, 4386-87, 8668-70; PX-03339.) For purposes of this goal, the relevant population includes Pennsylvania residents who attended and graduated from high school in the Commonwealth, attended postsecondary institutions in the Commonwealth, or moved to the Commonwealth from another state. It does not include individuals who were educated in public schools or postsecondary institutions but now reside in another state. (PX-07008-0004-0005.)

*37 280. The goal was established by examining data related to postsecondary enrollment, persistence, and attainment rates across the Commonwealth between 2010 and 2016. (PX-03338-0008-0016.)

281. As part of the postsecondary attainment goal that it adopted, the State Board expressed its view that Pennsylvania's age 25-64 population should attain the following levels of education by 2025:

- a. 11% of the population with a master's degree or higher;
- b. 22% of the population with a bachelor's degree; and
- c. 33% of the population with an industry certificate or an associate degree.

(LR-01028-00005.)

282. Likewise, the Department's ESSA Plan includes a discussion of the postsecondary attainment goal. According to the ESSA Plan, the Department predicts that, by 2025, 33% of jobs will require a bachelor's degree or higher; 33% of jobs will require an industry certificate or an associate degree; and 33% of jobs will not require any postsecondary education. (PX-01830-0107.)

283. As of May 1, 2019, only 41% of Pennsylvanians had obtained a postsecondary degree or other industry-valued

5. Attainment

William Penn School District; Panther Valley School..., Not Reported in Atl....

credential, with 1.4 million adults across the Commonwealth earning at least 20 postsecondary credits but not completing a postsecondary degree. (PX-01830-0107.)

6. Other Measures

284. As part of the NAEP, tests in ELA, math, and science are administered every two years to a representative sample of 4th and 8th grade students in Pennsylvania and across the country. (Tr. at 1858, 14259.)

285. For purposes of the NAEP, students are classified as “eligible students,” meaning that they are eligible for free and reduced lunch, or “not eligible students,” meaning that they are not eligible for free and reduced lunch. Free lunch eligibility can be seen as a proxy for economic disadvantage. (Tr. at 2400.)

286. NAEP is not a Pennsylvania specific test and was not designed to evaluate the performance of individual schools. (Tr. at 14258-59.)

287. State regulations prohibit NAEP from being used as part of the state assessment system “unless, upon consultation with teachers, counselors and parents ... the Board determines the assessment is an appropriate means of assessing the academic progress of students identified under Chapter 14, or unless the General Assembly authorizes the use of a National assessment.” 22 Pa. Code § 4.51.

288. The SAT exam scoring report also provides a “College and Career Readiness Benchmark.” The SAT Math benchmark is the score on the math section of the SAT that is associated with a 75% chance of earning at least a C in first-semester, credit-bearing, college-level courses in algebra, statistics, pre-calculus, or calculus. The SAT Evidence-Based Reading and Writing benchmark is associated with a 75% chance of earning at least a C in first-semester, credit-bearing, college-level courses in history, literature, social science, or writing. (LR-01986-00002; LR-01987-00002.)

289. Other measures of outcomes include AP and IB exams.

E. Funding of the System

290. Public education throughout the United States, including Pennsylvania, is funded through a partnership of state, local, and federal governments, with the majority of revenue coming from state and local sources. (Tr. at 1144-45.)

*38 291. Using both state and local revenues to fund education is a long-standing practice both in Pennsylvania and across the United States. Pennsylvania has used both state and local taxes to fund education since the 1800s. (Tr. at 1381-82.)

292. The Department administers and distributes various state and federal funding programs for public education in Pennsylvania, including state basic education funding, state special education funding, state assessment funding, state career and technical education funding, and migrant education funding. (Stem Dep. Vol. 1 at 14-15; Tr. at 2040.)

293. In 2018-19, approximately 3% of Pennsylvania school district revenue came from federal sources, 37.52% of total revenue came from state sources, and 57.79% of total revenue came from local sources. (PX-02134, “2018-19 Revenue by Source” Tab, Row 753, Columns I and K; Tr. at 1145.)

294. There is also a category called “other revenue.” Witnesses explained that “other revenue” includes figures that are not “actual dollars that are going into a district’s budget or out of a district’s budget,” but instead booking the value of things such as refinances. (Tr. at 1543-44.) The Chief Financial Officer (CFO) of SDP, Uri Monson, explained, for example, that in 2015-16, SDP took advantage of low interest rates and refinanced \$999 million as both revenue and expenditures. (Tr. at 10268-71; PX-02132, Tab “2016-17 Revenue by Source,” cell N400.) As a consequence, SDP had \$999 million listed as “other revenue,” which works out to approximately \$5,000 per average daily membership (ADM).³⁶ However, in reality, that did not signify money available to educate students. (Tr. at 10271-72.) Thus, “other revenue” should be excluded from analyses.

295. When subtracting “other revenue” from the 2019-20 revenue figure, Pennsylvania school districts received approximately \$31.5 billion in funding. (PX-02135, Tab “2019-20 Revenue by Source,” cells H752, J752, L752.) A total of \$950 million was raised from federal sources, and \$12.1 billion was raised from state sources. (PX-02135,

William Penn School District; Panther Valley School..., Not Reported in Atl....

Tab “2019-20 Revenue by Source,” cells J752, L752.) In 2019-20, \$18.4 billion was raised from local sources, of which \$17.4 billion was from local taxes. (PX-02135, Tab “2019-20 Revenue by Source,” cells H752, F752.)

1. Federal Funding

296. The Department administers and distributes federal funding for education, including federal Title funding (Titles I, I-A, II, II-A, III and IV); federal 21st Century dollars, federal IDEA funding for special education programs; and COVID relief funding. (Stem Dep. Vol. 1 at 15; Tr. at 2044.)

297. Federal education funding under Title I is targeted to schools with higher percentages of students in poverty to supplement their instructional experiences. (Tr. at 2044-45.) Approximately 1,700 schools in Pennsylvania receive Title I funds. (Tr. at 2045.)

*39 298. Federal education funding under Title II is allocated for teacher professional development, while funding under Title III is for ELL instruction. (Tr. at 2045-46.)

299. Title IV funds (through an expansion under ESSA) can be used more flexibly to supplement instructional programs through an expansive list of allowable expenses. (Tr. at 2046.)

300. Federal funding is also provided through Perkins funds, which are used for CTE programs, and McKinney-Vento funds, which are used to support homeless students. (Tr. at 2046-47.)

301. 21st Century funds are competitive federal grants to support extended day, extended school year, and after-hours instructional programs. (Stem Dep. Vol. 1 at 124-25.)

302. In response to the COVID pandemic, the federal government made available to states three rounds of federal Elementary and Secondary School Emergency Relief (ESSER) funding. (Tr. at 2452.) These three rounds of funding – sometimes referred to as ESSER I, ESSER II, and American Recovery Plan (ARP) ESSER or ESSER III – were intended to be used by states “to mitigate the impacts of COVID on students.” (Tr. at 2452-53.)

303. For Pennsylvania, ESSER I funding, which was given in the late spring or early summer 2020, was approximately \$500 million; ESSER II funding, which was given in November or December 2020, was approximately \$1.5 billion; and the ESSER III funding was an additional \$5 billion. (Tr. at 2453.) The Department was responsible for determining how the ESSER funds would be distributed to school districts in Pennsylvania, though the General Assembly was also involved. (Tr. at 2453-54.) *See also* Section 143-C of The Fiscal Code, 72 P.S. § 143-C.³⁷

304. Noe Ortega, former Deputy Secretary and Commissioner for the Office of Postsecondary and Higher Education,³⁸ confirmed that at least 90% of the \$5 billion in ARP ESSER funding flowed directly to school districts and charter schools. (Tr. at 8837.) Pennsylvania also invested \$350 million of ARP ESSER funds for schools to address learning loss and provide summer enrichment and afterschool programs to help students with academic, social, emotional, and mental health needs. (Tr. at 8836.)

305. The Department published spreadsheets showing how the funding was distributed. (Tr. at 2454; LR-01638.) The ESSER funds were distributed formulaically to school districts using the same formula that is used to distribute funds in Title I. As a general matter, this formula was intended to ensure that lower-wealth districts get a higher percentage of the money. (Tr. at 2454.)

306. School districts are required to spend the ESSER funds within a certain time period. ESSER I funding must be spent by September 2022; ESSER 2 funding must be spent by September 2023; and ARP ESSER funding must be spent by September 2024. (Tr. at 2462-63.)

*40 307. The permitted expenses for the ESSER funds “are those which address the impacts of COVID on school communities” and the funds are “intended to be used to mitigate some of the negative impacts of COVID on students.” (Tr. at 2464.) Such monies can be used for health and safety activities or functions, instructional functions, or facilities-related needs (relating to air quality or social distancing). (Tr. at 2464-65.) For ARP ESSER funding, some funds must be set aside to address learning loss caused by the pandemic. (Tr. at 2465.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

308. On March 29, 2021, former Secretary Ortega published a letter to his colleagues offering some guiding principles for initial efforts to implement ARP ESSER funding, with the first being to “evaluate both short- and long-term needs.” (LR-01725-00002–00003.) Former Secretary Ortega advised districts to “consider how your school entity can sustain these non-recurring resources over the allowability period and how these funds can interact with other Federal support.” (LR-01725-00002.) As former Deputy Secretary Stem explained, former Secretary Ortega was communicating to school district leaders “a reminder that these are one-time funds[;] these are non-recurring funds[;] and that districts should be ... thoughtful about how they’re leveraging these funds for short and long-term needs, knowing that in 2024, that these funds would no longer be available.” (Tr. at 2467-68.) Former Deputy Secretary Stem also explained that the intent was to warn districts that the money was not appropriate for recurring costs, such as “long range staffing needs,” because “[t]here’s a cliff that school leaders should be anticipating.” (Tr. at 2467-69.) As he further explained, former Secretary Ortega was “advocating for a strategic approach to meeting students’ needs through these funds, and a thoughtful approach that considers all funding sources in well[-]conceived ways.” (Tr. at 2468.)

309. Thus, the Department recognized that while the ESSER funds are one-time and should not be committed to recurring costs, there are ways that school districts could use these funds to meet long-term needs and achieve long-term benefits. (Tr. at 2468-69.) For instance, former Deputy Secretary Stem agreed that improving the HVAC systems within a district’s schools could be something that would be a one-time expense that might also serve long-term needs. (Tr. at 2469.) As former Deputy Secretary Stem further explained, using ESSER funding to meet longer term needs could free up other funds (which otherwise might have been needed to meet those purposes) to serve a district’s other needs – an approach which the Department advocates. (Tr. at 2470.)

310. In addition, in a letter to school districts, President Pro Tempore specifically advised that “school districts should not use one-time federal funding to increase their ongoing, baseline spending with the expectation that the state’s fiscal condition will be in a position to replace the funding in future years.” (PX-04655-0002.)

2. State Funding

311. The General Assembly has passed numerous appropriations statutes related to the public school system, most of which are located in the School Code. The General Assembly regularly reviews and revises the statutory system for funding public education. Typically, every year with the enactment of the budget, the School Code is amended and some of those amendments relate to issues regarding school funding. (Tr. at 11611-12.)

312. State appropriations for funding of public education authorized by the General Assembly and included in the most recent Commonwealth budget include Basic Education Funding (BEF); Special Education Funding; state contribution into the Public School Employees’ Retirement System (PSERS); funding for career and technical education; planning Construction Workbook (PlanCon) school construction funds (referred to in the budget as “Authority Rentals and Sinking Fund Requirements”); funding for Early Intervention programming for children below school age; Pre- K Counts funding and Head Start Supplemental Assistance; and Ready-to-Learn Block Grants. (Tr. at 11613-17, 11631-32; LR-01548.)

*41 313. The state funding for special education includes early intervention programs for students before they begin kindergarten. (Stem Dep. Vol. 1 at 28-29.) It is administered to students who are in need of specially designed instruction related to a developmental delay or another issue that may impair their learning and development. (Stem Dep. Vol. 1 at 171-72.) Administration of the early intervention programs is one of the primary functions of the state’s IUs, which case manage and either provide services directly to the student or coordinate such services by contracting with third parties. (Stem Dep. Vol. 1 at 173-74.)

314. Pennsylvania also provides Ready-To-Learn Block Grants to school districts, which are funds targeted to certain student needs. (Tr. at 2040-41.) There is an enumerated list of acceptable statutory and regulatory uses for such grants, including reducing class size, providing additional technology instruction, and professional development for teachers. Section 2599.2 of the School Code, 24 P.S. § 25-2599.2.³⁹ (See also Stem Dep. Vol. 1

William Penn School District; Panther Valley School..., Not Reported in Atl....

at 21.) Approximately \$6 million is allocated annually for professional development programs for administrators and teachers. (Stem Dep. Vol. 1 at 24-26.)

315. The General Assembly has also enacted tax credit programs, such as the Educational Improvement Tax Credit (EITC) and Opportunity Scholarship Tax Credit (OSTC), which allow businesses to make contributions to qualified educational organizations and claim a tax credit in connection with those contributions. (Tr. at 11365-67.) Under these programs, low-income students who attend low-achieving public schools receive funding in the form of scholarships that help them “to attend schools which are not low-achieving schools and which are not public schools within the eligible student’s school district of residence.” Section 2003-B(d.1)(1) of the School Code, 24 P.S. § 20-2003-B(d.1)(1).⁴⁰

316. The Department administers funding for IUs, tuition for orphans and children placed in private homes, and funding to educate children of migrant workers. (Tr. at 2041-42.)

317. In addition, the Department administers funding for schools for the deaf and blind, school food services, and contributions to retirement benefits and social security for teachers and school employees. (Tr. at 2042.)

318. The Department also provides subsidies to school districts for student transportation, as well as funding to financially distressed districts for systems-level improvements and additional supports. (Stem Dep. Vol. 1 at 26-28.)

319. The Department administers funding for Pre-K Counts, an early childhood education program that targets students in poverty and high-need students “to prepare them to be successful in kindergarten and beyond.” (Tr. at 2042-43.)

320. The Department also administers funding for early intervention services for students up to age five who exhibit potential disabilities. (Tr. at 2043.)

321. Between 2014-15 and 2021-22, total education budgets (excluding higher education budget appropriations) were as follows:

General Assembly Year	Governor's Proposal	Appropriation
2014-15	\$10,659,139,000	\$10,602,327,000
2015-16	\$11,079,262,000	\$10,136,666,000
2016-17	\$11,872,390,000	\$11,781,340,000
2017-18	\$12,211,115,000	\$12,239,421,000
2018-19	\$12,816,783,000	\$12,668,783,000
2019-20	\$13,127,581,000	\$13,142,086,000
2020-21	\$13,409,425,000	\$13,339,556,000
2021-22	\$13,927,969,000	\$15,128,176,000

(ER-045.)

322. In the 2021-22 fiscal year, the total enacted budget in Pennsylvania was \$38,584,580,000. (Tr. at 11593; LR-01809-00012.) Of the total state budget amount, nearly \$14 billion was apportioned to the Department, which is the Commonwealth's second largest line-item apportionment on its budget, trailing only that of DHS at \$16 billion, which funds Medicaid, medical assistance, the state's long-term managed healthcare program, and the County Child Welfare program, which supports counties in helping abused and neglected children. (Tr. at 11597, 11599, 11604-05, 11608, 11629; LR-01809-00004, 00007-00008.) Collectively, the Commonwealth's apportionment of funds to the Department and DHS comprises approximately 80% of the Commonwealth's General Fund Budget. (Tr. at 11608; LR-01809.)

*42 323. The largest source of state revenue is BEF, which consistently accounts for more than half of all state funding. (See, e.g., PX-01816, Tab “2019-20 through 2010-11,” Columns E-F.) BEF for 2014-15 through 2021-22 was as follows:

General Assembly Year	Governor's Proposal	Appropriation
2014-15	\$5,526,129,000	\$5,526,129,000

William Penn School District; Panther Valley School..., Not Reported in Atl....

2015-16	\$6,130,079,000
\$5,680,079,000	2016-17
\$6,306,969,000	\$5,895,079,000
2017-18	\$5,995,079,000
\$5,995,079,000	2018-19
\$6,095,079,000	\$6,095,079,000
2019-20	\$6,537,078,000
\$6,742,838,000	2020-21
\$6,857,471,000	\$6,805,954,000
2021-22	\$8,133,774,000
\$7,066,773,000	

(ER-045.)

324. Beginning in the 2019-20 funding year, the allocation for BEF also includes social security payments. Section 2599.7 of the School Code, [24 P.S. § 25-2599.7](#).⁴¹ (See also ER-045; PX-01913-0001; PX-04778-0001.) Social security funds formerly were captured as a separate line-item appropriation. (Tr. at 12138; LR-01548 n.(a).) In 2021-22, the BEF amount includes \$500 million in state contribution to social security funds. (Tr. at 12138; LR-01548 n.(a).) Without including the social security contribution, BEF was approximately \$6.56 billion in 2021-22. (PX-04778.)

325. In addition to authorizing appropriations for public education, the General Assembly regularly enacts statutes that provide for the distribution of BEF. These statutes are also found in the School Code. Because BEF is paid to school districts as a reimbursement of past expenses, the sections of each fiscal year's School Code that relate to BEF are drafted to refer back to the previous school year, for which the reimbursement is being provided. (Tr. at 11637, 11650.) For example, Section 2502.47 of the School Code, [24 P.S. § 25-2502.47](#),⁴² which is entitled “Basic [E]ducation [F]unding for 2006-2007 school year,” applies to BEF paid to school districts in the 2007-08 fiscal year. (Tr. at 11638.)

326. In the 2006-07 allocation year and all earlier allocation years extending back to at least 1963, no allocation formula required the calculation of, or referred to, an adequacy target. See Sections 2502.1-2502.46 of the School Code, [24 P.S. §§ 25-2502.1-46](#).⁴³

327. Beginning with the 2007-08 allocation year, Section 2502.48 of the School Code, [24 P.S. § 25-2502.48](#),⁴⁴ required the Department to calculate an “adequacy target” and a “State funding target” for each school district. *Id.* (See also Tr. at 11639.) Section 2502.48(c)(2) of the School Code provided that “[i]n furtherance of the General Assembly's long-standing commitment to providing adequate funding that will ensure equitable State and local investments in public education and in order to enable students to attain applicable Federal and State academic standards, it is the goal of this Commonwealth to review and meet State funding targets by fiscal year 2013-14.” [24 P.S. § 25-2502.48\(c\)\(2\)](#).⁴⁵

*43 328. The adequacy targets were derived from a costing-out study conducted by Augenblick, Palaich and Associates (APA) (Costing Out Study). (Tr. at 11639-40.)

329. In Section 2599.3 of the School Code, [24 P.S. § 25-2599.3](#),⁴⁶ “[t]he General Assembly direct[ed] the State Board ... to conduct or provide for a comprehensive Statewide costing-out study to arrive at a determination of the basic cost per pupil to provide an education that will permit a student to meet the State's academic standards and assessments.”

330. Dr. Eric Hanushek, one of Legislative Respondents' experts, offered his explanation of a costing-out study as,

an attempt to take a given goal for education and figure out what resources would be required by schools to achieve that goal, and then usually it compares those resources to the current level of resources in the state or districts that are involved to make a statement about how much resources should be expanded according to their study.

(Tr. at 14091-92.) Dr. Matthew G. Kelly, one of Petitioners' experts, described a costing-out study as one that “determine[s] the amount of funding school districts would need to be able to reach proficiency at the time that the study was conducted.” (Tr. at 1171.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

331. The Costing Out Study was to “consider both adequacy and equity.” 24 P.S. § 25-2599.3(b). The statutory definition of “adequacy” is “whether sufficient resources, both State and local, are being committed to meet established performance standards and assure academic success for all.” *Id.* The term “equity” is defined as “whether public resources being committed to education are distributed in such a way that all children, regardless of race, gender, ethnicity, disability, socioeconomic status and geography, have an equal opportunity to succeed in school.” *Id.*

332. The State Board selected APA to conduct the Costing Out Study. (PX-00099-0012.)

333. The State Board, in conjunction with APA, selected the Pennsylvania Accountability System as the performance target for the study. (Pet. for Rev. ¶ 124; PX-03144 ¶ 124 (State Board's Answer and New Matter); PX-03145 ¶ 124 (Executive Respondents' Answer and New Matter).) The Pennsylvania Accountability System's key goals were that all students: (i) meet state standards in 12 academic areas; and (ii) score “proficient” or above on reading and math PSSA exams by the year 2014. APA used a variety of nationally recognized research approaches to calculate the costs associated with achieving those goals. (PX-03144 ¶ 124 (State Board's Answer and New Matter); PX-03145 ¶ 124 (Executive Respondents' Answer and New Matter).)

334. The Costing Out Study was completed in December 2007 and presented to the State Board. (PX-00099-0001.)

335. APA identified three key cost elements for Pennsylvania schools: (i) the “base cost” of educating an average student in the Commonwealth to meet state performance expectations (excluding food service costs, transportation costs, costs associated with community services, capital costs, or debt service); (ii) the cost “weights” for the additional expense of educating students with special needs (including economically disadvantaged students, special education students, gifted students, and ELL students) to meet performance standards and to effectively educate the Commonwealth's gifted and talented students; and (iii) additional “cost factors” associated with differences between school districts in terms of their size, enrollment change, urban or rural location, and cost of living differences across the state. (Pet. for Rev. ¶ 125; PX-03144 ¶ 125 (State Board's Answer and New Matter); PX-03145 ¶ 125 (Executive

Respondents' Answer and New Matter); PX-00099-0013.) These factors were consistent with the General Assembly's mandate in Act 114. (Pet. for Rev. ¶ 125; PX-03144 ¶ 124 (State Board's Answer and New Matter).)

*44 336. Pursuant to the requirements of the State Board, APA identified the key goals of the Pennsylvania Accountability System as 100% of students “master[ing] state standards in 12 academic areas” and “scor[ing] ‘proficient’ or above on reading and math assessments by the year 2014.” (PX-00099-0014.) APA did not calculate its base per-pupil cost for providing students with an adequate education based on school districts who were achieving 100% proficiency. (Tr. at 1315, 13526-27.) Rather, APA's calculations were based on the education spending of districts already meeting 2012 interim goals for proficiency or on a trajectory to meet those goals: 81% proficiency in reading and 78% proficiency in math. (Tr. at 13527; PX-00099-0014, -0016, -0040.) These performance levels are largely consistent with Pennsylvania's targets for student achievement developed in its 2019 ESSA Plan, which the Department believes to be achievable if more resources are provided to schools. (Tr. at 1821-22; PX-01830-0166–0167.)

337. APA drew the following conclusions with respect to the “adequacy” of Pennsylvania's 2005-06 funding arrangement for each district to meet state standards: (i) the estimated additional spending needed for an adequate education was \$4.38 billion (25.4%) higher than actual spending in 2005-06; (ii) “[t]he average total costing[-]out estimate per student was \$11,926,” while Pennsylvania school districts spent on average only \$9,512 per student in 2005-06 (a spending shortfall of \$2,414) with approximately 150 districts having a spending shortfall greater than \$3,000 per student; and (iii) there were 471 out of 500 Commonwealth school districts that spent less than their costing-out estimate. (Tr. at 1172-74; PX-00099-0008, -0059–0060.) APA also concluded that the Commonwealth's least wealthy districts were the furthest from their costing-out estimates: on average, the poorest 20% of districts would need to raise spending by 37.5%, while the wealthiest 20% would need to raise spending by only 6.6%. (PX-00099-0009; PX-03144 ¶ 126 (State Board's Answer and New Matter).)

338. APA drew the following conclusions with respect to the “equity” of Pennsylvania's 2005-06 funding arrangement: (i) when wealth is measured by combining property value and

William Penn School District; Panther Valley School..., Not Reported in Atl....

income, there is a substantial variation in wealth between school districts in Pennsylvania; (ii) state aid to each school district is fairly consistent once all cost pressures are taken into account (e.g., number of students with special needs, differences in district size), but when cost pressures are not taken into account, “districts with higher need levels do receive more state funds per enrolled student” and “wealthier districts tend to receive less state aid per enrolled student than poorer districts[;]” (ii) local revenue is almost twice as much as state revenue, which overwhelms whatever equity there is from state aid; (iv) to raise local revenue, poorer districts have the highest tax effort, while the wealthiest districts generally have the lowest effort; and (v) state and local taxes for schools are 6-12% lower than those collected in 6 nearby states. (PX-03144 ¶ 127 (State Board's Answer and New Matter); PX-00099-0009-0010.)

339. The Costing Out Study concluded that based upon its equity analysis:

[i]f additional revenues are needed to improve student performance, such funds should be collected at the state level and allocated by the state through a formula that is sensitive to the needs and wealth of school districts. By focusing on state funding in this way, Pennsylvania will be better able to reduce the inequities caused by the current heavy reliance on local revenues.

(PX-00099-0010; PX-03144 ¶ 128 (State Board's Answer and New Matter).)

340. In Section 2502.48(c)(1) of the School Code, the General Assembly did not adopt APA's recommendation, but established state targets equaling approximately 50% of what APA estimated to be a district's funding shortfall. 24 P.S. § 25-2502.48(c)(1). (Compare PX-01904, cell M503, with cell N503; Tr. at 1178.)

*45 341. The Department's Division of Subsidy Administration is responsible for performing the calculations

necessary to make state payments to school districts. (Tr. at 12094-95.) In performing such calculations, the Department reviews the relevant enabling legislation and calculates distributions and allocations according to that legislation. (Tr. at 12185.) Calculations are published in a publicly available document. (Tr. at 12111.)

342. Benjamin Hanft, the Department's Division Chief for Subsidy Administration, testified as the Department's designee on school finance. (Tr. at 12094.) Division Chief Hanft testified that the Department's Division of Subsidy Administration calculated adequacy targets for only three school years – 2007-08, 2008-09, and 2009-10, which would correspond with the 2008-09, 2009-10, and 2010-11 fiscal years. (Tr. at 12110-17, 12126-27.)

343. The BEF allocation formula for the 2007-08 allocation year is contained in Section 2502.48 of the School Code, and as discussed above, required the calculation of adequacy targets. The law also required the Commonwealth to compare the adequacy target with the amount of actual spending in a district to generate a number known as the “adequacy shortfall,” or how much less school districts have than they need to reach target proficiency levels. 24 P.S. § 25-2502.48(c)(1)(i). (See also Tr. at 1174; PX-01904, Column N.)

344. The BEF allocation formula for the 2008-09 allocation year is contained in former Section 1722-J(17) of The Fiscal Code, *formerly* 72 P.S. § 1722-J(17).⁴⁷ The formula contained in this enabling legislation contains references to subsections of Section 2502.48 of the School Code and the formula therein. *Formerly* 72 P.S. § 1722-J(17)(i)(A).

345. The BEF allocation for the 2009-10 allocation year is contained in former Section 1722-L(14) of The Fiscal Code, *formerly* 72 P.S. § 1722-L(14).⁴⁸ The formula contained in this enabling legislation contains references to subsections of former Section 1722-J(17) of The Fiscal Code and Section 2502.48 of the School Code and the formula therein. *Formerly* 72 P.S. § 1722-L(14)(i)(A)-(ii).

346. The BEF allocation formula for the 2010-11 allocation year is contained in Section 2502.50 of the School Code, 24 P.S. § 25-2502.50.⁴⁹

William Penn School District; Panther Valley School..., Not Reported in Atl....

347. Beginning with the enactment of Section 2502.50 of the School Code for the 2010-11 allocation year, David Donley, Republican Staff Executive Director for the Pennsylvania House Appropriations Committee and Division Chief Hanft both testified the BEF allocation formula no longer contained references to, or required the calculation of, an adequacy target. (Tr. at 11645, 12127.)

348. As a result, Division Chief Hanft testified it is the administrative interpretation of the Department that it was not required to and, therefore, did not calculate an adequacy target subsequent to the passage of Section 2502.50. (Tr. at 12127-28.)

349. Mr. Donley testified the adequacy targets were taken out of the School Code by the General Assembly because they were deemed too expensive in light of the Commonwealth's financial circumstances at the time. (Tr. at 11642.)

*46 350. In Section 34 of the Act of June 30, 2011, P.L. 112, the General Assembly amended the School Code to remove the language in Section 2502.48(c)(2), quoted above. (See FOF ¶ 327.)

351. The BEF allocation formulas for the 2011-12 and 2012-13 allocation years are contained in Sections 2502.51 and 2502.52 of the School Code, 24 P.S. §§ 25-2502.51, 25-2502.52,⁵⁰ respectively. The BEF allocation formula for the 2015-16 allocation year and each year thereafter is contained in Section 2502.53 of the School Code, 24 P.S. § 25-2502.53.⁵¹

352. In 2016, Pennsylvania adopted the Act of June 1, 2016, P.L. 252, No. 35 (Act 35). Act 35, which is colloquially known as the “Fair Funding Formula,” is codified in Section 2502.53 of the School Code, 24 P.S. § 25-2502.53.

353. Mr. Donley testified that the Fair Funding Formula “does not tell us how big the pie should be, only how we should divide up the pie[.]” (Tr. at 11736.)

354. As stated in its ESSA Plan, former Deputy Secretary Stem agreed it is the Department's position, “as a general matter,” that Act 35 establishes a fair, equitable formula for allocating new state funds and that Pennsylvania is committed

to ensuring state and federal resources are directed to schools with the greatest need. (Tr. at 2378-79.)

355. Act 35 adopted into law a funding formula developed and recommended by the Basic Education Funding Commission (BEF Commission). 24 P.S. § 25-2502.53(a). (See also Tr. at 12120-21.)

356. The General Assembly established the BEF Commission and charged it with, among other things, reviewing and making recommendations related to BEF and developing a new formula, including identifying relevant factors, which might be used in distributing BEF among school districts in the Commonwealth. (LR-00509-00005.)

357. The BEF Commission was a bipartisan commission that included six representatives from the Pennsylvania Senate (three Democrat and three Republican), six representatives from the Pennsylvania House of Representatives (three Democrat and three Republican) and three members from Governor Wolf's administration. (LR-00509-00008; Tr. at 1425-26.)

358. The BEF Commission issued its Report and Recommendations on June 18, 2015, after holding 15 hearings and hearing testimony from more than 110 individuals, including superintendents and academics. (LR-00509-00004; Tr. at 1426.)

359. The BEF formula in Act 35 contains two separate components: (1) the base amount, and (2) the student-weighted distribution. See 24 P.S. § 25-2502.53(b).

360. The base amount – commonly referred to as the “hold harmless provision”⁵² – is the amount of funding that each school district received in the 2014-15 fiscal year (2013-14 school year). Division Chief Hanft testified that it is his understanding that the purpose of the hold harmless base amount is to prevent large swings in state funding from occurring in school districts. (Hanft Dep. Vol. 2 at 59.)

*47 361. The hold harmless provision was the subject of considerable testimony before the BEF Commission. Several superintendents, particularly in small and rural school districts, testified in favor of the hold harmless provision, noting the potentially devastating impact that failing to

William Penn School District; Panther Valley School..., Not Reported in Atl....

include a hold harmless component could have on certain school districts. (LR-00509-00039–00040.)

362. The BEF Commission recognized in its deliberations that the hold harmless provision “prevents the entire annual appropriation for [BEF] to be distributed based on current school district or student factors,” but also found that “eliminating the hold harmless clause would have a significant negative impact on many school districts across the Commonwealth that would be unable to make operational adjustments or generate revenue from other sources to make up for the loss of basic education funding.” Accordingly, the BEF Commission recommended that a base amount be set as of the 2014-15 funding levels and that any new funding would not be subject to hold harmless. (LR-00509-00068.)

363. Other potential solutions were presented to the BEF Commission and included in its report, including redistributing “excess” funds or phasing out hold harmless over 10 years. (Tr. at 1555-57, 11777-78; LR-00509-00068.)

364. The student-weighted distribution – commonly referred to as the Fair Funding Formula – takes a three-year average ADM for each school district and adjusts that number into a weighted ADM by accounting for certain needs-based factors, including poverty, ELL students, charter school attendance, and sparsity size. (Hanft Dep. Vol. 3 at 26-28; LR-00509-00067; Tr. at 1771-76, 12141-42.) *See also* 24 P.S. § 25-2502.53. The Fair Funding Formula also addresses each district's unique needs by accounting for district-based factors, such as the district's wealth, current tax effort, and ability to raise revenue. 24 P.S. § 25-2502.53. (*See also* Tr. at 2378.)

365. Since the enactment of Act 35, the amount of BEF directed through the student-weighted formula has increased each year. (*See* PX-01909-0001; PX-01910-0001; PX-01911-0001; PX-01912-0001; PX-01913-0001; PX-04778-0001.)

366. The Department believes that its commitment to equity in education is advanced by Pennsylvania's Fair Funding Formula and that Act 35 “establishes a fair, equitable formula for allocating new state funds to Pennsylvania schools.” (Tr. at 2378.)

367. The ESSA Plan identifies Act 35 as “something that the Commonwealth is doing as a strategy for improving the root cause of fiscal inequity.” (Tr. at 2380.)

368. In 2021, an additional \$100 million in what is called “Level Up Funding” was allocated for the 100 lowest wealth school districts in the Commonwealth to address the inequities in education funding. (Tr. at 2483-84.)

369. Mr. Donley explained that to identify Level Up districts, the state examines how much each school district is spending relative to its combined needs, as identified through the weights in the Basic Education Fair Funding Formula and Special Education Fair Funding Formula. (Tr. at 11731.)

370. Level Up Funding is recurring and will become part of those school districts' base allocation after the 2021-22 fiscal year. (Tr. at 12139-40; *see also* Tr. at 1408-09, 11621-22; LR-01581.)

371. Other state education funding allocations in the 2021-22 budget included, for example:

- a. \$288 million to the Ready-to-Learn Block Grant,
- *48 b. \$242 million for the Pre-K Counts Program,
- c. \$69.178 million for the Head Start Supplemental Assistance,
- d. \$99 million for CTE,
- e. \$201 million in authority Rentals and Sinking Fund Requirements, through which the Commonwealth participates in school construction projects with districts through the PlanCon Program,
- f. \$336.5 million for Early Intervention,
- g. \$1.236 billion for Special Education, and
- h. \$2.7 billion for the School Employees' Retirement.

(Tr. at 11631-36; LR-01548.)

372. Charter schools do not receive direct state or local funding. Rather, school districts receive funding based upon their ADM, which includes all the students a district is fiscally

William Penn School District; Panther Valley School..., Not Reported in Atl....

responsible for, regardless of whether they attend a district-run school or a charter school. (Tr. at 14468-70.)

373. Charter schools then receive “pass-through revenue” from the districts in which their students reside, most of which is based on a statutory funding formula with different tuition rates for general education and special education students. See Section 1725-A of the Charter School Law, 24 P.S. § 17-1725-A.⁵³ (See also Tr. at 10248-49, 10253, 14472-73.) School districts have no discretion over that calculation. (Tr. at 10249.)

374. The tuition a school district pays to a charter school for each general education student is calculated by taking a school district's total expenditures and dividing by the district's ADM. See 24 P.S. § 17-1725-A(a)(2).

375. That tuition rate, however, does not include sources of revenue that charter schools are directly eligible for, such as federal funding, in order to avoid double compensating charter schools. (Tr. at 10253.) Nor does it include expenses for services that school districts already provide on behalf of charter schools, such as transportation expenses. (Tr. at 10255-56.)

376. Tuition for a special education student attending a charter school is calculated by taking the school district's expenditures for special education and dividing it by 16% of the school district's ADM. (Tr. at 10260-61.)

3. Local Funding

377. In addition to state appropriations, the General Assembly has enacted a number of statutes that have enabled local school districts to impose taxes in order to fund their public schools. (Tr. at 11616-17.) These statutes are divided based on the different district sizes. (Tr. at 11618.)

378. In addition to property taxes, local school districts are authorized to impose other types of local taxes, such as earned income taxes and per capita taxes. (Tr. at 11619-20.)

379. Pennsylvania school districts are heavily reliant on local tax funds, the impact of which is discussed more fully below.

4. Local School District Budgeting

380. The above funding sources comprise each district's General Fund Budget. Eric Kocsis, Greater Johnstown's former Business Manager, and Matthew Przywara, Lancaster's Chief of Finance and Operations, explained that the General Fund Budget is a public planning document for a school district, passed in June each year, describing at a high level, the line items where a district must spend its resources, for instruction to support services, and what it expects to receive in revenue from federal, state, and local sources. (Tr. at 3924, 3954-55, 3957-59, 3965, 5667-72.)

*49 381. School district budgets are projections as they must be passed before the state budget itself has been passed. Thus, school districts must enact a budget without knowing how much funding they will receive from the state. (Tr. at 3955-57.) Nor is that state funding amount predictable. While BEF has typically increased in past years, this is not always the case: the state flat-funded education in one instance, cut funding in another, and at one point failed to pass a budget for a number of months. (Tr. at 3571, 5672, 10185.)

382. School districts approach the projection of funds in their General Fund Budgets using different strategies. For example, in Greater Johnstown, Mr. Kocsis explained the district projects state funding based upon the estimates provided by the Pennsylvania Association of School Business Officials. (Tr. at 3957.) In Lancaster, Mr. Przywara explained the district assumes, first, that reimbursement-based state funds such as retirement reimbursements will increase, but that the state will otherwise flat-fund schools. (Tr. at 5670-71.) Second, Lancaster builds in some elevated spending through use of its fund balance. (Tr. at 5672-74.) Mr. Przywara testified that if the state ultimately increases funding that year, Lancaster uses the increase to fill this deficit, and then builds the state funding into its baseline spending the following year. (Tr. at 5675-76.)

383. Because budgets are projections, there will inevitably be differences between the amounts budgeted and what actually occurred in any given year.

William Penn School District; Panther Valley School..., Not Reported in Atl....

384. Likewise, there are unplanned expenses, revenues, or savings, that a district may incur. (Tr. at 4008-09, 5751-53, 7496.)

385. These variances are accounted for in Annual Financial Reports (AFR), which, Mr. Kocsis explained, are backwards-looking documents that detail what a district actually spent in the previous fiscal year. (Tr. at 3930.) According to Mr. Przywara, AFRs are published months after a fiscal year ends. (Tr. at 5739-40.) For example, the AFRs for the 2019-20 school year, which ended June 30, 2020, were not submitted by school districts until late 2020. (*See, e.g.*, PX-04530 (Lancaster 2019-20 AFR, dated Dec. 8, 2020).)

386. Practically speaking, this timing also injects a measure of uncertainty into the district budgeting process. Mr. Kocsis and Mr. Przywara explained that AFRs identify how a district's actual spending related to its projected spending, but school districts actually pass budgets for the year ahead without knowing precisely how much they spent or received in the year prior. (*See* Tr. at 4085-87, 5915-16.)

387. In addition, Mr. Monson, SDP's CFO, testified that when reporting their finances, school districts have to follow rules set out by the Government Accounting Standards Board (GASB). (Tr. at 10269-71.) As a result, AFRs have to list a variety of funds and fund balances that are on their balance sheets as a matter of GASB rules, but which are not actually available for the education of school districts. (Tr. at 10269-71.) By way of example, this includes previous debt payments that stay on balance sheets for years after payments are made, funds held as fiduciaries for student organizations, and booking the value of bond refinances as both revenues and expenditures. (Tr. at 3948-50, 5763-67, 6987-88, 10269-71.)

388. GASB standards technically show each school district in severe deficit because those standards also require districts to book the value of outstanding pension liabilities. (*See, e.g.*, PX-04530-0164 (Lancaster 2019-20 AFR) (listing \$505 million in debts, including \$293 million in pension debts); PX-04454-0128 (William Penn 2018-19 AFR) (listing \$204 million in debts, including \$123 million in pension debts).)

*50 389. Mr. Kocsis, former business manager at Greater Johnstown, and Jane Harbert, former superintendent of William Penn School District, explained there is only one line

of funds practically available to districts for the education of their students: the "general fund," which is where the operating expenses of a district are located. (Tr. at 3931, 6989.)

390. Mr. Kocsis explained that one way school districts must manage their budgets is by maintaining a fund balance, defined as "the difference of district's assets minus its liabilities." (Tr. at 3937.) The assets in a general fund can include "cash and cash equivalents, investments, [] receivables ... , inventories, [and] prepaid expenses." (Tr. at 3932-33.) And the liabilities can include "accounts payable, accrued salaries and benefits at that year end, payroll reductions and withholdings, [and] any unearned revenues." (Tr. at 3936.)

391. Mr. Donley agreed that maintaining fund balances are a sound fiscal practice for any organization. (Tr. at 11749.) He testified that the General Assembly effectively has its own fund balance that would allow it to function for approximately four months without additional funding. (Tr. at 11751.)

392. Mr. Kocsis and Mr. Przywara testified that within a district's general fund balance, there are non-spendable funds (often inventory), (*see* Tr. at 3937, 5745); restricted funds (restricted by an outside party or by law), (*see* Tr. at 3937); committed funds (committed by a school board for specific future uses), (*see* Tr. at 5746); assigned funds (assigned for use for a specific purpose, such as roof and boiler repairs), (*see* Tr. at 3938, 5749-50); and unassigned fund balances, which are those available for general use in future years, (Tr. at 3939.)

393. Mr. Przywara explained that pursuant to best practices and years of historical trends, school districts should have at least 60 to 90 days' worth of an unassigned fund balance at all times. (Tr. at 5760.) The state, however, sets a cap on fund balances that is significantly lower, between 8-12% depending on total budgeted expenditures, and if an unassigned fund balance is higher than that percentage, a district may not raise its taxes during the next fiscal year. *See* Section 688 of the School Code, 24 P.S. § 6-688.⁵⁴ Mr. Przywara explained that this limitation is divorced from sound fiscal practices and was instead an arbitrary number picked by the Commonwealth. (Tr. at 5761.) In fact, Mr.

William Penn School District; Panther Valley School..., Not Reported in Atl....

Monson testified that rating agencies consider it a risk when a district has a fund balance of less than 10%. (Tr. at 10188.)

394. Mr. Kocsis testified that one important use of a fund balance is to allow a district to pay its employees and vendors while awaiting “receivables,” which is “money due to the district, but not received by the district.” (Tr. at 3933-34.)

395. For instance, as of the date of Mr. Przywara's testimony, Lancaster was owed \$13.5 million dollars in state reimbursements for payments made pursuant to ESSER funding that the district used to, among other things, improve ventilation in its schools. (Tr. at 5753-55.) Because the district could not wait until it received the reimbursement to make the repairs, the district used its fund balance. (Tr. at 5753-55.)

396. Other times, school districts have had to use fund balances to stay afloat when the Commonwealth indefinitely delays enacting a budget, as happened for nearly a year in the 2015-16 school year. (Tr. at 3934-35, 5755-57.)

*51 397. Once a fund balance runs out in such a situation, Mr. Przywara testified that one way for school districts to continue operations is to take out tax anticipation loans, thereby incurring interest costs. (Tr. at 5756-57.) Indeed, in SDP, where there was no fund balance to turn to during a budget impasse, Mr. Monson testified the district was forced to “borrow[] several hundred million dollars just to maintain operations.” (Tr. at 10185.) Mr. Donley admitted that the Commonwealth's failure to pass a budget forced school districts to borrow \$1 billion in funds to stay afloat, taking on tens of millions of dollars in interest payments. (Tr. at 11751-52.)

398. In other instances, districts need to use fund balances to make capital improvements, planned or unplanned, or to handle other unforeseen expenses. In Lancaster, for instance, Mr. Przywara testified that fund balances have been used to pay for autistic support classrooms that unexpectedly needed to be opened and to make emergency repairs and purchases after a flood. (Tr. at 5751-53.)

F. Fact Witnesses

1. State Board and Department witnesses

399. Executive Director Molchanow of the State Board, and former Deputy Secretary Stem, Deputy Secretary Campanini, former Secretary Ortega, and Division Chief Hanft, all of the Department, testified at trial. In addition, the parties designated certain portions of their depositions, which were admitted into evidence. Their testimony is largely set forth in the above findings about the Board and Department, the system of public education, generally, the state's Master Plan, ESSA Plan, and academic standards, and the various types of assessments. Only those findings that are not repetitive of the above are set forth in this section.

400. Former Deputy Secretary Stem and Deputy Secretary Campanini acknowledge early childhood education, including high-quality preschool or pre-K, is an important tool for improving K-12 attainment and achievement. (Tr. at 1876, 4740; PX-00035-0006.)

401. Deputy Secretary Campanini testified that high-quality early learning is particularly important for children living in poverty. (Tr. at 4732.) She explained a high-quality early childhood educational program is one that utilizes the Commonwealth's early learning standards and implements those standards in its curriculum, utilizes qualified staff with ongoing professional development, and actively supports community and family engagement. (Tr. at 4770.)

402. According to Deputy Secretary Campanini, high-quality early childhood education is among the most beneficial, cost-effective investments in the Commonwealth's future because it prepares children for school and life success. (Tr. at 4763-64; PX-00073-0003.)

403. She testified that children who have access to high-quality early childhood education are more likely to enter kindergarten with the necessary skills to succeed, more likely to do well in school, graduate and attend college or career training, more likely to be employed, and less likely to require costly special education and remediation services. (Tr. at 4763-64; PX-00073-0003.)

404. Deputy Secretary Campanini testified the value and impact of quality early education is especially important for vulnerable children across the Commonwealth because it helps mitigate the impact of adverse childhood experiences, such as living in poverty, mental health challenges, and lack

William Penn School District; Panther Valley School..., Not Reported in Atl....

of nutrition, on young children. (Tr. at 4736-37, 4763-64; PX-00073-0003.)

405. Former Deputy Secretary Stem added that early childhood education prepares students for pivotal transformations in learning, such as the transition in third grade when students move from “learning to read” to “reading to learn.” (Tr. at 1700.)

*52 406. Deputy Secretary Campanini further testified that there are barriers to access to high quality preschool programs for economically-disadvantaged students, such as lack of availability of high-quality programs, and insufficient slots in Pennsylvania's Pre-K Counts program. (Tr. at 4766-68.) Currently, the Department estimates that the program is serving only 40% of eligible students. (Tr. at 4769-70; *see also* PX-00035-0006 (State Board's Master Plan for Basic Education) (noting importance of increasing access to pre-K).)

407. The Department recognizes that expanding high-quality preschool opportunities in Pennsylvania will help decrease the achievement gap for economically-disadvantaged children, and that it is the responsibility of the Commonwealth to address the unmet need for high quality early education. (Tr. at 4747-48, 4904-05.)

408. Former Deputy Secretary Stem testified that in order to increase student success in school, districts also need to have sufficient numbers of qualified, effective teachers, and stability in the teaching force. (Tr. at 1896, 1902, 1907-08; Stem Dep. Vol. 2 at 386.)

409. Former Deputy Secretary Stem testified that, especially for students living in poverty, this means having enough teachers to provide small group and individual instruction to all the students who need it. (Tr. at 1902.) Former Deputy Secretary Stem also acknowledged that hiring a sufficient number of teachers “cost[s] money,” and that low-wealth districts often do not have enough educators to provide this individualized instruction, which contributes to achievement gaps. (Tr. at 1907-08.)

410. Former Deputy Secretary Stem testified that, in order to be effective, teachers need to “have access to ongoing professional development[.]” (Tr. at 1907.)

411. According to former Deputy Secretary Stem, the large amount of teacher vacancies has adverse consequences on student learning. (Stem Dep. Vol. 2 at 420.)

412. Former Deputy Secretary Stem agrees that academic support for students, including small group instruction, tutoring programs, and reading⁵⁵ and math specialists,⁵⁶ improve student achievement and educational outcomes. (*See* Tr. at 1876-78, 1902.) According to former Deputy Secretary Stem, these supports are especially important in the early formative years from kindergarten to third grade, since those years set the foundation for what students experience in the rest of their careers. (Tr. at 1876-77.) The Department believes that small group and individual instruction are also among the strategies that can have the greatest impact for students in poverty. (Tr. at 1902.)

*53 413. The ESSA Plan identifies MTSS and PBIS as two of the Commonwealth's foundational strategies to address non-academic barriers to academic success. (PX-01830.) “MTSS practices include: [d]elivery of standards-based instruction and differentiated learning opportunities to meet the needs of all students; [a]ggregation and analysis of multiple data points to support informed decisions regarding curriculum, instruction, and assessment; and [i]mplementation of a tiered system of support to differentiate programmatic interventions for all students.” (PX-01830-0075.) “PBIS is a proactive, data-informed approach to managing discipline that promotes appropriate student behavior and increased learning,” and is based on a three-tiered framework. (PX-01830-0075.)

414. According to the ESSA Plan, “Tier one is a system of universal preventative practices and supports for all students across all school settings that emphasizes teaching and reinforcing expected student behaviors.” (PX-01830-0075.) “Tier two provides targeted, small group interventions for students classified as ‘at-risk,’ who require additional support beyond that which is typically provided for all learners through tier one practices.” (PX-01830-0075.) “Tier three provides the most intensive level of interventions that are administered individually for students with the most significant behavioral/emotional support needs.” (PX-01830-0075.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

415. Former Deputy Secretary Stem described MTSS, which recognizes that some students are going to have greater needs than others and identifies who those students are, so that the school district can remediate accordingly, creating the conditions for students at all levels to be successful. (Tr. at 1879.) Former Deputy Secretary Stem testified that MTSS is “a really critically important strategy at all grade levels, but especially for the elementary years” that establish “the foundation for future learning.” (Tr. at 1881.)

416. Former Deputy Secretary Stem explained how MTSS works, using reading as an example: through a universal screening program, school districts assess their students, and assign them into three tiers. (Tr. at 1881-82.) Typically, general instruction — the teacher at the front of the classroom — is sufficient for 70-80% of students, who are classified as Tier 1. (Tr. at 1878-80, 1883, 1885-86, 1934-35.) The next group of students, Tier 2, are experiencing some lag in their learning and require additional intervention to master the content, usually in small groups at specified times. (Tr. at 1880, 1882.) Generally, 10-20% of students require Tier 2 support. (Tr. at 1883, 1934-35.) Finally, the children who have fallen furthest behind and need intensive interventions, usually one-on-one tutoring, are classified as Tier 3. (Tr. at 1881-82.) Generally, Tier 3 students should make up no more than 5-10% of the student population. (Tr. at 1883, 1934-35.) Together, Superintendents Dr. Amy Arcurio of Greater Johnstown and David McAndrew, Jr., of Panther Valley credibly described how the tiers should form a triangle, with Tier 1 as the base and Tier 3 as the tip. (Tr. at 317-18, 2614-17.)

417. Former Deputy Secretary Stem testified the strategies and supports reviewed, approved, and recommended by the Department are contained both in the ESSA Plan and in Pennsylvania's Evidence Resource Center. (Tr. at 1892-94, 2090-91.)

418. He further testified that the Department researches, develops, and promotes these evidence-based strategies and supports to aid school districts in serving the diverse needs of students and to overcome social and emotional barriers to learning so that all students have the ability to become college and career ready. (Tr. at 1889-95.) These strategies are designed to help close the achievement gaps that exist among student subgroups. (Tr. at 1793-94.)

*54 419. Former Deputy Secretary Stem explained that the term “college and career ready” is a single, inseparable goal:

College and career ready go hand in hand, and ... that's not only the vision of the Department, but also what we've heard ... for years in stakeholder engagement. ... [T]hat ... our students need to be prepared for the various types of opportunities that they're going to see in a changing economy, changing workforce; that they need to be able to be prepared for postsecondary education and the workforce and be able to nimbly have the skills to be able to transition accordingly.

I think even in our career and technical education programs, we elevated postsecondary pathways even for students that were receiving an industry credential in, you know, welding or a related field. We would still work to create the pathways for postsecondary — further postsecondary education.

(Tr. at 1611-12.)

420. Former Deputy Secretary Stem testified that sports and extracurricular activities help students “develop leadership skills, collaboration skills, persistence skills, and resiliency.” (Tr. at 1901-02.)

421. Former Deputy Secretary Stem testified that addressing students' social, emotional, and psychological needs is vital to their success. (Tr. at 1889-90.) He explained that social and emotional skills such as resilience and being able to handle frustration are increasingly considered “career ready skills that employers are looking for.” (Tr. at 1891-92.) Conversely, unmet emotional needs create barriers to learning. (Tr. at 1890.)

422. Accordingly, the Department has identified social and emotional support as a strategy for increasing student success in school and has advocated for schools to develop systems for identifying areas where students are “emotionally struggling with engaging with content and in interacting with peers,” and adapting instruction to address those needs. (Tr. at 1889-90.)

423. Former Deputy Secretary Stem explained that social and emotional learning can include “programs to teach pro-social behaviors and things like collaboration, things

William Penn School District; Panther Valley School..., Not Reported in Atl....

like communicating, things like appropriate ways to handle frustration in a classroom and in other areas” and then “intervening when students are struggling to demonstrate” these behaviors. (Tr. at 1890-91.) It can also address issues such as trauma and bullying. (Tr. at 1894-95.) Social and emotional interventions can be provided “with school personnel, like social workers or counselors” or through “community partners that come in and work with ... students in smaller groups or in an individual setting.” (Tr. at 1892.)

424. Former Deputy Secretary Stem further testified that it is important for schools that serve low-income students to have adequate numbers of counselors, where each student often requires more support. (Tr. at 1896-97.)

425. Moreover, according to former Deputy Secretary Stem, effective building and district administrations are a strategy to increase student success in school. (Tr. at 1906-07.)

426. Additionally, former Deputy Secretary Stem testified that librarians are an important source of learning support. (Tr. at 1897.)

*55 427. Another strategy that the Department has identified to increase student success in school, former Deputy Secretary Stem testified, is interventions to address absenteeism and attendance problems. (Tr. at 1898.)

428. Former Deputy Secretary Stem and Executive Director Molchanow testified that a robust curriculum that is aligned to state standards is one of the conditions for successful schools. (See Tr. at 1907-08, 4263.)

429. The Department has also recognized the importance of providing rigorous courses such as AP, IB, and college-level courses. (PX-01830-0100; Tr. at 1897.) Former Deputy Secretary Stem testified that students need adequate support to take advantage of these kinds of opportunities. (Tr. at 1897-98.)

430. Another strategy identified by former Deputy Secretary Stem as helping students become college and career ready are “facilities conducive to learning.” (Tr. at 1905-07.) The State Board believes that “school buildings and facilities will remain the hub of learning in our communities. Therefore, such facilities should be maintained and constructed so as to provide a safe healthy and orderly environment

that is conducive to a positive learning experience every day.” (PX-00035-0009.)

431. Former Deputy Secretary Stem testified there are districts in Pennsylvania, especially lower-wealth districts, that face serious safety concerns related to exposed asbestos and lead in school buildings. (Tr. at 1953-54; *see also* PX-07016-0014; Stem Dep. Vol. 2 at 449-52, 455.) Moreover, former Deputy Secretary Stem has pointed out that “existing funding sources are not sufficient to remediate those types of issues.” (Stem Dep. Vol. 2 at 455.)

432. Former Deputy Secretary Stem identified poor air quality and ventilation and inadequate classroom space as other facility problems that impact student learning. (Tr. at 2015.) Former Secretary Ortega testified that the inadequate conditions in these school buildings are “connected to inequities that exist because of the way the funds are made available to our schools.” (Tr. at 8859; PX-07016-0044.)

433. Former Deputy Secretary Stem testified that the Department believes student grades are important and helpful indicators of whether a student is succeeding in their education. (Tr. at 2285.)

434. Former Deputy Secretary Stem described some of the services and programs the Department provides districts including the Department-run SAS. SAS provides support such as curriculum and professional development resources for teachers and administrators and is “one of the primary mechanisms” that the Department uses “to provide technical support and assistance to schools.” (Tr. at 2055.) The Department's Division of Instructional Quality also “provides guidance, materials[,] and resources to educators regarding curriculum, instruction, assessment[,] and regulations passed by the [] State Board ... related to these various areas.” (Tr. at 2068; LR-04200-00001.)

435. SAS also includes sections that are for teachers, specifically. These sections are designed to help teachers with organizing their lessons and assessments, find professional development programs, and connect with other educators in the state. (Tr. at 2087-88.)

*56 436. Within its Assessment Center, SAS provides teachers with tools or training modules regarding the process

William Penn School District; Panther Valley School..., Not Reported in Atl....

of creating and providing assessments to students. (Tr. at 2063-64; LR-04206.)

437. One section of SAS is “Curriculum Frameworks,” which provides resources to assist districts with developing curricula that are aligned to Pennsylvania's academic standards. (Tr. at 2066, 2070-71; *see also* LR-04200; LR-00597.)

438. Curriculum Frameworks identify “the concepts and competencies that are in the standards in a format that would help districts to be able to build out a curriculum and ... daily lesson plans.” (Tr. at 2071.) Through SAS, the Department also provides curriculum maps and modeled curriculum, which, while similar in purpose to Curriculum Frameworks, provide more detail in ELA, math, and science. (Tr. at 2072-73, 2084-85.)

439. If school districts choose to use Curriculum Frameworks to map out their instruction, the Department has some personnel available to assist them. (Tr. at 2073.)

440. The Instruction area in SAS provides additional resources and links to third-party resources and additional supports regarding teaching and learning. (Tr. at 2074-75; LR-04203.) The Instruction area, for example, includes a Pennsylvania educational roadmap that addresses topics such as a student-centered learning environment and systems conditions and provides additional resources to assist districts with planning for and delivering instruction to students. (Tr. at 2075.)

441. SAS also includes instructional toolkits that are designed to help districts set up advanced coursework activities, such as dual enrollment programs, AP and IB programs, independent study programs, and work-based learning experiences. (Tr. at 2078-79; LR-04203.) The Department assists districts with implementing these tool kits. (Tr. at 2081.)

442. The Materials and Resources section of SAS contains even more resources to assist schools with curriculum development and assessments, including sample unit plans, lesson plans, and assessments. (Tr. at 2082-84; LR-04203.)

443. For example, the work-based learning tool kit includes information about research on the value of work-based learning, different types of work-based learning experiences, how to set up those experiences, the costs that are involved

with them, and districts that have work-based learning programs in place. (Tr. at 2080-81; LR-00663.)

444. SAS also includes the learning progressions resource, which shows the way that, from one grade level in school to the next, content, skills, and competencies transition and become more sophisticated. (Tr. at 2085-86.)

445. Within the SAS portal, the Safe and Supportive Schools section includes resources concerning social/emotional learning, trauma, and informed instruction and practices, including a link to some of the “all-hazard” planning resources for safe schools. (Tr. at 2087.)

446. Former Deputy Secretary Stem testified about AGI related to PVAAS growth scores. According to former Deputy Secretary Stem, because standard error serves as the denominator for calculating AGI, large districts can have much more positive or negative AGI scores than smaller districts, even if their actual growth scores are identical. (Tr. at 1972-74.) The Department cautions about this very phenomenon. (Tr. at 1972-74 (discussing PX-02120).) The scores of SDP, which is Pennsylvania's largest district, illustrate this distortion. (Tr. at 1979-86; PX-04921.) Former Deputy Secretary Stem explained SDP and Johnsonburg Area School District (Johnsonburg), which is a small district, had an identical growth score of 1.3 for PSSA math in the 2018-19 school year. (Tr. at 1981, 1987; PX-04921-0020.) Yet because those districts are very different sizes and, therefore, have different standard errors, SDP's AGI was 24.65, while Johnsonburg's was 1.73. (Tr. at 1987-88; PX-04921-0020.) Former Deputy Secretary Stem testified that SDP's students did not grow 15 times more than Johnsonburg's students in 2018-19. (Tr. at 1988.) The difference, instead, he said, is that there is simply more “statistical confidence” that the 1.3 growth score in SDP is indicative of actual growth than Johnsonburg's 1.3 growth score. (Tr. at 1988, 1971-72.)

*57 447. Former Deputy Secretary Stem also explained that a district can have a larger growth measure than another but end up with a lower AGI score. (Tr. at 1982.) By way of example, for 2018-19 PSSA math, Chambersburg Area School District's (Chambersburg) growth measure was 2.0, which was greater than SDP's, but had an AGI of 10.52, which was less than half of SDP's. (Tr. at 1981-82; PX-04921-0001.) Former Deputy Secretary Stem agreed that the difference in AGI scores between the districts did not mean that SDP's

William Penn School District; Panther Valley School..., Not Reported in Atl....

students grew two and a half times more than Chambersburg's students. (Tr. at 1984-85.)

448. According to former Deputy Secretary Stem, AGI represents the “confidence by which a group of students has met or not met a growth standard.” (Tr. at 1964.) AGI may, therefore, establish confidence in the “directionality” of growth, but it does not establish the level of growth. (Tr. at 1990-91.)

449. Former Deputy Secretary Stem cautioned that relative AGI scores cannot be used to rank school districts, or to make mathematical claims about their difference in growth. (Tr. at 1990, 1994-95.)

450. The Department differentiates between student “achievement” and student “growth.” As the Department explains, achievement is a snapshot of a student's performance at a single point in time, whereas growth demonstrates a student's relative performance against themselves (and is then aggregated into a larger group). Achievement measures refer to the PSSAs and Keystone Exams; growth measures refer to PVAAS scores. (LR-04192-00004; Tr. at 2262-63.)

451. Both achievement and growth are important in measuring student and school performance: “By measuring students’ academic achievement AND growth, schools and districts have a more comprehensive picture of their own effectiveness in raising student achievement.” (PX-02118-0004.)

452. The Department “does not believe that PVAAS is a better measure of the impact of a school on a student. The Department believes that coupling achievement with growth ... the two together are the measure for a school.” (Tr. at 2270-71.)

453. The Department measures the impact of school on students using both achievement data and PVAAS measures. (Tr. at 2273-74.)

454. Department witnesses testified the COVID pandemic had a negative effect on education, especially in low-wealth districts. As former Secretary Ortega acknowledged, “[i]f the pandemic has taught us anything, it's that folks have been disproportionately affected. And, in many ways ... ,

this is a large part to do with resources available at the institutions.” (Tr. at 8856; PX-07016-0011.) Former Deputy Secretary Stem also testified “[t]he pandemic shed greater light on historic disparities and heightened the urgency for a sustainable solution.” (Tr. at 2014.)

455. Former Deputy Secretary Stem explained that when schools went to remote learning in March 2020, the Department “saw a disproportionate number of low-wealth schools that struggled to meet the technology needs, not only as a district, but also of having technology that students could bring to their homes to engage in remote learning.” (Tr. at 2014-15.)

456. Former Deputy Secretary Stem explained, when districts started making plans to return to in-person learning, the Department tried “to encourage schools to keep students apart [and] make sure that they had air filtration systems,” but low-wealth school districts like Petitioners Districts and SDP struggled with “the need for air quality [and] the need for space.” (Tr. 2014-15.)

457. The Department witnesses also testified about education funding in the state's budget. Specifically, former Secretary Ortega testified that prior to the adoption of the budget for the 2021-22 fiscal year, the Commonwealth increased BEF by \$800 million, special education by \$140 million, and CTE by \$40 million during the six prior years. (Tr. at 8825.) In addition to the \$300 million increase in BEF, former Secretary Ortega testified that the 2021-22 budget included the following increases: \$50 million for special education, \$30 million for early education; \$20 million for Ready-to-Learn Block Grants, and \$11 million for preschool early intervention. (Tr. at 8834-35.)

*58 458. Deputy Secretary Campanini testified that from 2015 to 2019, Pennsylvania's funding of pre-K programs increased by \$145 million. During that period, Pennsylvania's funding for pre-K programs more than doubled overall. (Tr. at 4912.) She further testified that, for each year since 2015, Pennsylvania has allocated more state funding to Pre-K Counts and Head Start Supplemental Assistance than it did in the prior year. (Tr. at 4955.) In the 2016-17 school year, the Commonwealth's budget for Pre-K Counts was approximately \$147 million and the budget for Head Start Supplemental Assistance was approximately \$49 million. As of December 2021, the Commonwealth's budget for Pre-K

William Penn School District; Panther Valley School..., Not Reported in Atl....

Counts was approximately \$242 million and the budget for Head Start Supplemental Assistance was \$69 million. (Tr. at 5000-01.)

459. Former Secretary Ortega testified that the Department would like to see even more increased funding for education but acknowledged that “it’s probably true” that every state agency would likely say they want to see better funding for their particular area. (Tr. at 8824.)

460. The Court finds each of these witnesses extremely knowledgeable of the subject areas in which they testified and, therefore, credits their testimony.

2. David Donley

461. Mr. Donley testified in Legislative Respondents’ case-in-chief. He testified that, in his role as Republican Staff Executive Director for the Pennsylvania House Appropriations Committee, he oversees a budget writing committee and reviews bills that pass through the House of Representatives to cost out fiscal notes. (Tr. at 11572-73.) Additionally, from 1995 through 2012, when he assumed his current position, Mr. Donley worked in the Pennsylvania Governor’s Budget Office, during which time he worked under multiple gubernatorial administrations. (Tr. at 11575-76.)

462. Mr. Donley testified regarding a variety of budget-related topics, including Pennsylvania’s annual budget process; state and local appropriations for public education as authorized by the General Assembly; and other items funded through Pennsylvania’s budget, aside from pre-K-12 education. Mr. Donley also testified regarding other recent laws enacted by the Pennsylvania General Assembly, which pass through the House Appropriations Committee. (*See generally* Tr. at 11572-789.) The Court finds Mr. Donley extremely knowledgeable of the subject areas in which he testified and, therefore, credible.

463. The Commonwealth’s fiscal year runs from July 1 through June 30 of the following year. (Tr. at 11585.)

464. The Commonwealth’s annual budget process typically begins in the August preceding the fiscal year, during which

the Governor’s Budget Office issues budget instructions to the agencies. (Tr. at 11586.) In response, the agencies, led by each agency’s fiscal director, submit budget requests to the Governor’s Budget Office for review and consideration. (Tr. at 11586.) The Governor’s Budget Office then reviews all of the agencies’ requests, compiles its proposed executive budget for the upcoming fiscal year, and presents this proposed budget to the General Assembly and public. (Tr. at 11585-86.)

465. After the Governor’s proposed executive budget is published, the Commonwealth’s House and Senate Appropriations Committees conduct a series of public hearings, during which the Governor’s cabinet members testify with regard to the Governor’s proposed executive budget. (Tr. at 11585, 11587.)

466. These hearings also serve as an opportunity for various House and Senate Appropriations Committee members to voice their opinions on the proposed budget. (Tr. at 11587-88.) Additionally, members of the public can voice their opinions regarding various line items in the proposed budget, including the public education budget. (Tr. at 11588.)

*59 467. After these budget hearings, and once there is a better understanding of the Commonwealth’s revenue from corporate and personal income taxes for the year, budget negotiations ensue, with the hope of having a finalized budget in place before the start of the fiscal year on July 1. (Tr. at 11588-89.)

468. The House Appropriations Committee has not conducted any study to determine whether the annual line-item appropriations for public education are sufficient to allow students to meet the state’s academic standards or to examine individual districts or the individual needs of districts. (Tr. at 11718-19, 11722, 11724-25.)

469. On occasion, the Governor and the General Assembly are unable to agree upon a final budget by the start of the fiscal year. For instance, the 2015-16 budget enacted by the General Assembly was vetoed by Governor Wolf, and a final budget was not in place until March 2016. However, in more recent years, the budget negotiations have been successful, and the Governor has signed the final budget that has been passed by the General Assembly. (Tr. at 11589-90.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

470. Mr. Donley testified that between the 2014-15 and 2021-22 school years, the Commonwealth increased its total budget of spending on public education by over \$3.325 billion, or roughly 31.36%. (Tr. at 11658.)

3. Greater Johnstown

471. Petitioners presented the testimony of Dr. Arcurio, Stephanie Kobal, and Mr. Kocsis. Dr. Arcurio is the Superintendent at Greater Johnstown and has held that position since November 2018. (Tr. at 2541.) Ms. Kobal is a first-grade teacher at Johnstown Elementary School. She has been teaching at Greater Johnstown for 25 years. During her tenure at Greater Johnstown, she has held jobs as a Title I instructor, a kindergarten teacher, a third-grade teacher, and an intervention coordinator. (Tr. at 3293-95.) Mr. Kocsis is the former business manager of Greater Johnstown. He held that position from November 2016 to June 2020. He is currently the business manager and board secretary at Ligonier Valley School District. (Tr. at 3902-03.) The Court credits the testimony of each of these witnesses.

472. In the 2020-21 school year, Greater Johnstown had 2,881 students. (LR-05007A-00005.)

473. For the 2019-20 school year, 85.75% of Greater Johnstown students were classified as economically disadvantaged; 0.99% of them were classified as ELL; and 18.54% of them were classified as special education. (Tr. at 2580-83, 2585-86; PX-04807.) The percentage of economically-disadvantaged students ranks Greater Johnstown the 11th highest district in the Commonwealth. (PX-04807.)

474. In the 2019-20 school year, Greater Johnstown's student body was 41.43% White, 4.8% Hispanic, 35.82% Black, and 0.24% Asian. (PX-04807.) Demographics for Greater Johnstown are as follows:

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displayable at this time.

(PX-04807.)

475. Greater Johnstown's student body is a transient population, and diagnostic tools like standardized tests do not account for variations that occur in the population as students move in and out of the district. In one recent school year, approximately 400 elementary school students moved into or out of Greater Johnstown. (Tr. at 3065, 3072.)

476. Greater Johnstown encompasses the City of Johnstown, which is ranked the poorest city in Pennsylvania. Johnstown's median household income is \$24,415.00, while the statewide median household income is \$53,599.00. (LR-00090-00085.)

*60 477. By median household income, Greater Johnstown is the poorest district in the entire Commonwealth. (PX-04828.) Using the Aid Ratio, Greater Johnstown does not fare much better, ranking 22nd poorest in the Commonwealth. (PX-04828.)

478. Dr. Arcurio explained the impact of poverty on students:

[O]ne of the things that we see immediately upon entry to our school system is just, you know, the lack of exposure to a literacy-rich environment. Students come to us and, because of poverty, they just — you know, they aren't surrounded with books.

And, you know, as — as we know, that lap time and that time for children to spend with stories before bed and during the day really just engages and lights the fire and the interest of being a reader. And so when our students come to us in kindergarten, we often have to, you know, start with very basics of the orientation of how to hold a book and how a book moves from the cover through the pages [un]til you get to the end of it. You know, students — students will often hold the book backwards or upside-down because they just haven't had that exposure and that experience.

(Tr. at 2581-82.)

479. The district taxes at a rate just above the state median and is the third highest in Cambria County. (PX-04828.) Mr. Kocsis testified that because the community is poor and blighted, when taxes increased, many property owners sought and received property reassessments lowering the values of their homes. (Tr. at 4000-02.) Thus, Greater Johnstown's

William Penn School District; Panther Valley School..., Not Reported in Atl....

efforts to raise funds had the opposite effect, and from 2017-18 to 2018-19 and from 2018-19 to 2019-20, local tax revenue decreased. (Tr. at 3994; PX-00150-0028 (2017-18); PX-00261-0026 (2018-19); PX-04513-0032 (2019-20).)

480. According to the Fair Funding Formula, Greater Johnstown has the 14th highest need student population in the Commonwealth. (PX-04828.)

481. Putting its need and wealth together, the district's local capacity per weighted student ranks 481 of 499 districts.⁵⁷

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(PX-04828.)

482. Using the Level Up formula, which combines both special education and general education need, Greater Johnstown spends less than 490 of the Commonwealth's districts. (PX-04778, Tab "Level Up Supplement," Column F; Tr. at 11733-34.)

483. When measured by Local Effort Capacity Index,⁵⁸ the Fair Funding Formula's measure of local effort, Greater Johnstown's effort ranks 72nd in the Commonwealth. (PX-04828.)

*61 484. Greater Johnstown ranks 495th in the Commonwealth in terms of expenditures per weighted student. (PX-04828.)

485. According to the Special Education Fair Funding Formula, Greater Johnstown has the 47th highest need special education population in the Commonwealth. (PX-04828.) As a result, it has had to add an autistic support classroom for each of the last six years. (Tr. at 2586.) Each autistic support classroom requires a teacher and three paraprofessionals and no more than eight students can be housed in each classroom. (Tr. at 2587-88.)

486. Dr. Arcurio testified the large special education population presents challenges:

So, you know, just meeting the needs of those students really requires specific resources in the ways of paraprofessionals, paraeducators and one teacher. And so that cohort group continues to move through our school district.

And the unique challenge is – for children who have the diagnosis of **autism** – is that they require additional spaces in your schools. So they need a sensory room where they can go when they need to, you know, wind down or decompress. And so as those students have gone through our school district, we have had to add those classrooms for – in our elementary, middle school and now in our high school.

(Tr. at 2587-88.)

487. According to Dr. Arcurio, while Greater Johnstown has “enough special education teachers to meet the bare requirement of what [the district has] to have [as] required by” the Department, the number of special education teachers is insufficient to “allow students to have the additional support, [] differentiation[s], [] accommodations, [and] modifications to the educational program that could initially, if given, support them in such a way that they could actually exit special education.” (Tr. at 2588-89.) Dr. Arcurio said that “special education becomes a sentence [Y]ou stay a special education student.” (Tr. at 2589.)

488. Between 2017 and 2020, Greater Johnstown increased its total employee workforce from 308 to 310, despite the closure of one of its schools and a decline in enrollment (from 3,054 to 2,940) during that time. (Tr. at 4130, 4123; LR-05007A-00005, -00008.)

489. As of 2019, Greater Johnstown employed 191 teachers, all of whom the district rated as satisfactory. (LR-05007A-00002.) Greater Johnstown meets the teacher-staffing requirements that the Department has established, including all of the requirements regarding special education teachers. (Tr. at 2588, 2592.)

490. As of 2021, the average Greater Johnstown classroom teacher had 15.4 years of teaching experience. The average teaching experience of Greater Johnstown's classroom teachers has increased over the last nine years. In the 2012-13

William Penn School District; Panther Valley School..., Not Reported in Atl....

school year, the average Greater Johnstown classroom teacher had 13.5 years of teaching experience. In the 2020-21 school year, Greater Johnstown's classroom teachers had the highest level of teaching experience that they have had over the past 9 years, except for the 2019-20 school year, when they likewise had an average of 15.4 years of teaching experience. (LR-05007A-00006.)

491. As of 2021, the average Greater Johnstown classroom teacher earned a salary of \$67,182.02. The average salary for Greater Johnstown's classroom teachers has increased over the last nine years. In the 2012-13 school year, the average Greater Johnstown classroom teacher earned a salary of \$61,040.82. In the 2020-21 school year, the average salary for Greater Johnstown's classroom teachers reached its highest level in the past nine years. (LR-05007A-00006.)

*62 492. In the 2019-20 school year, the salaries for full-time Greater Johnstown teachers ranged from \$49,997 to \$75,286. The top end of that teacher salary range is over three times higher than the median household income for Johnstown families. The upper end of the pay scale for Greater Johnstown administrators (including principals and business personnel) is \$136,000, more than five times as high as the median household income for families who live in Johnstown. (Tr. at 3042-43, 3045-48, 3049-50; PX-00155.) Dr. Arcurio explained that the majority of households in her community are not college graduates, as the teachers and administrators are. (Tr. at 3050.) Mr. Kocsis further explained that because teachers were “froze on the same step and scale,” that played a role in negotiations. (Tr. at 4163-64.)

493. At the time of her deposition in September 2019, Dr. Arcurio believed that Greater Johnstown offered the highest starting teacher salary of any school district in its IU, which is Appalachia IU-8 and includes all of the 35 school districts that are located in Cambria, Somerset, Bedford, and Blair Counties. (Tr. at 3045.)

494. Greater Johnstown compensates its teachers for assisting with extracurricular activities, which Mr. Kocsis explained “is typical” at the school districts for which he has worked. (Tr. at 4040, 4043-44.) For example, the district pays \$9,183 to the head football coach, \$5,984 to the high school band director, \$1,837 to the high school scholastic quiz team advisors, and \$500 to the elementary school Lego League Jr. coach. (Tr. at 4048-51; PX-04515-0029, 0031, 0032.) Mr. Kocsis explained

this is to compensate them for hours spent outside of normal school hours. (Tr. at 4049, 4050-51.)

495. Greater Johnstown provides its teachers with a comprehensive health insurance plan, including, for example, 100% coverage for the costs of retail and mail-order drugs after the deductible. For the 2021-22 school year, for each person who is covered by the plan, Greater Johnstown deposited 81% of the amount of the deductible into a Health Savings Account. The result is that teachers who have individual coverage are responsible for only \$285 in deductible payments each year. (Tr. at 4057, 4060, 4062; PX-04515-0033-0035.) Mr. Kocsis testified that changing to this high deductible plan resulted in major savings to the district by lowering its premiums between \$700,000 and \$900,000 annually. (Tr. at 4061-62.)

496. Greater Johnstown provides each of its teachers with life insurance coverage in the amount of \$65,000. (Tr. at 4067; PX-04515-0033, 0034.)

497. Greater Johnstown pays its teachers \$30 per hour to work on writing curriculum, which is in addition to their regular salary. (Tr. at 4039-40; PX-04515-0029.)

498. Greater Johnstown provides its teachers with all the teaching-related professional development opportunities that they are required to receive. (Tr. at 2721.)

499. Greater Johnstown trains all its teachers on PBIS, which is a program through which the district focuses on and reinforces its students' positive behaviors. As part of the program, students are given “Trojan bucks” for good behaviors, and they can redeem those “bucks” for prizes or special activities. (Tr. at 3360.)

500. Some of Greater Johnstown's teachers participate in the district's afterschool programs. The teachers who participate in the after-school Student Assistance Program, for example, receive compensation beyond their base salaries for doing so. (Tr. at 4040-41; PX-04515-0029.)

501. In order to cut costs, Greater Johnstown has not replaced teachers who retire. (Tr. at 3969, 3987.) Due to insufficient staffing, a high school teacher teaches French and Spanish simultaneously in one class period, where half the classroom

William Penn School District; Panther Valley School..., Not Reported in Atl....

is French 3 and 4 students and the other half is Spanish 3 and 4 students. (Tr. at 2716-17.)

*63 502. Due to insufficient funds, pre-K teachers were outsourced, teacher salaries were frozen in 2016-17, and starting teacher salaries were reduced by \$5,000. (Tr. at 2597, 2707, 2710, 4163.)

503. Greater Johnstown has two English as a Second-Language teachers to serve its ELL students. (Tr. at 3038, 3122; PX-04807.)

504. Greater Johnstown has two guidance counselors at the elementary school for 1,200 students. (Tr. at 2728, 2745-46.) At the middle school, Greater Johnstown was able to increase its counselors from one to two using ESSER funds. (Tr. at 2745-46.) Greater Johnstown has three counselors at its high school: one to assist the eighth and ninth graders “transition into the high school” and students involved in the district's dual enrollment program; a second to address the needs of upperclassmen; and a third to support students in the district's vocational learning pathway. (Tr. at 2746.) The third position is funded by a Perkins Grant. (Tr. at 2746.)

505. Greater Johnstown has 27 intervention specialists at its elementary school. (Tr. at 2572.)

506. Greater Johnstown has four behavioral interventionists at its elementary school, three at its middle school, and two at its high school, along with seven school counselors and school therapists at both the middle and high school. (Tr. at 2738, 2745-46, 3114-15.) The two behavioral interventionists at the high school are paid through ESSER funds. (Tr. at 2738-40.) The therapist at the high school is funded through grant dollars from the Pennsylvania Office of Victim Services, and the therapist at the middle school is funded through ESSER funds. There are no therapists at the elementary school. (Tr. at 2760-62.)

507. Greater Johnstown cannot afford to hire any licensed social workers. (Tr. at 2750-51.) It used grant dollars obtained through its Communities and Schools Program to bring in six non-licensed staff for its three buildings instead. (Tr. at 2750-55.) The positions are funded through a state grant, which was matched by a community foundation in Johnstown. (Tr. at 2752.)

508. Greater Johnstown has two reading specialists at its elementary school to serve approximately 1,200 students, which, according to Dr. Arcurio, does “not even com[e] close to making the impact that [is] need[ed].” (Tr. at 2620-21, 2729.) As a result, these reading specialists spend the majority of their time providing support to bigger groups of students rather than one-on-one intervention. (Tr. at 2729-30.) Greater Johnstown does not have any reading specialists at its middle school or high school. (Tr. at 2728.)

509. Greater Johnstown also does not employ any math intervention specialists at its elementary school. (Tr. at 2625-26.)

510. The lack of intervention support in a district like Greater Johnstown, which has a flipped MTSS triangle, means that students are not getting the supports they need to be successful. (Tr. at 3316-20.) In Greater Johnstown, 70% of students are often in Tiers 2 and 3. (PX-00165, PX-00168, PX-04824.) Ms. Kobal testified that out of 20 students in her reading group, all 20 of them require Tier 2 or 3 support. (Tr. at 3317.)

511. Greater Johnstown's elementary school has a librarian. (Tr. at 2666.) It splits a second librarian between the middle school and high school. (Tr. at 2683.) This librarian is also being used as the middle school's reading interventionist, so the middle school library is used, according to Dr. Arcurio, as “primarily[] a storage area.” (Tr. at 2681, 2683, PX-00296.)

*64 512. Greater Johnstown recently hired three reintegration specialists (truancy officers) for the reintegration of students after the remote learning that took place during the COVID pandemic. (Tr. at 3110-11.) They were hired using ESSER funds. (Tr. at 2753-54.)

513. Greater Johnstown has 53 paraprofessionals on its staff. While it also has openings for additional support personnel, it has been unable to fill those positions due to a lack of applicants at the pay the district can offer. (Tr. at 2743, 3087, 3107.)

514. Greater Johnstown more recently hired a resource officer (in essence, a police officer) for its elementary school. The middle and high schools already had resource officers. (Tr. at 3111-12.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

515. Greater Johnstown has two full-time psychologists and a psychologist who is compensated on a per-diem basis. (Tr. at 3112-13.) Greater Johnstown has an opening for a third full-time school psychologist, but it has been unable to fill the position. (Tr. at 3113.)

516. As of 2021, 98 out of 224 (or 43.8%) of Greater Johnstown's professionals (including teachers) have a master's degree or higher. (LR-05007A-00007.)

517. In the 2020–21 school year, Greater Johnstown had a student-classroom teacher ratio of 14.9-to-1 and a student-staff (reported personnel) ratio of 9.0-to-1. (LR-05007A-00009.)

518. Ms. Kobal testified that she believed the class sizes at the elementary were too big, as one third-grade class has 26 students, and a fourth-grade class has 27 students. (Tr. at 3322.)

519. Greater Johnstown caps the size of its high school classes at 30 students. (Tr. at 3091.)

520. Dr. Arcurio testified Greater Johnstown does not have sufficient textbooks for every student. (Tr. at 2794.) Instead, they utilize classroom sets, which means the textbooks have to remain in the classroom for all students to use. (Tr. at 2794.) As a result, teachers sometimes supplement with other written materials. (Tr. at 2794-95.) Greater Johnstown hopes to use some ESSER funds to replace its textbooks, but first must update its curriculum to align with state standards. (Tr. at 2795.)

521. Greater Johnstown does not have a curriculum writer. (Tr. at 2723-34.) Recently, using ESSER funds, it hired a director of education whose focus is to rewrite the district's curriculum for the first time since 2013. (Tr. at 2723-24.) Greater Johnstown also employs teaching staff to work after school and during the summer to support curriculum writing efforts. (Tr. at 2723-24, 2726.)

522. Dr. Arcurio explained:

[C]urriculum is not something that you write and then you put on a

shelf or you refer to it from time to time. For a curriculum to be effective, by design, it's what I refer to as a living, breathing document, right? It needs tended to every day and refined by professionals in the practice. Because as new pedagogy becomes available to our teaching professionals, we should redesign our curriculum to address the new science that we have access to, the science of teaching, and effective teaching. So curriculum is something that needs tended to daily. If not, you know, daily would be the ultimate design, but at least periodically throughout the year, once it's established as being complete.

(Tr. at 2725.)

523. Greater Johnstown offers all statutorily required courses to its students in all grade levels. (Tr. at 3037.)

*65 524. Greater Johnstown requires its elementary school students to take certain core classes, including ELA, math, reading, science, spelling, social studies, and writing. Greater Johnstown also requires its elementary school students to take “specials,” which are classes in music, art, physical education, library, and Science, Technology, Engineering, Art, and Math (STEAM). (Tr. at 3031-32; LR-00086.) Greater Johnstown has one STEAM-specific teacher for its elementary school and another one for its middle school. (Tr. at 2656, 3038.)

525. Greater Johnstown requires its middle school students to take courses in English, math, reading, science, social studies, art, physical education, music, computers, and STEM. (Tr. at 3024; LR-00087.)

526. To graduate from the district, Greater Johnstown high school students must earn four credits in English, four credits in mathematics, three credits in science, four credits in social studies, one credit in health and wellness, one credit in strategic reading or composition and writing, four credits in advisement (career exposure), and eight elective credits. (Tr. at 3008-10.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

527. Greater Johnstown's course offerings go beyond what is statutorily required. (Tr. at 3037-38.)

528. In the 2018-19 school year, 82.4% of the district's students took rigorous courses of study, which are college courses, AP courses, and CTE courses. This percentage exceeds the statewide average by about 25%. (Tr. at 3224-25; PX-02886-00009.)

529. Within Pennsylvania, Greater Johnstown High School is one of a small number of "comprehensive high schools," which are high schools that provide vocational programming to students on its campus. (Tr. at 2961-62.)

530. As a comprehensive high school, Greater Johnstown High School has 13 on-campus vocational programs in the following career areas: automotive body repair; automotive mechanic; construction trades; child care; computer technology/PC maintenance; cosmetology; engineering technology; graphic arts/commercial art; health and medical assisting - nurse's aide; health professions/allied health; institutional food worker/culinary arts; welding; and diversified occupations, a flexible job-training program. (Tr. at 3012-13; LR-01884.)

531. Greater Johnstown has a dual-enrollment program, and an associate degree program. As part of the dual-enrollment program, eligible Greater Johnstown's students can take college-level courses and earn college credits while they are still in high school. (Tr. at 2909-10.) Through the associate degree program, eligible Greater Johnstown students can obtain an associate degree while they are still in high school. (Tr. at 2909-10.)

532. Greater Johnstown had covered the costs for its students to take the college-level courses that are involved in the dual-enrollment and associate degree programs from revenue generated by its international program. (Tr. at 2551, 2910, 3275-76.) However, there is no longer an international program budget to offset the credits, and the district was forced to stop covering the costs, making families responsible for the cost of tuition. (Tr. at 3276.) Because families in the district – the poorest by median household income in the Commonwealth – are not able to afford tuition, Dr. Arcurio said the number of students taking college credits through dual enrollment has "significantly declined." (Tr. at 3277.)

533. Dr. Arcurio described Greater Johnstown's dual enrollment program as a point of pride, creating an "opportunity [for students] to earn their associate degree ... while they [are] earning their high school diploma." (Tr. at 2551.) The program "brings college to students, especially in a community where, oftentimes, [the] students are first generation college students." (Tr. at 2551-52.) But the program "only is able to impact a very small percentage of [Greater Johnstown] students." (Tr. at 2552.) In a district with classes between 200 and 225 students, only one to two dozen will be able to take advantage of the program. (Tr. at 2552.)

*66 534. Students who are enrolled in Greater Johnstown's dual enrollment program have the opportunity to take their dual enrollment classes through the Pennsylvania Highlands Community College, Indiana University of Pennsylvania, the University of Pittsburgh at Johnstown, and Mount Aloysius College. (Tr. at 2932, 2948, 2952, 2954-55.) However, since approximately 2019, the students have attended only Penn Highlands Community College. (Tr. at 2910.)

535. The Greater Johnstown students who can afford to attend the dual enrollment program have the opportunity to complete a variety of challenging and sophisticated college-level courses in order to obtain college credits. Those courses include: Anatomy and Physiology; AP U.S. History 1; AP U.S. History 2; 3D and 2D Art; AP Calculus; Computer Applications; AP Psychology; Sociology; Effective Communications Skills and Computer Applications; and P.C. Maintenance Levels 1, 2, and 3. (Tr. at 2917-21; LR-03114.)

536. At the high school level, through dual enrollment programs, Greater Johnstown students can take Introduction to Business and Management Principles, through the Pennsylvania Highlands Community College, which "[p]resents the principles, techniques and concepts needed for managerial analysis and decision-making. It highlights the functions of planning, organizing, influencing and controlling behavior in the organization. Principles of organization development are introduced." (Tr. at 2930-32; LR-03115-00007-00008.)

537. Another example of a dual enrollment course that can be taken through the Pennsylvania Highlands Community

William Penn School District; Panther Valley School..., Not Reported in Atl....

College is Microcomputer Applications, which is described in the school's 2021 Course Guidelines as follows:

This hands-on course introduces the student to the more popular microcomputer software packages available including Windows, word processing, spreadsheets and presentations. This course provides students with a working knowledge of these software packages to accomplish the more common tasks. The Microsoft Office Suite, MS Word, MS Excel and MS PowerPoint is used.

(Tr. at 2933; LR-03115-00008.)

538. Another example of a dual enrollment course that can be taken through the Pennsylvania Highlands Community College is Introduction to Sociology, described in the 2021 Course Guidelines as follows: "This course introduces the basic sociology concepts and theories with emphasis on application of these concepts to the understanding of American institutions, politics, economics, religion, education, marriage and the family." (Tr. at 2936; LR-03115-00010.)

539. Greater Johnstown is a party to the Pennsylvania Statewide Articulation Agreement and its students may therefore obtain CTE credits from postsecondary institutions while they are still in high school. (Tr. at 3018-19.)

540. Greater Johnstown highlighted in its 2019-22 Comprehensive Plan that it had one of the best dual enrollment programs and one of the best associate degree programs in the Commonwealth, stating "JHS [Johnstown High School] is in the top two schools in the Commonwealth when examining the number of students taking college credits while in high school, as well as the number of students enrolled in the associate degree program while in high school." (Tr. at 2914; LR-00090-00005.)

541. Greater Johnstown offers 14 different AP classes. (LR-01884-00025-00026.) Approximately 10% of the

school's juniors and seniors take these classes, and Greater Johnstown covers the cost for them to take the AP exams, which enables them to obtain college credits if they achieve a certain score on those tests. (Tr. at 3162, 3166.) At Greater Johnstown, 25% of the students who took an AP exam scored 3 or above in 2018. (PX-00159-0003-0004.)

*67 542. Approximately 30 students per grade at the Greater Johnstown High School can participate in the Summit Learning Academy, which involves project-based learning, one-on-one mentoring, and individualized educational pathways, although Dr. Arcurio wishes they could afford to offer this opportunity to more students. The students who can be involved in the Summit Learning Academy have the opportunity to take various additional online elective courses. (Tr. at 2992-95; LR-00127.)

543. The Summit Learning Academy is described as:

Summit Learning combines core values, what science tells us on how students learn best, and cutting-edge research into a school experience that is tailored to every community's needs. Summit Learning has three pillars to the student experience: 1. Project-based learning - students spend a majority of their time working alongside teachers and classmates on rich, real-world projects. 2. One-on-one mentoring - Students meet weekly with a mentor to ensure daily actions and progress align with long-term goals. 3. Individualized pathways - Students are empowered to set goals and deeply understand content by consuming it in a way that is best for them.

(Tr. at 2992-93; LR-00127-0002.)

544. Greater Johnstown has its own cyber school. Through this school, the district offers the same courses as its brick-

William Penn School District; Panther Valley School..., Not Reported in Atl....

and-mortar schools, as well as some additional elective courses. (Tr. at 2797; 2965.)

545. Through its 21st Century Career Training and Preparation Program, Greater Johnstown gives its high school students job-shadowing and internship experiences, and, through the Everfi program, it affords them the opportunity to obtain financial literacy. (Tr. at 3019.)

546. Greater Johnstown's high school organizes students into various "Pathways to Success," which are courses of study that are organized around different careers or areas of interest. The high school has established the following:

- a. 8th Grade Academy;
- b. Art and Communication;
- c. Health and Human Services;
- d. Engineering, Manufacturing, and Technology;
- e. Accelerated College Education;
- f. Associate Degree in High School-General Studies;
- g. Associate Degree in High School-Small Business Management; and
- h. Summit Learning Academy at Johnstown High School

(Tr. at 2989-91; LR-00127, LR-01884-00021-00024.)

547. In the past, U.S. News and World Report ranked Greater Johnstown's high school a bronze award winner, which signals that the school is one of America's best high schools. (Tr. at 2955-59.)

548. Greater Johnstown, in addition, offers an alternative education program. The program is focused on educating students who have disciplinary issues, and approximately 13 or 14 students were enrolled in 2021. Separately, it allows Greater Johnstown's cyber school students to visit a school building to receive in-person instruction, if they wish to do so. (Tr. at 2988-89.)

549. Greater Johnstown is a part of Appalachia IU 8, which provides psychological and social services to Greater Johnstown students and provides professional development

and pedagogy training for new teachers in the district. (Tr. at 3032, 3129-32.)

550. As of 2021, Greater Johnstown High School provided its students with opportunities to participate in sports, including volleyball, soccer, football, basketball, wrestling, hockey, track and field, softball, baseball, and volleyball. (Tr. at 3007; LR-01884.)

551. Greater Johnstown also provides its high school students with opportunities to participate in musical and performance-based extracurricular activities, including band/orchestra, chorus, interact club, pep club, marching band, corral, percussion ensemble, jazz band, and color guard. (Tr. at 3006, 3124.)

*68 552. Greater Johnstown High School provides its students with opportunities to participate in other types of extracurricular activities, including yearbook, Key Club, forensics, welding club, star club, scholastic quiz team, E-Sports, Entrepreneur Club, SWPBIS Club, and STRIDE Club. (Tr. at 3006, 3124; Declaration of Amy Arcurio ¶ 48 (Sept. 1, 2021).)

553. Greater Johnstown provides its middle school students with opportunities to participate in band, chorus, and orchestra. It also affords them opportunities to take small-group music lessons for a variety of musical instruments. (Tr. at 3025.)

554. Greater Johnstown, in addition, offers the following clubs and similar extracurricular activities to students and parents: Power Up Nutrition, Education Adagio, Bocce Ball, Strengthening Families, Tales for Tails, Junior Achievement, Good Touch Bad Touch, Backpack Project, One Book One Community, Truancy Intervention Program (SAIP), School Climate Survey, 21st Century After School Programming (Tutor and Credit Recovery), Student Assistance Program, Summer in the City, Communities in Schools, National Honors Societies, Foster Care program, Homelessness program, Fishing Club, Forensics, Art Club, Pep Club, Interact Club, Key Club, Drama/Musical, NAACP, Builders Club, JHS Pep Club, Kiwanis Kids, National Junior Honor Society, SkillsUSA, FIRST Lego League, FIRST Tech Challenge, Math Challenge 24, and Scholastic Quiz. (Greater Johnstown's Supplemental Response to President Pro Tempore's Fifth Set of Interrogatories, Interrogatory No.

William Penn School District; Panther Valley School..., Not Reported in Atl....

1 (Feb. 18, 2020); Greater Johnstown's Response to President Pro Tempore's Fifth Set of Interrogatories, Interrogatory No. 1 (Dec. 16, 2019.)

555. Greater Johnstown has after-school tutoring programs at all three of its schools. However, Greater Johnstown is only able to offer after-school tutoring to students through the Nita Lowery 21st Century learning grant, and the program can only serve 300 of the district's 2,900 students. (Tr. at 2796-97.) At the high school level, the after-school tutoring program is called Afterschool Live. It is designed to help Greater Johnstown's high school students with their homework and credit recovery efforts. The program runs Mondays through Thursdays. (Tr. at 2978.) At the middle school level, Greater Johnstown's after-school tutoring program is likewise called Afterschool Live. It is designed to provide Greater Johnstown's middle school students with homework assistance from tutors, course recovery, and recreation time with community partners. The program runs Mondays through Thursdays. (Tr. at 2980-81.) Greater Johnstown also has an after-school tutoring program at the elementary school level. This program is known as the Trojan Learning Center. The program is designed to provide Greater Johnstown's elementary school students with homework help, tutoring in reading and math, STEM activities, and recreation. The program runs Mondays through Thursdays. (Tr. at 2981-83.)

556. Also, through its after-school tutoring programs, Greater Johnstown provides its students not only with academic assistance, but also with a nutritionally-balanced dinner. (Tr. at 2977-82.)

557. Greater Johnstown offers a summer school program to its students. The program allows the district's high school students to recover credits. It also allows academically unsuccessful middle school students to receive extra learning opportunities. (Tr. at 2985-86.)

*69 558. Greater Johnstown offers the "Trojan College Access Program," which helps its students and their parents with college preparation activities, including the completion of applications for college admissions and scholarships. (Tr. at 3105-06.) The district also offers a FAFSA Completion Night, College Fair, and College Partnership Day. (Greater Johnstown Supplemental Response to President Pro

Tempore's Fifth Set of Interrogatories, Interrogatory No. 1 (Feb. 18, 2020).)

559. Greater Johnstown emphasizes social and emotional learning through a partnership with United Way, which focuses on cooperative learning, getting along, and making healthy lifestyle choices. It also provides a "Getting Along Together" curriculum in its elementary school, which incorporates social and emotional learning into the reading Tier 1 curriculum. (Tr. at 3100-03.)

560. All three of Greater Johnstown's schools are "community schools," which means that they partner with local health and social services providers to offer services to support students' mental, behavioral, and physical health. (Tr. at 3094-95.)

561. Greater Johnstown has community school directors, who act as "concierges" for the provision of services by, for example, arranging for eye exams and eyeglasses to be provided to students free of charge. (Tr. at 3108-10.)

562. Additionally, Greater Johnstown provides all its students with access to free breakfast and lunch. (Tr. at 3088-89.)

563. Greater Johnstown Elementary School has a certified service dog. (Tr. at 3361.)

564. Dr. Arcurio could not say exactly how many non-instructional support professionals—e.g., counselors, reengagement specialists, therapists, social workers—Greater Johnstown needs in its schools. (Tr. at 3115-19.)

565. Greater Johnstown offers a pre-K program, funded by Pre-K Counts dollars and grants from the Commonwealth. Greater Johnstown's pre-K program is carried out by a third-party vendor at the Morrell Neighborhood Preschool. (Tr. at 2596-98, 2986.)

566. For 2017-18, due to the financial status of the district, Greater Johnstown reduced its pre-K enrollment to save money and now there are only slightly more than 100 seats available. For the 2019-20 school year, Greater Johnstown had a wait list of students who met the age and income requirements. (Tr. at 3922, 2599-2600, 2988.)

567. Greater Johnstown's Kindergarten Entry Inventory (KEI), an assessment developed by the Department to

William Penn School District; Panther Valley School..., Not Reported in Atl....

evaluate whether students are ready for kindergarten, demonstrates that in 2018-19, the majority of its kindergartners began the year below grade level in all the skills assessed. (PX-00158.) For example, approximately 62% of children entered school unable to identify 9 or more letters, approximately 76% were unable to relate 6 or more letters with their sounds, and approximately 63% could not count to 20. (See PX-00158; Tr. at 2609, 2611-13.)

568. Dr. Arcurio provided the following testimony to the Pennsylvania Senate:

What we need more, though, is a growth model that children grow under the time that they're with that particular teacher or within that particular school ... [W]ithin each and every one of those children is an individual learner with their own sets of needs and issues. And when we standardize anything, we believe that every children's – every child is exactly the same and learns in exactly the same way.

(Tr. at 3237-39; *see also* LR-02291.)

569. As Dr. Arcurio similarly explained during the trial in this matter:

***70** [PVAAS scores measure] growth, and – and a growth standard, and I stand by that, I think that, you know, growing students is extremely important So, we focus on growth, because we know that if students are given a caring teacher, a teacher that knows what that student needs, they are able to grow them So we use PVAAS data in that way. We make a difference to kids when they're with us.

(Tr. at 3287-88.)

570. Ms. Kobal testified that raw standardized test scores do not reveal how well Greater Johnstown is teaching its students; she believes that “[g]rowth gives a better picture of how [students are] doing throughout the school year.” (Tr. at 3351-52.)

571. Greater Johnstown High School's PVAAS growth score in 2018-19 for ELA was 90, which exceeds the statewide average growth score by 15 points and the “meeting statewide growth standard” by 20 points. (Tr. at 3221-22.) Similarly, in 2018-19, Greater Johnstown High School exceeded the statewide average growth scores for Mathematics-Algebra and Industry-based Learning. (Tr. at 3222-24.)

572. In the 2018-19 school year, 99.92% of Greater Johnstown elementary school students were promoted to the next grade level, along with 99.51% of the district's middle school students. (LR-05007A-00004.)

573. For the 2018-19 school year, 69.8% of grades for students at Greater Johnstown's high school, and 87.1% of grades for students at its middle school, were an A, B, or C. (LR-05091-00002.)

574. In the 2019-20 school year, 77.27% of Greater Johnstown's students in the four-year cohort graduated, and 83.41% of its students in the five-year cohort graduated. (LR-05007A-00003.) For the 2019-20 school year, the state average was 89.52%. (LR-05010.) In the 2018-19 school year, 79.52% of Greater Johnstown's students in the four-year cohort graduated, and 91.28% of its students in the five-year cohort graduated. (LR-05007A-00003.) The state average for 2018-19 was 88.89%. (LR-05010.) In the 2017-18 school year, 86.43% of Greater Johnstown's students in the four-year cohort graduated, and 85.45% of its students in the five-year cohort graduated. (LR-05007A-00003.) The statewide average that school year was 88.49%. (LR-05010.)

575. In 2020, 48.89% of Greater Johnstown graduates planned to attend postsecondary institutions, 12.2% enlisted in the military, and 40.9% entered the workforce. (LR-05007A-00010–00011.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

576. Greater Johnstown operates in four buildings: an elementary, middle, and high school and a central administrative office. The elementary school includes grades K through 4 and accommodates 1,200 students. The middle school includes grades 5 through 7 and has about 650 students. The high school includes grades 8 through 12, was built in 2002, and has approximately 900-1,000 students. (Tr. at 2569-70, 2575, 2580, 2648-49, 2667, 2685-86, 3051-52.)

577. The district's elementary school has a shared auditorium/gymnasium space where school performances take place. (Tr. at 2659.)

578. Greater Johnstown used to operate two middle schools. (Tr. at 2569, 2639-40.) In 2017, the district made the decision to close Garfield Middle School, which had not been renovated since 1972, due to "severe decay," which would cost \$27 million to repair. (Tr. at 2639-40, 3973, 3987-88, 3992; PX-04781-2-3.) The Garfield building was not closed because Greater Johnstown had "too much space" or because the district had "lost student population." (Tr. at 3988.) Student enrollment did decline and continued to decline, but not until the 2018-19 school year, which was after the decision was made to close the school. (LR-05007A-00005.) The "purpose of the redesign was to lower the annual operation deficit" in the short term, with the knowledge that the district "could not afford any improvements [to the Garfield building] ... because that would also increase [the] operation deficit for each year." (Tr. at 3987-88.)

*71 579. Greater Johnstown now has inadequate space to educate its students. For example, all 1,200 students in grades K-4 were moved into a single building. (Tr. at 2648-49; *see also* Tr. at 2653-54, 2767, 3313-14.) Consequently, small-group interventions take place in locations such as this cinderblock storage closet, with no windows and no ventilation:

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(PX-00282; Tr. at 2649-51.) The district also turned art and music classrooms into general classroom space for

kindergarteners and first graders, forcing art teachers to put their "classroom" on a cart. (Tr. at 2653-54, 2767, 3311-12.)

580. While certain photographs depict missing ceiling tiles and peeling paint within the Garfield Middle School, those photographs were taken after the school had been closed. (PX-00276; PX-00270.) Greater Johnstown no longer uses this building and is seeking to sell part of it. (Tr. at 2673-75, 3260-61, 3266.)

581. Greater Johnstown expects to recoup \$300,000 from the sale of part of the Garfield Middle School building. (Tr. at 3061.)

582. By closing the Garfield Middle School, Greater Johnstown has realized over \$1 million in savings, exceeding estimates. (Tr. at 3988.)

583. Ms. Kobal testified that, in the district's elementary school, the bathroom that is closest to her classroom has only one toilet. Another set of bathrooms is located down a hallway from her classroom. (Tr. at 3356-57, 3362.) The wing that houses all the first-grade classrooms has a single bathroom with 1 toilet for 125 young students to share. (Tr. at 3303-10.)

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(PX-00280.)

584. Greater Johnstown also moved its eighth grade into the high school building, which necessitated creating an additional lunch period to accommodate the influx of students. (Tr. at 2688-90.) Consequently, Dr. Arcurio explained that "students begin eating lunch ... at around 10:30 in the morning" at the high school and because the cafeteria "space is too small," some students "forego the option of eating lunch ... [in] a very cramped space." (Tr. at 2688-89.)

585. Dr. Arcurio testified that Greater Johnstown also lacks adequate STEM/STEAM and science lab space, which has an adverse impact on students as they progress through their schooling. (Tr. at 2656-59, 2681.) Although state standards require in-lab instruction for middle school students, teachers

William Penn School District; Panther Valley School..., Not Reported in Atl....

at Greater Johnstown Middle School are forced to “use ... a back of the classroom table whe[re] they can [] replicate ... a science experiment or a science lab-type environment.” (Tr. at 2680-81.) The lab learning spaces in Greater Johnstown High School are overcrowded because so many students need to engage in remediation and/or must repeat credit courses in biology. (Tr. at 2690-94.)

586. Greater Johnstown High School does not have air conditioning, so when the weather is hot, Dr. Arcurio testified the “building feels like a pizza oven inside and kids just stop engaging and stop learning.” (Tr. at 2686-88.)

587. Greater Johnstown recently replaced its football stadium lights at an approximate cost of \$390,000, which it took out of its general budget. (Tr. at 3262-64.) Dr. Arcurio explained that the lights were installed when the high school had been built and, previously, the district would replace lights as they burnt out, which “was quite costly every time because we would have to bring a crane out and scaffolding.” (Tr. at 3263.) In doing it “in one fell swoop,” Dr. Arcurio indicated the district “had some considerable savings.” (Tr. at 3264.)

*72 588. Greater Johnstown has assigned a Chromebook laptop to every one of its students. Since December 2020, the district has maintained a one-to-one ratio of students to Chromebooks. (Tr. at 2775.) Prior to the COVID pandemic, Greater Johnstown had a set of Chromebook carts, which were shared between classrooms. (Tr. at 2768-69.) Because Greater Johnstown did not have enough Chromebooks for students to use throughout the day, maintenance staff would load the Chromebook carts onto box trucks to transport them between the middle and high school building. (Tr. at 2769.)

589. Once ESSER funds expire, Dr. Arcurio testified the district will not have the funds to maintain or replace the Chromebooks. (Tr. at 2778.) Dr. Arcurio explained

that is an issue that ... keeps me up at night, because you can't put the toothpaste back in the tube, as I like to say. You know, these kids have this technology and they're using it and it's great and it's enhancing their learning experience. So you know, now I'm ...

worried, how are we replacing this technology, because when the ESSER money is gone in September 2024 ... we're back to the technology budget that we currently have.

(Tr. at 2777-78.)

590. All three of Greater Johnstown's schools have Wi-Fi functionality. (Tr. at 3078.)

591. Using ESSER funds, Greater Johnstown purchased over 300 Wi-Fi hotspots for distribution to its students' households who did not have internet capabilities. (Tr. at 2776-77, 3083.) However, Dr. Arcurio explained that Greater Johnstown was unable to purchase enough hotspots for every family that needed one. (Tr. at 2777.)

592. Greater Johnstown's middle and high schools have computer labs, which are outfitted with desktop computers. (Tr. at 3079.)

593. There are desktop computers in the STEAM classroom in Greater Johnstown's elementary school. (Tr. at 3079-80.)

594. Almost every one of Greater Johnstown's classrooms has a Smartboard. (Tr. at 3080-81.)

595. For its middle school and high school, Greater Johnstown plans to purchase a subscription to a digital library, called Sora, which will enable students to access a suite of literature. (Tr. at 3084.)

596. Dr. Arcurio testified that “education for students at Greater Johnstown stopped in March 2020, and we were in review for the remainder of that school year.” (Tr. at 2771.) Unlike districts that had one-to-one technology and could engage immediately in remote learning, Greater Johnstown did not have enough Chromebooks for its students so it provided its students with “review and enrichment packets” and no new learning happened that year because the district could not depend on the students teaching themselves or their families to do so. (Tr. at 2770-71.) Greater Johnstown ordered, using ESSER funds, Chromebooks over the summer, but the devices were backordered due to demand, and, therefore, the

William Penn School District; Panther Valley School..., Not Reported in Atl....

district tried to provide a device for every family. (Tr. at 2772.) While Greater Johnstown ultimately was short 400 Chromebooks, a neighboring school district sold some of its “parts” or reserved devices to it to use until the new devices arrived. (Tr. at 2773.)

597. When school began in September 2020, Greater Johnstown used a hybrid, in-person model, in which students with last names A through L came two days and those with M through Z came two other days, with teachers recording remote lessons on Fridays. (Tr. at 2773-74.) The district returned to full remote in mid-November due to insufficient staffing, although the district still did not have enough Chromebooks for every student, which did not occur until December 2020. (Tr. at 2774-75.) With all students remote and now with Chromebooks, Greater Johnstown reached out to local businesses and churches in various neighborhoods for them to share their guest Wi-Fi passwords for students without home internet to use, and grants from T-Mobile helped many, but not all. (Tr. at 2775-77)

*73 598. Dr. Arcurio testified that “we’ll utilize those COVID dollars and we’ll work incredibly hard like we do between now and September 2024 to make the biggest impact for our students that we can, but then ... that window closes and ... we’ll be left with ... those painful decisions again of what students are eligible to receive the resources that our budget can afford.” (Tr. at 2852-53.)

599. “[T]hese students had significant gaps in their learning ... but we were unable to respond due to our lack of resources prior to the COVID pandemic,” explained Dr. Arcurio, “[a]nd so now we see, fast forward, that our students who were ... in and out of remote learning, who did not have significant access to the Internet while they were in remote learning ... they suffered greatly and are unable to perform at a level of proficiency[.]” (Tr. at 2851.)

600. For the 2016-17 school year, Greater Johnstown ran a deficit, with its expenditures per ADM exceeding its revenue per ADM by about \$400, and the operational budget deficit was approximately \$3.5 million. During his first week, Mr. Kocsis worried that the district was headed for insolvency, as there would be less than \$500,000 at the end of the year, and the budget deficit would continue to carry-over. (Tr. at 3912-13, 4134.) As a result of closing a building, cutting programs, cutting staff, cutting services, not giving

additional services that were needed, for the 2018-19 school year, Greater Johnstown had revenue per ADM that exceeded its expenditures by approximately \$500. (Tr. at 4136-37). In the 2019-20 school year, due in part to savings in expenditures because of the COVID pandemic and a large real estate transfer tax payment, the excess revenue per ADM was almost \$1,000. (Tr. at 4134-36; LR-05008.)

601. For the 2019-20 school year, Greater Johnstown received \$33,538,379 from all state sources, \$13,408,546 from local sources, and \$4,858,549 from federal sources. (Tr. at 4092-94; PX-04513-0014.) In 2019-20, Greater Johnstown had total revenues of \$51.8 million. (See LR-05009.)

602. In 2020, Greater Johnstown spent \$16,345.68 per ADM and had revenue of \$17,325.45 per ADM, ranking it 317 out of Pennsylvania’s 500 school districts. (LR-05008; PX-04829.)

603. For the 2019-20 school year, Greater Johnstown projected in its budget that, at the beginning of the year, it would have \$2.4 million in its unassigned fund balance. In its AFR for the 2018-19 school year, which is finalized based on actual numbers, Greater Johnstown reported that it had an end-of-year unassigned fund balance of about \$4.7 million, which was nearly double what it identified as the beginning unassigned fund balance in its budget for the 2019-20 school year. (Tr. at 4085-86; PX-00261-0008.)

604. In the 2019-20 school year, Greater Johnstown’s general fund and capital project fund grew from \$6,315,686 to \$9,259,631 due, in large part, to its receipt of delinquent tax payments from a local hospital. According to Mr. Kocsis, this increase also stemmed from the fact that, during that school year, Greater Johnstown experienced a variety of COVID-related savings that resulted from the cancellation of spring sporting events, reduced transportation costs, and a lower need for substitute teachers. (Tr. at 4007-08, 4099; PX-04513-0019.)

605. Mr. Kocsis explained, however, that the influx of one-time funds and one-time savings had not changed his mind about the district’s ability to add the recurring staff members it needed:

*74 I don’t think we could — a lot of this fund balance is one-time, non reoccurring events, so adding more staff and more expenditures to the normal operations of each

William Penn School District; Panther Valley School..., Not Reported in Atl....

year that would recur year and year after that, I think that would lead us back to where we were with no fund balance available, because we can't count on one-time things happening to get lucky, basically, and have a fund balance.

Good budgeting is you budget for the expenditures that you have and the resources that you have. That's sound budgeting. And operational deficits are just compounding and get worse year to year.

(Tr. at 4009-10.)

606. Dr. Arcurio testified that with its ESSER funds, the district installed part of the roof so a new HVAC system could be installed at the elementary school; installed or plans to install air conditioning at the high school; hired a director of education, who is “primarily focused on looking and rewriting [its] curriculum[;]” hired eight instructional tutors, additional behavioral interventionists, and a school counselor; provided summer learning opportunities; acquired Smartboards, Wi-Fi hotspots, headphones, headsets, and microphones; replaced or plans to replace the air handler units in the middle school and the hot-water pump in the high school; and acquired the Schoology learning management system. (Tr. at 2663-64, 2724, 2730-32, 2738-39, 2745-46, 2787-88, 2985, 3080-83, 3091, 3156-57, 3252, 3259, 3265.)

607. For the 2021-22 school year, Greater Johnstown received over \$22 million in BEF, which is about a \$2.5 million increase, or a 12.9% increase, from the prior school year. (Tr. at 11626; LR-01581-00003.) Greater Johnstown projects that it will receive \$34,922,877 from state sources, \$11,789,924 from local sources, \$19,179,228 from federal sources, and \$188,937 from other financing sources. (PX-04516-0006-0007.) It is therefore projecting that it will receive almost three times as much revenue from state sources as local sources.

608. Greater Johnstown plans to spend a total of \$66,809,618 for the 2021-22 school year, of which \$1,063,359 was budgeted on sports and other extracurricular activities and \$903,817 was budgeted on its pre-K program. (PX-04516-0013, -0015.)

609. As shown in its current budget, Greater Johnstown projects that, at the end of the 2021-22 school year, the

amount of its unassigned fund balance will be \$9,570,418. (PX-04516-0025.)

610. Between 2014 and 2020, Greater Johnstown's total revenue increased by \$9,615,225.54. (LR-05009.)

611. Dr. Arcurio testified nearly half of the district's fund balance may have to be used to make repairs to the sewage system of each school. (Tr. at 3277-78.)

612. Across a variety of measures, Greater Johnstown is a low-wealth, high-need, high-effort, low-spending district.

613. Between 2017-18 and 2019-20 school years, Greater Johnstown's student enrollment declined by 114 students. (Tr. at 4123; LR-05007A-00005.) Despite this decline in enrollment, Greater Johnstown's revenue increased by \$3,855,063 during the same time period. (Tr. at 4134-36; LR-05008.)

614. Dr. Arcurio explained the biggest challenge she faces every day: “[W]e just don't have enough resources. We don't have enough money to meet the challenges that our students have.” (Tr. at 2568.) She testified that due to a lack of funds, teachers and administrators are forced to constantly reshuffle priorities in an attempt to “divide the resources adequately among various groups of students. And unfortunately, when we divide those resources, there aren't enough to go around, and so we can't delegate resources to every student every day.” (Tr. at 2568-69.)

*75 615. Dr. Arcurio described the tough choices the district must make:

The philosophical dilemma in this is that what about the students in red? If we don't — if we don't provide intervention and support to those students, they continue to fall further and further behind.

So, you know, and I can tell you that that is not, by design, the way education should be. We, as superintendents across the Commonwealth, shouldn't have to make those very awful decisions about who are the kids that get the resources this year. And so, you know, when we talk about the bubble kids, it requires less — less intervention, but we know if we focus on those kids, the children in red are left further and further behind.

(Tr. at 2634-35.)

4. Panther Valley

616. Petitioners presented the in-person testimony of Superintendent McAndrew and Tara Yuricheck, and the parties designated the deposition testimony of Dennis Kergick and Lisa Mace, who were not called as witnesses at trial. Superintendent McAndrew is the current Superintendent of Panther Valley and has held that position for the past two years. (Tr. at 238-39.) Ms. Yuricheck is a teacher at Panther Valley. She has been teaching at Panther Valley for 20 years. During her tenure at Panther Valley, she has held jobs as a fifth-grade history teacher, a first-grade teacher, and as a teacher for the district summer pre-K program. (Tr. at 808-09.) Mr. Kergick is the former Superintendent of Panther Valley. (Parties' Joint Designations of the May 29, 2019 Deposition of Dennis Kergick (Kergick Dep.) Vol. 1 at 7.) Ms. Mace is the principal of Panther Valley Intermediate School. (Parties' Joint Designations of the March 3, 2020 Deposition of Lisa Mace (Mace Dep.) at 6.) The Court finds these witnesses credibly testified.

617. As of the 2020-21 school year, Panther Valley has 1,675 students, although Superintendent McAndrew testified enrollment has increased in recent years such that the district now serves approximately 1,800 students. (Tr. at 265-66; LR-05029A-00005.)

618. Panther Valley's demographics are as follow:

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(PX-04810.)

619. Panther Valley has a special education population with significant needs, with between 21% and 22.9% of students requiring special education services. (PX-04810; *see* Tr. at 277; PX-02167-0001.)

620. For the 2019-20 school year, 56.35% of students attending Panther Valley were classified as economically disadvantaged although Superintendent McAndrew believes that number is likely an undercount. (PX-04810; Tr. at 268-70.) In addition, 1.54% of students were classified as ELL students. Demographically, 79.28% of Panther Valley's students are White, 4.32% are Black, and 10.30% are Hispanic. (PX-04810.)

621. Panther Valley is located in Carbon and Schuylkill Counties and includes the Boroughs of Nesquehoning, Lansford, Summit Hill, and Coaldale. (Kergick Dep. Vol. 1 at 14.)

622. A former coal mining community, Panther Valley lacks the industries to provide tax revenue and jobs and is facing the departure of its three biggest businesses. (Tr. at 263-65, 813-14.)

*76 623. By median household income, it ranks 469th lowest, and by the Aid Ratio, it ranks 17th poorest. (PX-04880.)

624. According to the Fair Funding Formula, Panther Valley has the 118th highest need general student population in the Commonwealth. (PX-04880.) Putting its need and wealth together, the district's local capacity per weighted student ranks 472nd of 499 districts. (PX-04880.) By current expenditures per weighted student, Panther Valley ranks 417th. (PX-04880.)

625. According to the Special Education Fair Funding Formula, Panther Valley has the 7th highest need special education student population in the Commonwealth. (PX-04880.)

626. By the Level Up formula, which combines both special education and general education need, Panther Valley is therefore the 12th lowest spending district in the Commonwealth. (PX-04778, Tab "Level Up Supplement," Column G; Tr. at 11733-34.)

627. In 2019-20, Panther Valley had total revenues of \$27,877,161.60. (LR-05031.) Panther Valley is a low-wealth, high-need, high-effort, low-spending district:

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don't know the pedagogy that goes into it. They're trying their best But it's difficult when you spent four years of college learning a certain content and then saying, okay, now let's go teach this [different] content.

(PX-04880.)

628. Raising taxes one mill only brings Panther Valley \$150,000 in revenue, so Panther Valley cannot tax its way to sufficient funding. (Tr. at 490.) But Panther Valley continues to make significant efforts. By equalized mills, the district ranks 10th highest in the Commonwealth. (PX-04880.) When measured by Local Effort Capacity Index, it ranks 23rd. (PX-04880.)

(Tr. at 311.)

632. Panther Valley employs 26 special education teachers who teach 360 of the 400 students in the special education program. The remaining 40 students are placed outside of the district. (Kergick Dep. Vol. 1 at 170-71.) Superintendent McAndrew testified Panther Valley has insufficient numbers of special education teachers to address its large and growing numbers of students with disabilities. (Tr. at 345-47; PX-04810.) Without sufficient special education teachers, “we're not able to meet all the needs” of the students. (Tr. at 345-47.)

629. Ms. Yuricheck testified students at Panther Valley face obstacles in their lives outside of school. Many Panther Valley students “come from families where they have dealt with a lot of trauma in their lives” and “have a lot of issues coming into school.” These traumas are a “barrier to education.” (Tr. at 811-12.)

*77 633. Panther Valley provides English-learner services to about 24 students. (Kergick Dep. Vol. 1 at 174.)

630. All of Panther Valley's teachers have college degrees, have their teaching certificates, and are certified to teach in Pennsylvania. Many of the district's teachers and staff also have their master's degrees. The average teacher has worked in the district for 13.1 years. (Tr. at 598-601, 616.)

634. The Panther Valley Intermediate School has about 40 teachers, including special education teachers. The school has a life skills special education teacher, an emotional support special education teacher, and a learning support special education teacher. The school also has four related arts teachers (e.g., art, music, gym, and computer), a Title I math teacher, and a Title I reading teacher. (Mace Dep. at 12-13.)

631. However, while Panther Valley's teachers have a teaching certificate, not all of them have certificates in the subject area they teach. Panther Valley has difficulty filling vacant positions with certified teachers and as a result, it has had to hire several teachers that are not certified to teach the courses for which they are hired. (Tr. at 310-11.) For example, Panther Valley had to hire a social studies teacher to teach Algebra I, which is a Keystone-tested subject. (Tr. at 312.) As Superintendent McAndrew explained,

635. As Panther Valley's Superintendent McAndrew explained, the staff at Panther Valley is “fantastic” and “go[ing] above and beyond to do everything they can for [their] students.” The district's administrators also “work extremely hard” and the school board members “have the best interest of the students ... in mind.” (Tr. at 501.)

I see these teachers, they're doing everything they can ... [but] [t]hey're not teaching the material that they went to college to learn. So these ... teachers are going home every night to reteach themselves certain areas. They

636. During the 2019-20 school year, the average classroom teacher experience for teachers in Panther Valley was 14.5 years. (LR-05029A-00006.)

637. During the 2019-20 school year, the average teacher salary for Panther Valley teachers was \$52,319.66. (LR-05029A-00006.) The district pays the lowest teacher

William Penn School District; Panther Valley School..., Not Reported in Atl....

salaries in the county, with a starting salary of less than \$38,000. (Tr. at 298, 309.) Panther Valley has the same pay scale across the elementary school, intermediate school, and junior-senior high school. (Tr. at 616-17.) Superintendent McAndrew claimed that Panther Valley has a high teacher turnover, which he believed was due to the low and non-competitive starting salaries that the district offers, teachers moving to neighboring districts for higher salaries, lower class sizes, more professional development, and better technology. (Tr. at 308-09, 312; *see also* Tr. at 838-39.) However, as noted above, during the 2019-20 school year, the average Panther Valley teacher had been teaching in the district for more than 13 years, and, according to Ms. Mace, teacher turnover in Panther Valley's intermediate school is limited. (Mace Dep. at 40-41.)

638. Teachers at Panther Valley are evaluated using the Charlotte Danielson model. Panther Valley's teachers are evaluated twice a year for those that have not yet achieved tenure or once a year for those that have achieved tenure based on four domains: their preparation, understanding of the material, delivery of the material, and professionalism. (Tr. at 602, 604; LR-05029.)

639. Of the teachers evaluated across Panther Valley's schools during the 2018-19 school year, 55 were rated as distinguished, 61 were rated as proficient, and 2 were rated as "need improvement, satisfactory." (Tr. at 601-04, 607-09; LR-05029A-00002.)

640. During the 2013-14 and 2015-16 to 2018-19 school years, Panther Valley conducted 522 teacher evaluations. During that time, one teacher was rated as unsatisfactory; the other 521 teacher evaluations rated the teacher as satisfactory. The Department did not report data for Panther Valley's teacher evaluations in the 2014-15 school year. (LR-05029A-00002.)

641. During the 2019-20 school year, Panther Valley reported employing 184 professional and support personnel, including 120 professional personnel (including administrators, classroom teachers, and others), 51 full-time support staff, and 13 part-time support staff. (LR-05029A-00008.)

*78 642. Panther Valley employs the following administrators: a superintendent, a business manager, three principals (one for each school building), a technology

director, a supervisor of building and grounds, an athletic director, and a special education director. (Tr. at 377-78; Kergick Dep. Vol. 1 at 213.) There are no assistant principals. (Tr. at 252.) Because of this, the principals are overburdened with issues traditionally handled by assistant principals, such as discipline and emotional support. (Tr. at 252, 377.) The principals also wear many different hats: the elementary principal is also a school psychologist and coordinator of all federal grants, and the intermediate school principal also handles all safety and security issues for the district. (Tr. at 378-80.)

643. With regard to other teaching staff, Panther Valley offers the support services of three reading specialists, through Title I, in its elementary and intermediate schools. (Tr. at 335-36; Kergick Dep. Vol. 1 at 165.) The third position was only recently added as a result of ESSER funds, and only two of the three instructors are actually certified as reading specialists — the other is a classroom teacher. (Tr. at 335-36.) Superintendent McAndrew testified that these three staff members are still not enough to cover the needs of the students. (Tr. at 338.) As a result, the district provides minimal academic remediation, and the reading specialists cannot follow the MTSS framework or provide small group instruction to all the students who need support. (Tr. at 338-40.) As Superintendent McAndrew testified, "we know the students need it, and sometimes it's a coin flip on who gets it." (Tr. at 339.)

644. Panther Valley offers the support services of 19 paraprofessionals. Paraprofessionals offer a wide array of services, including life skill support for intellectually disabled students, small group academic instruction, and extra support in the classroom with teachers and substitutes. (Tr. at 341-43.) Panther Valley's intermediate school has seven paraprofessionals that assist in the classroom and a reading specialist. (Tr. at 841-42.)

645. Panther Valley employs four guidance counselors, one who works in the elementary school, one in the intermediate school, and two in the high school. (Tr. at 349.) There are an insufficient number of guidance counselors, which often forces them to be reactive, rather than proactive about addressing students' needs. (Tr. at 350-51.)

646. Panther Valley employs one psychologist and has been looking to hire a second but has been unable to fill the

William Penn School District; Panther Valley School..., Not Reported in Atl....

position. (Tr. at 358.) To fill the gap, the elementary principal, who is a former school psychologist, completes some of those duties. (Tr. at 358-59.) As a result, the district is forced to prioritize evaluations for students with behavioral challenges over evaluations for students struggling academically. (Tr. at 359.)

647. Panther Valley also employs an armed security guard, two certified school nurses, and a third nurse who is working to become certified. (Tr. at 619.)

648. Through a grant organized with a local hospital, St. Luke's, Panther Valley offers support services of a social worker once per week to the neediest students in the district. (Tr. at 351-52, 354-55.)

649. With the help of additional funds from St. Luke's and a local business, Ametek Corporation, Panther Valley is now offering the support of a family development specialist for the 2021-22 school year. This new role, which is in place at the elementary school, was created to bolster the social and communication skills of the younger students transitioning from online schooling during COVID to in-person, live classroom learning. (Tr. at 352, 620.) Although this program was very successful, Superintendent McAndrew said it would be cut because the local business was sold and could not help fund the position in the future, meaning this specialist, who had built a rapport with and earned the trust of the students, will be one more person leaving those students. (Tr. at 361-62.)

*79 650. The district does not have any librarians. (Tr. at 365.)

651. Panther Valley does not employ any truancy officers or other staff dedicated to addressing attendance. (Tr. at 383-84)

652. The district outsourced its custodial staff. (Tr. at 435-36.)

653. Through the assistance of outside providers, Panther Valley also provides free dental screenings for its students. (Tr. at 697-98.)

654. Students in Panther Valley may participate in or be served by St. Luke's University Health Network for medical services or other minor services. (Panther Valley's Response to Interrogatory No. 1, 12/16/2019.)

655. Panther Valley also provides students with a weekly mental health clinic after school and Carbon Lehigh IU groups for trauma therapy. (Panther Valley's Response to Interrogatory No. 1, 12/16/2019.)

656. Panther Valley has a Student Assistance Program (SAP), which works with at-risk students. (Tr. at 821.) SAP is a state-mandated program and its teacher team meets weekly. (Tr. at 875-76.)

657. In 2019, kindergarten classes at Panther Valley had about 22 students. Although Superintendent McAndrew claimed that kindergarten classes are larger during the current school year (between 26 to 28 students), he also acknowledged that the incoming class was the largest in over 10 years. Superintendent McAndrew has never counted the number of students in a class, and class enrollment data is maintained by Panther Valley. As Superintendent McAndrew recognized, the class enrollment data maintained by Panther Valley is more accurate than his own memory. (Tr. at 621-22, 738-39.)

658. Grades 1 to 3 have about 23 or 24 students per class. The intermediate school and the junior high school have about 25 students per class. High school classes range in size from 6 to 30 students, depending on the class. For instance, AP classes are smaller. (Kergick Dep. Vol. 1 at 50-52.)

659. Fifth grade class sizes currently range from 25 to 34 students, but they are larger this year than in the past due to the recent loss of a fifth grade teacher within the district. (Tr. at 818.) In 2020, there were about 25 students per class; in 2019, there were about 20 students per class. (Tr. at 871.) At the fifth grade level, the largest class has 34 students, although it is a special education inclusion course that is taught by two teachers. (Tr. at 894.)

660. At the time of trial, one of the reasons class sizes were higher was because a number of students were retained and held back due to the remote learning caused by COVID shutdowns. (Tr. at 871-72.) The school has also been impacted by the death of two teachers in October 2021, positions that the district was actively looking to fill. (Tr. at 872.)

661. Due to large class sizes, Superintendent McAndrew testified, "I'm seeing people raise their hand in a first grade classroom and want help and our teachers not being able

William Penn School District; Panther Valley School..., Not Reported in Atl....

to go over and give that help ... these kids want to learn. It's not they're choosing not to learn. They're not getting the opportunity to learn.” (Tr. at 260-61.)

662. Most troubling are the consistently high kindergarten class sizes across the district. Superintendent McAndrew explained,

***80** These are five-year-olds. These are kids that just learned to how to use the bathroom; some of them still having issues in the bathroom. And we have one teacher in that room dealing with those students. ... What does that look like? That looks like one student that may have an issue that day that's crying — again, they're 5 — having a bad day and the teacher goes over to address that, what are the other 28 kids getting right then? They're waiting. They're waiting for their education

(Tr. at 259-60.)

663. During the 2019-20 school year, the student-to-classroom teacher ratio was 15.4 students per classroom teacher. (LR-05029A-00009.)

664. During the 2019-20 school year, the student-to-staff ratio was 8.8 students per reported personnel. (LR-05029A-00009.)

665. In a statement posted on Panther Valley's website, Superintendent McAndrew stated, in part:

Panther Valley School District is committed to providing high quality educational opportunities for all of our students. We set high expectations for ourselves and our students. With the work that has already been done with our strategic plan, the ongoing development of a District Facilities Plan, and the fiscally responsible decisions that have been made, there is a strong foundation from which we build upon to accomplish our goals.

As our mission expresses, “Panther Valley School District will prepare students to meet the challenges of today and tomorrow,” we will ensure that our students – and graduates – will have knowledge, skills, and experiences needed to achieve their goals and aspirations. ...

(LR-03083.)

666. According to the former superintendent, Panther Valley provides a well-rounded program of instruction to meet the academic needs of its students. Included within that, the district ensures that students identified as needing educational assistance receive those supports. The district also identifies instructional strategies to improve academic programs and school conditions. (Kergick Dep. Vol. 2 at 318-20.)

667. Panther Valley aims to offer students an individualized career pathway rather than academic tracks. The district has a college advisor, funded through an anonymous donor, who helps students with their career pathways. (Kergick Dep. Vol. 1 at 44-46.)

668. The graduation requirements at the Panther Valley High School are four years of English, four years of math, three years of social studies, three years of science, two years of arts and humanities, two years of physical education, one-and-a-half years of health, one-half year of computer apps I, one-half year of computer apps II, four-and-a-half credits of electives, one-half year of economics, and one-half year of personal finance. (Kergick Dep. Vol. 1 at 81-82.)

669. Students at Panther Valley High School take classes in subject matters including ELA, reading, math, science, social studies, art, music, and health/physical education. (Tr. at 512-536.) Ms. Yuricheck explained that the latter three courses are “specials” and the first classes to be cancelled if there are not enough substitutes to fill the voids left when teachers are absent. (Tr. at 846-47.)

670. Panther Valley High School provides core English courses for its students. Most 9th and 10th grade students at Panther Valley take English 9 and English 10, which are offered at both the regular education and honors level. Panther Valley offers an Honors Literature course for 11th grade students and an AP English course for 12th grade students. (Tr. at 518-19.)

*81 671. The standard path for mathematics for Panther Valley High School students is to take core courses in algebra in 9th grade and 10th grade. After taking algebra, students have an opportunity to take math courses in geometry, trigonometry, and calculus. (Tr. at 526; LR-00219.)

672. Panther Valley's high school offers accelerated instruction through several honors or advanced courses in math, including Honors Algebra, Advanced Geometry, Advanced Trigonometry, and AP Calculus. (Tr. at 526-27; LR-00219.)

673. Panther Valley's high school offers a course in Contemporary Math Applications, which the course registration handbook describes as addressing

how the world around us is affected by mathematics. It emphasizes number theory and real world critical thinking applications. This is a broad-based overview of Mathematics[,] which is most suitable for students who are planning to continue their education in fields such as liberal arts, elementary education, the social sciences, business, nursing, and allied health fields.

(LR-00219-00020; Tr. at 527.) Superintendent McAndrew indicated while the goals of the math courses are written, "some of [Panther Valley's] students are so far behind that ... even though this is the goal" the district "ha[s] to differentiate instruction because a lot of the[students] don't even have the basic skills," and, therefore, they "often ... have to lower the expectations or differentiate that instruction for those students" (Tr. at 528.)

674. Panther Valley offers its high school students several other math electives including Keystone Algebra (remediation course), Business Math 1 and 2, Honors Probability and Statistics, and SAT Math Preparation. (Tr. at 528-29; LR-00219.)

675. Panther Valley High School offers science courses in Earth and Space Science, Physical Science, Biology, Forensic Science, Chemistry, Physics, Environmental Science, and Human Anatomy and Physiology. (Tr. at 529; LR-00219.)

676. The typical progression of social studies core courses in Panther Valley for high school students is to take American Cultures in 9th grade, World Cultures in 10th grade, Civics in 11th grade, and Economics in 12th grade. (Tr. at 523; LR-00219.)

677. Panther Valley offers a variety of other high school social studies elective courses, including Current Events, Cinema and History, America Goes to War, Honors World History, Introduction to Criminal Justice, and Honors Political Science. (Tr. at 525; LR-00219.)

678. Within its high school, Panther Valley offers AP courses in English, Computer Science, U.S. American History, and Calculus. The high school also offers honors courses in Algebra, Classic Literature, Calculus, Social Psychology, U.S. History, World History, Political Science, and Probability and Statistics. (Tr. at 513-14, 526-27; LR-00219.)

679. High school students at Panther Valley have an opportunity to take foreign language instruction in Spanish in-person, and French, German, Latin, or Mandarin through an online provider. (Tr. at 535; LR-00219.)

680. Panther Valley High School offers business-oriented courses including College & Career Readiness, Advertising & Marketing, Introduction to Business I & II, Money Management, Accounting I, II, and III, Personal Finance, International Business, Entrepreneurship, and Investing 101. (Tr. at 536-37; LR-00219.)

*82 681. Panther Valley's high school offers a technology curriculum including Introduction to Crafts, Introduction to Technology, Material Processes I and II, and CCTI Intro to Electronics. (Tr. at 537; LR-00219.) Superintendent McAndrew stated, as technology changes, education needs to change, and students need to be skilled in the use of computers in the 21st century to have a better understanding of many aspects of daily life. (Tr. at 333-34.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

682. Panther Valley High School's physical education courses involve classes in basketball, football, golf, kickball, personal fitness, racket sports, softball, volleyball, and weight training. (Tr. at 540; LR-00219.)

683. Multiple art courses are offered at Panther Valley's high school. These include Foundation to Art, Introduction to Urban Art, Drawing and Painting I & II, Ceramics I, II, and III and Art History. (Tr. at 540-41; LR-00219.)

684. Panther Valley High School offers multiple music courses including Band, American Music, and Introduction to Music Theory and Percussion Ensemble. (Tr. at 541-42; LR-00219.)

685. According to Panther Valley's course guide, Computer Applications I introduces students to the terms and skills associated with word processing and spreadsheet software, such that Panther Valley “[s]tudents will learn the basic terminology and skills needed to operate these programs.” The course guide states, Computer Applications II allows students to learn “more advanced skills” in word processing, presentation, and spreadsheets and “will create multiple business documents that will be useful in their future jobs or schooling after high school.” (Tr. at 514-17; LR-00219.)

686. The course description for Economics states: “The main objective of this course is to help students understand the basic principles of economics and how they relate to everyday life. This course will place an emphasis on different economic systems, American free enterprise, money, banking, finance, the United States government and our economy, and global economics.” The district requires the economics course because it believes that students must have at least a preliminary understanding about money, banking, and finance. (LR-00219; Kergick Dep. Vol. 1 at 90-91.)

687. Panther Valley also requires students to take a course in personal finance, which is described as follows: “This course is required and focuses on the financial skills necessary as a financially independent adult. Students will learn how everyday financial decisions affect their lives including budgeting, payroll, and savings and investing, banking, credit and borrowing, insurance and risk and taxes.” The district views this course as giving its students a significant advantage in understanding personal financial matters, for example,

loans for college, cars, and a house. (LR-00219; Kergick Dep. Vol. 1 at 97-98.)

688. Panther Valley is preparing to offer numerous STEM courses related to navigating computer programming, programming robots, and building hardware projects. The high school library, which had not been “touched for about ten years” due to a lack of librarian, has been renovated into a STEM lab and media center using local grants. The school has installed a 3D printer in the space, which is utilized for teaching multiple courses. (Tr. at 365-67, 533-35, 539-40.) Superintendent McAndrew indicated that while the district had received money to start buying STEM equipment for the intermediate school, there is no one to teach the course. (Tr. at 587-88.)

***83** 689. In utilizing ESSER funds, Panther Valley added 37 new courses to its high school curriculum and purchased the curricula and supplies necessary to offer those courses. These include the following: Apocalyptic and Dystopian Literature; Broadcast Journalism; Monsters and Literature; Children's Literature; Mythology; Dark Nights; British Literature; American Literature; Writing for the Future; Lehigh Carbon County Community College Research and Writing; Current Events; Cinema and History; America Goes to War; Honors World History; Honors Political Science; Keystone Algebra; Business Math 1; Business Math 2; Honors Prep Probabilities and Statistics; Physical Science 1; Physical Science 2; Advanced Biology; Forensic Science; STEAM (Science Technology, Engineering, Arts, and Mathematics) 1; STEAM 2; Keystone Biology; AP Computer Science; Advertising and Marketing; Introduction to Business; Money Management; Accounting; International Business; Entrepreneurship; Investment 101; Introduction to Business Marketing; Introduction to Crafts; and Introduction to Urban Art. (Tr. at 396-98 401; PX-06000.) Superintendent McAndrew testified the courses were added in an effort to better prepare students for proficiency on the Keystone Exams and provide students with a more well-rounded education. (Tr. at 393-94, 402-04; PX-06000.) Without the ESSER funds, the courses could not be added, and Panther Valley does not anticipate being able to continue providing these courses after ESSER money runs out. (Tr. at 401, 404.)

690. According to Panther Valley's course guide, STEAM I offers students an introduction to computer science through “hands-on, collaborative learning experiences ...

William Penn School District; Panther Valley School..., Not Reported in Atl....

[using] block-based programming, Python text programming, programmable robots such as the Sphero BOLT and the micro: Maqueen Plus, and the Makey electronic invention kit.” STEAM II advances students’ knowledge of programming and computer science through the use of Python, Sphero BOLT, Maqueen Plus, and “Raspberry Pi, a pocket-sized computer designed to teach programming skills and build hardware projects.” (Tr. at 533-35; LR-00219.)

691. In the International Business course offered by Panther Valley's high school, students “develop the skills to do business in markets around the world ... [and] learn the ins and outs of multinational organizations’ strategic plans as well as foreign business practices.” (Tr. at 536-37; LR-00219.)

692. Panther Valley offers its high school students a dual enrollment program in conjunction with the Lehigh Carbon County Community College. The college sends an adjunct faculty member to the school district to teach courses, such as sociology and psychology, and college research and writing. (Kergick Dep. Vol. 1 at 114-15; Tr. at 546-47; LR-00219.)

693. More than 60 students at Panther Valley attended the Carbon Career & Technical Institute at the time of the former superintendent's deposition. (Kergick Dep. Vol. 1 at 120-21; Tr. at 550.) The Carbon Career & Technical Institute is a comprehensive high school that provides technical education in addition to core subject areas. (Kergick Dep. Vol. 1 at 19.) Students who attend Carbon Career & Technical Institute spend all day at the school but might return to Panther Valley for sports or extracurricular activities. (Kergick Dep. Vol. 1 at 19.) The number of students attending the Carbon Career & Technical Institute has increased in recent years. (Tr. at 550; LR-00219.)

694. Students attending the Carbon Career & Technical Institute participate in programs including automotive repair and service, carpentry, computer engineering, technology, cosmetology, culinary arts, draft and design technology, electrical distribution and automation, electronics communication engineering technology, graphic design, health or medical assistant occupations, heating ventilation and air conditioning (HVAC), marketing, precision machining technology, and welding. (Tr. at 550-51; LR-00219.)

695. Panther Valley's junior high school includes seventh and eighth grade. In the 2018-19 school year, Panther Valley offered its junior high students courses in language arts, reading, math, history, science (including earth and space science, and life science), art, music, computers, and physical education. Advanced courses in language arts, reading, and math are also offered. Panther Valley also offers its junior high students courses in technology education, career readiness, skills for living, and Lions Quest. (Tr. at 577-82; LR-00324.)

*84 696. Students at Panther Valley Intermediate School take classes in core subjects including language arts, reading, math, science, and social studies. (Tr. at 879-80.)

697. The school also uses the math program i-Ready, which recently replaced some prior math programs. (Tr. at 882-84.)

698. Panther Valley Intermediate School students have a six-day cycle of additional classes, in addition to core academic courses. These additional classes cycle between computers, physical education, art, music/Title I math, a related arts class taught by a “regular ed” teacher, and additional time studying math. The intermediate school also provides a study hall for students to meet with teachers and make up missed assignments. (Mace Dep. at 13-14; Tr. at 586-87, 879-80.)

699. Panther Valley's elementary students take courses in art, language arts, learning behaviors, math, music, physical education, reading, respectful behaviors, and science. (Tr. at 590.)

700. Panther Valley has adopted a new reading program called Fountas & Pinnell for grades K through 3 based on feedback and recommendations from the teaching staff. With the Fountas & Pinnell program, students read aloud and do shared reading, guided reading, and independent reading each day. Panther Valley believes that this new reading program allows students to receive direct instruction and comprehension skills and phonics skills, as well as more individualized support in a small group setting. (Kergick Dep. Vol. 1 at 47-48, 148.)

701. In January 2019, the Panther Valley elementary school's positive behavior support program was evaluated by the PaTTAN group and received a total score of 98%. The evaluation stated, in part: “Panther Valley Elementary School students and staff are well-informed of their schoolwide

William Penn School District; Panther Valley School..., Not Reported in Atl....

expectations to be responsible, be respectful and be safe. ... Congratulations to Panther Valley Elementary School community for investing in creating a positive school culture.” (Tr. at 677-80; LR-00274.)

702. Panther Valley uses an online science program for students in kindergarten through third grade that aims to inspire students to like science by doing experiments. (Kergick Dep. Vol. 2 at 393.)

703. Panther Valley also offers a cyber-school option for its students through a partnership with the Carbon Lehigh IU. (Tr. at 593.)

704. Panther Valley students can participate in a variety of sports and athletic activities, including football, volleyball, basketball, baseball, softball, track and field, cheerleading, swimming, golf, and soccer, but not all these sports are offered by Panther Valley. If students want to participate in cross country, swimming, golf, or soccer, they can do so independently. For example, if students want to play soccer, they can do so with Marian Catholic. Panther Valley does not provide transportation for the students participating independently in these sports. (Tr. at 693-94.) The district has a grass football field and a baseball and softball field. (Tr. at 693-95.)

705. Panther Valley offers extracurricular music programs like marching band, concert/performance band, and chorus. (Kergick Dep. Vol. 2 at 449-50.) Other extracurricular activities offered by the district include the Drama Club, Student Leadership, School Newspaper, Good News Club, Yearbook Club, and the Future Business Leaders of America. (Tr. at 693-95.)

*85 706. For the past 30 years, Panther Valley has offered an Army Junior ROTC program in which about 100 total high school students – nearly 25% of the student body – participate. Any student who is interested can participate. A retired major and a retired first sergeant from the U.S. Army teach the course. The program emphasizes leadership and citizenship topics, as well as an array of military protocol, procedures, history, and physical fitness topics. (Tr. at 542-44; Kergick Dep. Vol. 1 at 100-03.)

707. Panther Valley had to cut several sports, such as wrestling, swimming, golf, and cross country, in order to

preserve its budget. (Tr. at 283.) Although, as previously noted, Panther Valley students can participate independently in these sports. (Tr. at 693-94.) Panther Valley also had to cut other programs due to funding deficiencies. (Tr. at 287-88.) Superintendent McAndrew talked about the “trickle down” effect of cutting programs like JROTC, if Panther Valley is unable to acquire more revenue to continue offering the program and others; cutting the program not only strangled a potential source of college and career opportunities, but also ended an opportunity for students to “learn[] leadership skills.” (Tr. at 438-39.) Panther Valley has also had to eliminate its engineering club, and it can only offer a Future Business Leaders of America club program because students pay fees to participate. (Tr. at 441-42.)

708. The Panther Valley Intermediate School has a library that is overseen by the Title I reading teacher. The school also has a student leadership group of sixth grade students who help shelve books. (Mace Dep. at 60-61.)

709. Fourth and fifth grade students at Panther Valley Intermediate School can participate in the SHINE after-school program. (Mace Dep. at 60.) The SHINE program provides STEM projects, works with students to make sure their homework is done, works on positive behavior skills, and feeds the participating students dinner. (Tr. at 855, 875.)

710. Panther Valley offers a work cooperative, which allows students who have completed the requisite coursework the freedom to leave early on a school day to work. (Kergick Dep. Vol. 1 at 104-05.)

711. Panther Valley has a mentorship program in which incoming freshman are assigned a staff member who serves as a mentor. (Kergick Dep. Vol. 1 at 105.)

712. Students at Panther Valley can apply to be inducted into the National Honor Society. The district has a National Honor Society that is run by two faculty advisors and has a committee of five faculty members to screen applicants. Panther Valley students are accepted into the National Honor Society every year. (Kergick Dep. Vol. 1 at 132-33.)

713. Panther Valley offers a Skills for Success course that teaches students study skills and test preparation. (Kergick Dep. Vol. 1 at 141.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

714. Students at Panther Valley have access to Moby Max, an online math enrichment tool to help students struggling in math. (Kergick Dep. Vol. 1 at 146.)

715. Students at Panther Valley can utilize My Access, which provides reading or language arts enrichment. (Kergick Dep. Vol. 1 at 146.)

716. Panther Valley has a partnership with the American Reading Company (ARC) to provide students with independent reading materials. (Kergick Dep. Vol. 1 at 149.)

717. The Panther Valley Intermediate School has a student garden funded through a grant from St. Luke's. (Mace Dep. at 59.)

718. Children in Panther Valley have access to a Head Start program run in Coaldale. In addition, early intervention services are available from the Carbon Lehigh IU. (Kergick Dep. Vol. 1 at 42-44.)

***86** 719. Until the 2021-22 school year, Panther Valley was not able to offer a pre-K program due to lack of funding. (Tr. at 409-10.) Eighteen students in Panther Valley now participate in a Pre-K Counts program. The program is housed in Panther Valley's Elementary School but is staffed by the Lehigh Valley Learning Children's Center. The program is paid for through the Pre-K Counts program, not by Panther Valley. (Tr. at 410-11, 592-93.) Panther Valley does not have enough money, teachers, or space in its buildings to provide universal pre-K to all eligible students. (Tr. at 410-11.)

720. In Panther Valley, an assessment called DIBELS, which measures early literacy skills, indicated that at the start of the 2018-19 school year, only 42% of incoming kindergarten students were on level, and of the 57% of students that were below benchmark, 33% were so behind that they needed "intensive" interventions. (PX-00821; Tr. at 412-13, 419-20.)

721. Students at Panther Valley who failed a given minimum number of courses can attend summer school to make up the credits. The summer school runs from 6th grade to 12th grade and covers the core courses. Students can also take courses online if they are not able to take necessary courses that they failed during the school year. (Kergick Dep. Vol. 1 at 105-06.)

722. Due to budgetary constraints, Panther Valley had to cut tutoring programs and summer school beginning in the 2019-20 school year. (Tr. at 429-30, 855-56.) The programs have only been restored as a result of one-time COVID funding. (Tr. at 429-30.)

723. A passing grade at Panther Valley indicates that the teacher has evaluated the student's knowledge of the material and determined that the student learned the subject of the course. (Kergick Dep. Vol. 2 at 270-71.)

724. Likewise, Ms. Mace stated that student grades reflect whether students met the goals and objectives set by their teachers. (Mace Dep. at 28.)

725. During Quarter 4 of the 2018-19 school year, Panther Valley's high school students received an A, B, or C 84.3% of the time. (LR-05091-00006.)

726. The distribution of Quarter 4 grades among Panther Valley's high school students in the 2017-18 and 2016-17 school years for high school students was similar to the distribution of grades in the 2018-19 school year. (LR-05091-00006.)

727. In 2018-19, Panther Valley's intermediate school students were graded on a traditional letter grade scale (A, B, C, D, and F) and on a proficiency grade scale (advanced, proficient, basic, and below basic). During Quarter 4 of the 2018-19 school year, based on the traditional letter grade scale, Panther Valley's intermediate school students received an A, B, or C 86.8% of the time. (LR-05091-00006.)

728. During Quarter 4 of the 2018-19 school year, based on the proficiency grade scale, Panther Valley's intermediate school students were graded as advanced or proficient 98.3% of the time. (LR-05091-00006.)

729. The distribution of Quarter 4 grades among Panther Valley's intermediate school students in the 2017-18 school year was generally consistent with the distribution of grades in the 2018-19 school year, for grades under both the traditional scale and the proficiency scale. (LR-05091-00006.) Likewise, the distribution of Quarter 4 grades among Panther Valley's intermediate school students in the 2016-17 school year was generally consistent with the distribution of grades in the 2018-19 school year for grades

William Penn School District; Panther Valley School..., Not Reported in Atl....

under the traditional scale. However, for 2016-17, grades were not reported on a proficiency scale. (LR-05091-00006.)

*87 730. During the 2018-19 school year, 99.80% of elementary students and 99.78% of intermediate students were promoted to the next grade level at Panther Valley. (LR-05029A-00004.) Superintendent McAndrew explained “[w]e’re not in the business of failing kids.” (Tr. at 688.) Instead, he explained:

We pass students sometimes by differentiating instruction. And sometimes when we differentiate instruction, one student may master it, another student may not master it. He may show how to do it in a different way. He may show that by, you know, how he's acting in class, the effort he's giving. So we may have to change an assessment for him to pass.

(Tr. at 688.)

731. Panther Valley

tracks academic growth in a number of ways, including, but not limited to: formative and summative assessments, grades, standardized testing, and benchmark assessment tools. Not all tests are used at all times, but these assessments include, but are not limited to, PVAAS data, PSSAs, keystones, and local benchmark assessments, such as star reading and star math, Fountas and Pinnell benchmark assessments, Scholastic Reading Assessment, Newsela, and Classroom Diagnostic Tests.

(Panther Valley’ Response to Interrogatory No. 2, 12/16/2019.)

732. Panther Valley “uses information regarding academic growth in numerous ways, including, but not limited to, school district awards, in-class instruction and support, evaluations for the child find process for special education, class placement decisions, and gifted determinations.” (Panther Valley’s Response to Interrogatory No. 3, 12/16/2019.)

733. Former Superintendent Kergick believed that PVAAS is the best way to measure student growth. (Kergick Dep. Vol. 2 at 409.)

734. During the 2018-19 school year, Panther Valley districtwide met the PVAAS growth standard for the math and ELA PSSA assessments. (LR-05029A-00001.)

735. During the 2017-18 school year, Panther Valley districtwide met the PVAAS growth standard for the ELA PSSA assessment, and it exceeded the growth standard for the Literature Keystone Exam. (LR-05029A-00001.)

736. During the 2016-17 school year, Panther Valley districtwide met the PVAAS growth standard for the ELA PSSA assessment, and it exceeded the growth standard for the Literature Keystone Exam. (LR-05029A-00001.)

737. During the 2015-16 school year, Panther Valley districtwide met the growth standard for the ELA PSSA assessment and exceeded the growth standard for the math PSSA and Literature Keystone Exams. (LR-05029A-00001.)

738. During the 2014-15 school year, Panther Valley districtwide exceeded the growth standard for the Literature Keystone assessment. (LR-05029A-00001.)

739. During the 2013-14 school year, Panther Valley districtwide exceeded the growth standard for the Literature Keystone Exam. (LR-05029A-00001.)

740. Between 2016-17 and 2018-19, Panther Valley’s PVAAS scores for the PSSA exam showed that the district met or exceeded the growth standard for 21 out of 31 (67.7%) of student levels (which includes both “single grade levels” and “across grade levels”) reported by the Department during that time frame. (LR-05034A-00001.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

741. With regard to Panther Valley's special education students, during the 2017-18 and 2018-19 school years, the district met or exceeded the growth standard in 58% of "single grade levels," and 75% of "across grade levels," reported by the Department. (LR-05036A.)

*88 742. With regard to Panther Valley's economically-disadvantaged students, during the 2017-18 and 2018-19 school years, Panther Valley met or exceeded the growth standard in 60% of "single grade levels," and in 75% of "across grade levels," reported by the Department. (LR-05035A.)

743. The number of students at Panther Valley who score at benchmark levels on the DIBELS test increases each year as a result of the education provided by the district. (Kergick Dep. Vol. 2 at 238.)

744. Former Superintendent Kergick testified that Panther Valley has made minimal progress in closing the achievement gap. (Kergick Dep. Vol. 2 at 248.)

745. Panther Valley's intermediate school is exceeding statewide growth standards for math and is meeting statewide growth standards for science/biology. Although across the district Panther Valley met various statewide growth standards, the intermediate school is not meeting the statewide growth standards in ELA. (Mace Dep. at 26.)

746. Students at Panther Valley cannot graduate without having sufficient passing credits, although, for special education students, there could be different requirements because of an individualized education plan (IEP). (Kergick Dep. Vol. 2 at 262-63.)

747. In 2019-20, 81.52% of students in Panther Valley's four-year cohort graduated, 85.09% of students in the five-year cohort graduated, and 86.92% of students in the six-year cohort graduated. (LR-05029A-00003.)

748. During the 2018-19 school year, Panther Valley's five-year cohort graduation rate for economically-disadvantaged students was 92.86%, compared to the state average of 84.15%. (LR-05032-00001.)

749. Every year, Panther Valley submits a documentation to the Department, outlining the number of graduates that

are moving on to college, military positions, or employment. For the 2019-20 school year, 47 out of 80 (58.8%) Panther Valley graduates reported that they planned to attend college or postsecondary school, 5 planned to join the military, 10 planned to join the workforce, and 18 did not report anything. During the 2018-19 school year, 67 out of 96 (69.8%) Panther Valley graduates planned to attend college or postsecondary school, 9 planned to join the military, 11 planned to join the workforce, and 9 were unaccounted for. (Tr. at 684-91; LR-01921; LR-00220.)

750. Panther Valley students often get scholarships to college because of their participation in Panther Valley's JROTC program. (Tr. at 438.)

751. In 2018-19, 88.21% of Panther Valley students met the career standards benchmark. In 2017-18, 97.24% of Panther Valley students met the career standards benchmark. (LR-05029A-00012.)

752. At a 2017 presentation, former Superintendent Kergick stated that "[s]tudents' test scores tell us more about the community they live in than what they know." (LR-00294-015.) Superintendent McAndrew testified his predecessor's "beliefs are not the same as everyone in Panther Valley []." (LR-00294-015; Tr. at 651-52.)

753. According to Superintendent McAndrew, his predecessor believed that there were significant issues regarding standardized assessments and that standardized assessment results do not accurately reflect the capabilities of the district's students. Rather than looking only at its assessment scores, former Superintendent Kergick believed that Panther Valley is a "terrific school district." (LR-00271-00098-00100; Tr. at 641-48.)

*89 754. A copy of a 2018 PowerPoint presentation by former Superintendent Kergick to Panther Valley staff stated it was unfortunate that the district had been evaluated based on its standardized achievement test scores. The PowerPoint presentation also indicated that standardized test scores do not measure a variety of important attributes, including persistence, leadership, creativity, civic-mindedness, self-discipline, reliability, motivation, and resilience. (LR-00340-00017-00018; Tr. at 652-53.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

755. Former Superintendent Kergick also disseminated a newsletter reprinting an article about standardized achievement tests. According to the newsletter, “research shows that the outcomes of standardized tests don't reflect the quality of instruction as they're intended to.” The article in the newsletter went on to explain:

To be clear, this doesn't mean that money determines how much students can learn. That couldn't be further from the truth. In fact, our results demonstrate that standardized tests don't really measure how much students learn, or how well teachers teach, or how effective school leaders lead their schools. Such tests are blunt instruments that are highly susceptible to measuring out-of-school factors.

(LR-03105-00002–00003; Tr. at 658-59.)

756. According to the newsletter, grades are a better indicator of what students know than standardized achievement test scores:

Although there are ideological disputes about the merits of standardized test results, the science has become clear. The results suggest standardized tests results tell more about the community in which a student lives than the amount the student has learned or the academic, social, and emotional growth of the student during the school year.

Although some might not want to accept it, over time, assessments by teachers are better indicators of student achievement than standardized tests. For example, high school GPA, which is based on classroom assessments, is a better predictor of student success in the first year of college than the SAT.

(LR-03105-00003; Tr. at 659-60.) Superintendent McAndrew testified that these were the views of former Superintendent Kergick.

757. Panther Valley operates in three buildings. The elementary school houses grades K-3. The intermediate

school, which was built between 2008 and 2009, houses grades 4-6. The junior-senior high school includes grades 7-12. Within the junior-senior high school, the seventh and eighth graders are located in their own wing, which was built in 2015. (Tr. at 265-66, 576.) To house the project, the district closed and filled in the school's pool, which was very expensive to operate. (Tr. at 852-53.)

758. At trial, Superintendent McAndrew described Panther Valley's elementary school as “in rough shape. It's awful. It's awful that our kids are in that kind of an environment.” (Tr. at 448.) The building is “very old,” with cracks in the cement and an outdated roof that needs to be replaced and constantly leaks, creating water damage. (Tr. at 445-50, 849.)

759. Panther Valley teacher Ms. Yuricheck testified that the roof has leaked since she initially taught first grade in that building 12 years ago: “[I]n my first grade classroom you could see the sky. There was a hole in the ceiling in my room that you could literally look up and see the sky.” (Tr. at 849.) When it rains significantly, someone at the elementary school has to flip a switch for a pump in the courtyard to prevent flooding of the school. (Tr. at 248, 448.)

*90 760. The cement ramp for people with disabilities is not accessible due to the significant cracks therein. (Tr. at 446.)

Tabular or graphical material not displayable at this time.

(PD-00001-0009.)

761. Outside the elementary school, there are four or five trailers that used to house a portion of the intermediate school students. The portable trailers are so dilapidated that they are structurally unsound and falling apart, but Panther Valley does not have the funding to remove them, so they remain on the property. (Tr. at 445-46.)

762. The junior-senior high school is in poor condition. The roof leaks in this building too, and the district is repeatedly forced to proactively search for mold. (Tr. at 248, 788-89.) There are cracked or missing tiles along the walls. (Tr. at 449.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

763. All of Panther Valley's buildings are heated, but in the winter, there are four or five classrooms that are so cold, Panther Valley decided to end the dress code to allow students to wear hooded sweatshirts. (Tr. at 447-48.)

764. The intermediate and high school buildings have air conditioning. The elementary school has no air conditioning, so it is very hot in the summer and at the beginning of the school year. (Tr. at 274-75, 447.) The junior-senior high school's HVAC system in its cafeteria was recently improved. (Tr. at 624-26.)

765. Seventy-five kindergarteners must use one toilet and two urinals. (Tr. at 248.)

766. Superintendent McAndrew testified that the district does not have any plans to fix these facility issues, because “[t]here's just no money to do that.” (Tr. at 450.)

767. All students, except those in grades K-3, have a science lab available to them. However, Superintendent McAndrew explained that these “science labs” are actually “lab tables,” which are “different tables that [the students] can do experiments on.” Superintendent McAndrew also explained that the science labs at the senior high school are “much older,” “outdated,” and “not as nice or fitted as the other buildings.” (Tr. at 634.)

768. Panther Valley has a gym in each of its school buildings. Regarding the condition of the junior-senior high school building, witnesses from Panther Valley mentioned that half of the gym could not be used due to a crack in one wall. (Tr. at 850.) However, the accident that caused the crack (a car hitting the gym wall) occurred only a week or two prior to when Superintendent McAndrew and Ms. Yurichек testified at trial. (Tr. at 894.)

769. The parking lot at the Panther Valley Junior-Senior High School was recently repaved. (Tr. at 626-27.)

770. Panther Valley has athletics fields, one of which was renovated approximately 10 years ago through a grant. The district also has a baseball field and a softball field. Each school has a gymnasium. The gymnasium in the intermediate school is used for varsity sports because the high school gymnasium is in need of repair. (Kergick Dep. Vol. 1 at 202-03.)

771. Panther Valley created and publicly posted a video showing its elementary school. In the video, Panther Valley's elementary school appears clean and structurally sound. (LR-03006.) The elementary school has bulletin boards and decorations throughout hallways and classrooms. Every classroom shown in the video appears to have a sufficient number of desks with accompanying chairs for student use. The video also shows various carts, bins, shelves, and cabinets containing student supplies. In the video, the school has both a gymnasium and cafeteria, which at the time appear clean and functional. (LR-03006.) Superintendent McAndrew explained the video was taken over the summer before school began “when [Panther Valley's] facilities are at their cleanest.” (Tr. at 508.)

*91 772. Panther Valley created and publicly posted a video of its intermediate school. In the video, Panther Valley's intermediate school appears clean and in good condition. (LR-03009.) The video depicts a classroom in the intermediate school, which appears decorated and has bulletin boards. There appear to be sufficient desks and accompanying chairs. The video shows hallways in Panther Valley's intermediate school, that appear clean, with student lockers, and decorated with posters and the school's motto. A sink with soap, hand sanitizer, and paper towel supplies is located in a hallway for student use. There are lab tables in the science classroom depicted in the video. (LR-03009.)

773. Panther Valley created and publicly posted a video depicting the seventh/eighth grade wing of its junior-senior high school and the gym. In the video, there appears to be a large, clean lobby, containing a statue of a panther that is surrounded by trophy display cases. Superintendent McAndrew testified the statue has missing teeth that the district has not been able to fix over the years. (Tr. at 784.) The video shows a school library and a school nurse who is available to students “throughout the day.” The video depicts some seventh grade classrooms, which have desks and accompanying chairs. The video describes the seventh grade classrooms as “large” and “fully decorated.” The video shows a science lab with lab tables in the junior-senior high school, and what is described in the video as a “newly, almost completed cafeteria,” and large gym with a basketball court, before it had been damaged. (LR-03010.) Superintendent McAndrew testified that the video showed that part of its building because it is Panther Valley's “nicest, newest wing.”

William Penn School District; Panther Valley School..., Not Reported in Atl....

having been constructed in 2015. (Tr. at 510, 576, 873.) He further explained that all of the videos were “systematically aligned to look good,” so students would want to come back after COVID and not enroll in cyber school. (Tr. at 783-84.) Superintendent McAndrew explained why select portions of the schools were shown:

[O]ur job is to promote and get morale and have our kids here and be positive. You know, we're not showing them things that look at this science lab that has nothing and has, you know, cables coming down from the – you know, from the ceiling or our roof leaking or those type of things. We try to keep it positive[] because that's what we do. That's what we do as educators. There's negative, but we promote the positive.

(Tr. at 785.)

774. The district's school buildings have desks and chairs for its students. (Tr. at 633-34.)

775. Ms. Yuricheck testified to using the same social studies textbook when she started teaching fifth grade 10 years ago. The textbook is from 1997. It lists Bill Clinton as the last president and references population data from the 1990 Census. Given their age, the textbooks “are in pretty bad shape,” and there are not enough for all students. As a result, students generally cannot take them home. (Tr. at 392-93, 829-31.)

776. Because of the age of her textbooks, Ms. Yuricheck testified that she spends approximately \$300 of her own money each year to purchase materials to supplement the curriculum. Ms. Yuricheck explained she does this “[f]or the kids. I mean, I want them to have the best learning possible. ...” She also purchases, with her own funds, pencils, glue sticks, crayons, and construction paper. In addition to expending her own money for materials, Ms. Yuricheck also spends several hours a week, outside of class, trying to find materials to incorporate into her lessons. (Tr. at 832-33.)

777. When asked how learning in her classroom would be impacted if updated textbooks were purchased, Ms. Yuricheck responded:

*92 Oh, it would be wonderful. I could tell you for me, it would just save me so much time. Right now because my textbook is so old we use Google Classroom, which is our online learning format. So I actually have to take my phone and use – it[']s an app ... and in order to put my textbook online for the kids, I've had to scan every page with my phone so I can upload it to Google Classroom. Having a new textbook – and the newer ones now you have that online component – I wouldn't have to worry about doing any of that. And it would be much more engaging for the kids as well.

(Tr. at 833-34.)

778. Through the use of ESSER funds, Panther Valley was able to update its math and Spanish textbooks. Superintendent McAndrew testified the district was not able to update all of its textbooks because it “had to prioritize.” (Tr. at 393.)

779. Until very recently, Panther Valley did not have enough computers for all students to use. Superintendent McAndrew explained, “our students only have [one-to-one] because of the pandemic.” (Tr. at 329.) Panther Valley also does not have resources to replace devices, so “down the road it's just going to be one more hurdle” to replace 2,000 computers that were bought with COVID funds. (Tr. at 369.)

780. Superintendent McAndrew experienced the impact of the technology disparities firsthand: in March 2020, he was the principal of a school in the Jim Thorpe School District, where he had sufficient funding to “have a complete [virtual learning] program in place” within a week of the shutdown. (Tr. at 371.) At the same time, as a parent of a Panther Valley student, Superintendent McAndrew watched

William Penn School District; Panther Valley School..., Not Reported in Atl....

as “March, April, May, June” went by and “we weren’t getting any education or very little education ... because we weren’t ready for it and we didn’t have those devices.” (Tr. at 371.) Superintendent McAndrew indicated that, even after every student and every teacher had a computer, “it was kind of, like, good luck, here you go. We weren’t able to roll out one[-]to[-]one like other schools did over a time period with professional development. So even though we had the devices, it took us time for our teachers to figure out, on their own ... or [with the] one person ... that handles our technology” how to use the new systems. (Tr. at 332-33.)

781. Superintendent McAndrew explained that once the district started to transition students back to in-person learning, the students were given the option to be in-person or remote. For the students who were in-person, they had to be sent home to eat their lunches and could not be provided full days of instruction because the facilities were too small. (Tr. at 375.) When those students left, the teachers would log in and provide instruction to the students who were at home for the rest of the day. (Tr. at 375.) Students who were in person received only five to five and a half hours of instruction, and about a third of the students, who were online, “took their lessons and tried their best.” (Tr. at 462.) Superintendent McAndrew indicated that the district is aware that the students have suffered a learning loss as a result of the initial lack of instruction for three to four months due to lack of technology in the Spring of 2020 and the process of some students returning to in-person learning, and others remained remote. (Tr. at 461-63.)

782. In order to address some of this issue, the district created the new position, “family development specialist,” in its elementary school to work with students who attended kindergarten online and did not have the social skills they need to be successful. (Tr. at 360; *see also* FOF 649.)

*93 783. Meanwhile, Panther Valley’s internet connection in the buildings is very unreliable and often does not work, which affects teachers’ abilities to teach their lessons. (Tr. at 443-44.) Panther Valley plans to use a grant it received from Ametek Corporation and ESSER funds, to update its Wi-Fi, but it has not been able to complete the update due to lack of maintenance staff. (Tr. at 443, 470-71, 742-44.)

784. Even before the COVID pandemic, during which Panther Valley purchased Chromebooks for each of its

students in all three schools, Panther Valley’s intermediate school had at least 12 Chromebooks in every classroom for students to use. The intermediate school also had three computer laboratory rooms. (Tr. at 629-33; Mace Dep. at 43-45.)

785. The district has Smartboards and Promethean boards, which are an updated version of Smartboards, in many of its classrooms, which require upgrading and maintenance. Since the summer of 2020, the district has continued to try to get one for every classroom. (Tr. at 632-33.)

786. Teachers in Panther Valley have had a Smartboard in their classrooms for the past six or seven years and have access to Google Classroom to supplement existing textbooks with online lessons and videos. (Tr. at 833-34, 873-74.)

787. The district also uses ClassDojo, which is a communication app that facilitates communication between teachers and parents. (Tr. at 890-91.)

788. Panther Valley receives funding from the federal government, state government, local earned income and property taxes, businesses, and grants. (Tr. at 291.)

789. Panther Valley anticipates receiving about \$8.5 million in ESSER funds. (Tr. at 286.)

790. With ESSER funds, Panther Valley purchased Chromebook laptops for each of its students in the district; updated its curriculum by adding new courses for its students; purchased a new Phonics program, including textbooks for its English classes from kindergarten through third grade; purchased new math textbooks for its kindergarten through sixth grade students and a new online mathematics series for its seventh and eighth grade students; purchased new Spanish textbooks; paid paraprofessional salaries; re-initiated its summer school course offerings for sixth through twelfth grade students, which allows students with failing grades to take remedial classes for class credit; added numerous Smartboards in its classrooms; purchased materials for its STEM program in the intermediate school; maintained numerous student programs, including art, music, athletics, and its JROTC program; purchased additional special education supplies; and was able to upgrade some of its Wi-Fi hot spots throughout some of its buildings, but the process

William Penn School District; Panther Valley School..., Not Reported in Atl....

it not complete. (Tr. at 286, 393, 430-31, 444-45, 544-45, 587-89, 592, 621, 741-44.)

791. The district realizes these are one-time funds but as Superintendent McAndrew explained, “[w]e felt at the time the way to ... live for another day[] was to use this money to get us through to keep the doors open. ...” (Tr. at 284-85.)

792. Due to the high rate of poverty, Panther Valley provides free breakfast and lunch to all of its students. (Kergick Dep. Vol. 1 at 74-75.)

793. Panther Valley receives funding designated for providing its students free breakfast and lunch. The district makes money from its food service program and reinvests that money into the cafeteria. For example, the district used those funds to purchase new ovens costing about \$68,000. (Kergick Dep. Vol. 1 at 76.)

*94 794. From fiscal year 2014-15 to fiscal year 2019-20, Panther Valley's revenue has increased by \$3,898,387.33. (LR-05031-00001.)

795. In 2014-15, Panther Valley's state revenue per ADM was \$6,734.32. In 2019-20, its state revenue per ADM increased to \$8,109.14. (LR-05030-00001.)

796. In 2014-15, Panther Valley's total revenue per ADM was \$12,996.58. In 2019-20, its total revenue per ADM increased to \$18,150.11. (LR-05030-00001.)

797. In 2014-15, Panther Valley's expenditures per ADM were \$13,531.86. In 2019-20, its expenditures per ADM increased to \$18,645.44. (LR-05030-00001.)

798. Nonetheless, Superintendent McAndrew believes that, “overall, [Panther Valley]’s circumstances have not changed.” (Tr. at 745; LR-02191.)

799. During the 2019-20 school year, Panther Valley spent about \$28.5 million. During the 2020-21 school year, Panther Valley planned to spend about \$28.2 million. The district plans to spend \$34.4 million in 2021-22. (Tr. at 700-01; PX-04603.)

800. In 2019-20, Panther Valley had a capital projects fund as well as a general fund. The capital projects fund contained

\$1.1 million. On Panther Valley's most recent AFR, for 2019-20, there was a restricted fund balance in the capital projects fund of \$1.1 million and a total governmental fund balance of \$2.3 million. (Tr. at 713-15; PX-04605.)

801. For the 2021-22 school year, Panther Valley received over \$9.7 million in BEF funding, which is about a \$730,000 increase, or an 8.1% increase, from the prior school year. (Tr. at 11625; LR-01581-00003.)

802. During the 2021-22 school year, Panther Valley expects to spend about \$198,000 on its JROTC program, \$118,000 on student activities, and \$330,000 on athletics. (Tr. at 700-01; PX-04603.)

803. In its 2021-22 budget, Panther Valley is projecting to receive \$9 million in BEF as part of its state revenue. (Tr. at 702-03; PX-04603.) Panther Valley is projecting to receive \$1.3 million in specialized education for school-aged pupil funding as part of its budgeted state revenue. (Tr. at 703; PX-04603.)

804. Department data shows for the 2021-22 school year, Panther Valley will receive an estimated \$1.45 million in special education funding. This amounts to an additional \$900,000 in state funding above the amount projected in Panther Valley's 2021-22 budget. (Tr. at 703-04; LR-04234; LR-04236.)

805. Superintendent McAndrew testified that the district has a new business manager who did not want to “overinflate” the amount of funding it would receive “because it was only an estimate[, so h]e kept that the same.” (Tr. at 702-05, 712-13.) He further testified that the district finalizes its budget before the state finishes its budget. (Tr. at 712.) Therefore, he explained the final general fund budget is a projection made the year before and does not actually reflect the actual funding of the district for the year that it denotes. In addition, circumstances may change throughout the school year, resulting in changes to how the funds are ultimately spent. (Tr. at 748-49.)

806. Superintendent McAndrew testified that Panther Valley's fund balance had dwindled as a result of having to use savings to cover increases in mandated costs. (Tr. at 499-500.) The fund balance would have been negative in the 2020-21 school year but for ESSER funds, which allowed the Panther Valley

William Penn School District; Panther Valley School..., Not Reported in Atl....

to continue functioning and avoid additional draconian cuts. (Tr. at 500; PX-04601-0028; PX-04603-0024.)

*95 807. Superintendent McAndrew acknowledged that, in addition to the general fund, the district has other funds such as its capital projects fund and cafeteria fund. (Tr. at 709-10, 713.)

808. Panther Valley's budgetary reserve was \$3.4 million for the 2021-22 school year, which Superintendent McAndrew explained is because of the \$8.5 million the district received in ESSER funds. (Tr. at 701.)

809. Superintendent McAndrew testified, "We're on the verge of bankruptcy. ... We make ... decisions knowing that's not in the best interest of students, but knowing that we have no other options at this point." (Tr. at 262.) That is, "we're trying our best to accomplish so much with such little resources, understanding that these kids are coming in behind and doing everything we can to catch them up." (Tr. at 257-58.)

810. Superintendent McAndrew also testified about the difficult decisions the district is forced to make:

Every decision we make, ... in the backgrounds of our minds, it's how are we going to fund this? Even the decisions we make, it's, okay, this is going to hurt this population, but we're going to make it because we need to help this needier population. But often someone's getting shortchanged.

(Tr. at 261.)

5. Lancaster

811. Petitioners presented the testimony of Dr. Damaris Rau, Mr. Przywara, and Amanda Aikens. Additionally, the parties designated the deposition testimony of Christopher Lopez. Dr. Rau is Lancaster's superintendent. She has held that position for six and a half years. (Tr. at 5032-33.) Mr. Przywara is Lancaster's Chief of Finance and Operations.

He has been at Lancaster for over 14 years. As the Chief of Finance and Operations, Mr. Przywara is in charge of all of the district's budgetary, financial, and daily operations. He also oversees the district's technology programs, human resources, school attendance, food services, transportation, and facilities. (Tr. at 5657, 5661.) Ms. Aikens has been an instructional coach at Lancaster's Kings Elementary School since 2001. In that role, she organizes professional development programs for staff, manages academic interventions and lesson plans, assists with student services, and coaches and teachers. Before becoming an instructional coach at Kings Elementary, she was a classroom teacher in Lancaster for 11 years. (Tr. at 5978-79, 5985.) Mr. Lopez is Lancaster's Director of Student Services. (Parties' Joint Designations of the 5/1/20 Deposition of Christopher Lopez (Lopez Dep.) at 7-8, 10.) Each of these witnesses credibly testified.

812. The district encompasses the City of Lancaster, which has approximately 60,000 residents, and Lancaster Township, a small municipality that could not afford its own school system. (Tr. at 5045-46, 6000-01.) It is one of the largest school districts in the state, with approximately 10,500 students. (Tr. at 5046.)

813. For the 2021-22 school year, Lancaster has an enrollment of 10,385 students. (Tr. at 5046; LR-05017A-00005.) Since the 2016-17 school year, when it enrolled 11,336 students, Lancaster's enrollment has declined by nearly 1,000 students. (LR-05017A-00005.)

814. Approximately 90% of Lancaster students are classified as economically disadvantaged. (Tr. at 5046.) For instance, King Elementary has approximately 400 students, nearly all of whom live in low-income households. (Tr. at 6000-01.)

*96 815. Lancaster serves about 500 homeless students. (Tr. at 5047.)

816. Lancaster provides its economically-disadvantaged students with uniforms, transportation, internet hotspots, breakfast, and lunch. (Tr. at 5058-61.)

817. Twenty percent of Lancaster's students are classified as special education students. (Tr. at 5046.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

818. In addition, approximately 20% of Lancaster's students are not native English speakers, ranking it fifth in the state. (Tr. at 5046; PX-04808.) Lancaster regularly has over 1,800 ELL students, nearly 500 of whom are refugees from countries like Nepal, Myanmar, and all across the Middle East and Latin America. (Tr. at 5046, 5082-83, 5698-99.) The number of Lancaster's ELL students has been increasing in part because the City of Lancaster welcomes and takes in refugees from around the world. (Tr. at 5056-57.)

819. Lancaster's demographics are as follows:

Tabular or graphical material not displayable at this time.

(PX-04808.)

820. Students in Lancaster speak between 50 and 60 languages other than English. (Tr. at 5046.) Ms. Aikens indicated that in a typical year as a teacher she had children speaking up to five different languages in her classroom alone, including Spanish, Swahili, Arabic, Thai, and Vietnamese. (Tr. at 5981-82.)

821. A number of factors that occur outside of the classroom have an impact on the ability of Lancaster students to learn, including, among others, homelessness, health issues, food insecurity, chronic absenteeism, and lack of access to proper clothing. (Lopez Dep. at 88-92.)

822. However, Ms. Aikens testified, regardless of what students are facing outside of school, "when these students enter our four walls, it is our responsibility to help them access their education." (Tr. at 6001.)

823. Lancaster is a low-wealth, high-need, high-effort, low-spending district:

Tabular or graphical material not displayable at this time.

(PX-04831.)

824. According to the Fair Funding Formula, Lancaster has the 15th highest need student population in the Commonwealth. (PX-04831.) Mr. Przywara explained that, using the Fair Funding Formula, Lancaster effectively "ha[s] 17,387 students, not 11,418, when you factor in needs of a student." (Tr. at 5695.) He further explained that the student weights in the Fair Funding Formula do not account for homelessness or refugee status, and thus undercounts the true needs of Lancaster, and how much it is spending relative to those needs. (Tr. at 5698-99, 5703.)

825. Putting its need and wealth together, the district's local capacity per weighted student ranks 451 of 499 districts. (PX-04831.) By current expenditures per weighted student, Lancaster is 274th in the Commonwealth. (PX-04831.)

826. Moreover, according to the Special Education Fair Funding Formula, Lancaster has the 148th highest need in the Commonwealth. (PX-04831.) And by the Level Up formula, which combines both special education and general education need, Lancaster is the 28th lowest spending district in the Commonwealth. (PX-04778, Tab "Level Up Supplement," Column G; Tr. at 11733-35.)

*97 827. Lancaster cannot tax its way to sufficient funding. The district has raised its taxes each of the last 14 years, with an equalized millage which ranks 2nd in Lancaster County and 74th in the Commonwealth. (Tr. at 5710; PX-04831.) When measured by Local Effort Capacity Index, Lancaster's effort becomes even clearer, ranking 10th in the Commonwealth. (PX-04831.)

828. Lancaster employs approximately 869 teachers, all of whom are certified to teach in Pennsylvania. (Tr. at 5071.)

829. As of 2020-21, Lancaster employed 499 total support staff, including 464 full-time support staff and 35 part-time support staff. (LR-05017A-00008.)

830. A paraprofessional is present in each of Lancaster's kindergarten classrooms for at least half of each school day. (Tr. at 5411.)

831. At Lancaster, like in other school districts, each teacher is regularly evaluated, and the largest component of the evaluation is based on observations of the teacher's day-to-

William Penn School District; Panther Valley School..., Not Reported in Atl....

day practices in the classroom, which is the best way of measuring how well the teacher is performing as an educator. (Lopez Dep. at 79.)

832. In 2018-19, 100% of Lancaster's teachers were rated as satisfactory. Out of 749 Lancaster teachers who were rated that year, 697 of them were rated as proficient and 52 of them were rated as distinguished. (LR-05017A-00002.)

833. Between 2013-14 and 2018-19, out of 4,511 teacher ratings for Lancaster's teachers, only 10 teachers were rated as failing. (LR-05017A-00002.)

834. Lancaster has approximately 30 teachers who are emergency certified because they struggle to hire teachers certified in particular subjects. (Tr. at 5314.)

835. In 2020-21, the average classroom teacher at Lancaster had 12 years of teaching experience and had been teaching at the district for over 11 years. (LR-05017A-00006.)

836. As of 2020-21, the average salary for a Lancaster classroom teacher was \$70,265.70. By comparison, in 2012-13, the average salary for a Lancaster classroom teacher was \$58,673.25. (LR-05017A-00006.)

837. Lancaster offers its teachers a variety of health insurance plans. For a full-time teacher who is enrolled in the high-deductible health plan, Lancaster deposits into a health savings account: (i) no less than \$1,000, if the plan does not cover any of the teacher's dependents, or (ii) no less than \$2,000, if the plan covers the teacher's dependents. (Tr. at 5830; PX-00340-0032–0033.) These deposits represent half of the individual and family deductibles under the high-deductible health plan. (PX-00340-0054.) Additionally, the in-network deductible for the higher-premium “Green Plan” is zero dollars. (Tr. at 5833; PX-00340-0032.) Lancaster also provides its full-time teachers with dental and vision insurance. (Tr. at 5837; PX-00340-0036.)

838. Lancaster provides each of its teachers who are regularly on teaching duty for at least 10 hours per week with \$50,000 in life insurance coverage. (PX-00340-0035.) Lancaster also provides each of its teachers with disability insurance. (PX-00340-0035.)

839. Lancaster reimburses its certified teachers for the cost of obtaining up to 12 postsecondary credits per year, as long as the teacher earns those credits in a degree program that is reasonably related to his or her teaching duties. The amount is capped at what the per-credit tuition fee is at Millersville University, Penn State University, and Temple University. As long as the teacher works for Lancaster for at least two years after obtaining the credits, the teacher does not need to pay back the cost of the reimbursement. (Tr at 5838-39; PX-00340-0037.)

*98 840. Lancaster pays teachers up to an additional \$30 per hour to teach summer school or evening school. Lancaster also pays teachers an additional \$1,200 for participating in year-long curriculum writing activities for a given course. (Tr. at 5839-40; PX-00340-0040–0041.)

841. For its retiring teachers, Lancaster offers a number of benefits. Lancaster pays each of its retiring teachers \$375 per year of service as a “local benefit.” For example, a retiring teacher who taught at Lancaster for 25 years receives more than \$9,000. Additionally, Lancaster pays each of its retiring teachers up to \$110 for each unused “sick day,” depending on how many of those days the teacher has accumulated. (Tr. at 5841-43; PX-00340-0041–0042.) These amounts are separate from the retirement benefits that the teacher receives through PSERS. (Tr. at 5842.)

842. Lancaster pays its teachers for assisting with extracurricular athletics activities, with the level of pay linked to the number of hours that the district designates for the activities and the teachers’ level of experience with the activities. For example, the head coach of Lancaster's football team, if he has four or more years of experience with coaching the team, has assistant coaches, and supervises the Level 2 football program, would be credited with 387 hours for coaching the team, plus an additional 20 hours for having assistant coaches, plus an additional 20 hours for supervising the program. The coach would therefore receive compensation for 427 total hours, at a rate of \$20 per hour, which equals \$8,540. (Tr. at 5845-48; PX-00340-0047–0050.)

843. Lancaster pays its teachers an additional \$19.11 per hour for handling intramural activities. Lancaster pays its teachers for assisting with other extracurricular activities including \$5,565 per year to its mock trial adviser and \$6,300 per year for a choreographer. (Tr. at 5849-51; PX-00340-0051–0053.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

844. Lancaster encourages its teachers to take voluntary professional development courses and compensates them for up to four hours per month, at the rate of \$27 per hour. (Tr. at 5864-66; LR-00700.)
845. As of 2020-21, 558 of 1,022 professionals at Lancaster (over 54%) had obtained a master's degree or higher. (LR-05017A-00007.)
846. For the 2021-22 school year, the salaries for Lancaster's administrators, including principals, assistant principals, and directors of departments, range from \$71,200 to \$155,000. (Tr. at 5322-23; LR-01892-00008-00010.)
847. For the 2019-20 school year, Lancaster hired five full-time world language teachers, including one teacher for each of its middle schools. Lancaster hired these teachers as part of its efforts to become IB certified at the middle school level. (Tr. at 5327-28.)
848. King Elementary employs high-quality teachers. All teachers at King Elementary receive professional development opportunities. (Tr. at 6064-65.)
849. King Elementary has four ELL teachers, an emotional support teacher, a student and family resource specialist, a counselor, a reading support teacher, a math support teacher, a library and media specialist, an art teacher, and a music teacher. King Elementary also has a student specialist who supervises special education activities at the school and one other school. (Tr. at 6084, 6102-05.)
- *99 850. Lancaster lacks a sufficient number of ELL teachers to support its student needs. (Tr. at 5079.) The average student-teacher ratio is about 29 to 40 students per ELL teacher, which makes it very difficult for the teachers to provide students with the amount of support that the students need. (Tr. at 5088.) As a result, Lancaster is only able to provide ELL students with an education that meets the minimum mandated requirements. (Tr. at 5079.)⁵⁹
851. King Elementary has five building aides whose responsibilities at the school include lunch and recess monitoring, office paperwork, running classroom small groups, and meeting one-on-one with students. (Tr. at 6016-18.)
852. In 2019, Franklin and Marshall College surveyed 1,022 Lancaster employees, including support staff, teachers, Local Education Agency (LEA) staff, and leadership. As the survey results show, only 2% of those employees stated that Lancaster's biggest challenge was lack of resources and supplies. By contrast, 34% of them said that the biggest challenge is lack of discipline and student behavior and attitude. Similarly, only 4% of the respondents stated that smaller class sizes and better facilities are the things that would most improve Lancaster as a place to work, while 24% of them stated that consistently enforcing student discipline would improve the workplace. (Tr. at 5437, 5460-64; LR-01915-00004, -00025.)
853. In 2019, when Lancaster surveyed its staff, teachers, and leadership, 91% of the individuals who responded to the survey stated that the overall quality of education that Lancaster provided was excellent, above average, or average, 8% of the survey respondents stated that the overall quality of education was below average, and 2% of them stated that the overall quality of education was failing. (LR-01915-00004.)
854. In 2019, when Lancaster surveyed its staff, teachers, and leadership, 74% of the individuals who responded to the survey stated that they believed it was either certain or very likely that they would be working for Lancaster in 5 years. For the respondents who believed they likely would not be working for Lancaster in 5 years, 33% of them identified retirement as the reason for this belief. Only 4% identified "pay/salary not enough" as the reason why they might leave the district. Four percent of them identified "pay/salary not enough" as the reason why they might leave the district. None of them identified "resources are lacking/inequitable" as the reason why they might leave. (LR-01915-00010-00011.)
855. Lancaster has hired between 75 and 85 teachers to meet the specialized needs of its large body of ELL students. (Tr. at 5046, 5055-56, 5087-88.) Lancaster works with its teachers to help them understand, accommodate, and work with the different types of ELL students who are enrolled in its schools. Lancaster also provides the ELL students' parents and families with translators for meetings and translated documents. (Tr. at 5084-87.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

856. Lancaster employs three “cultural navigators,” who are former refugees. These individuals act as liaisons between the ELL students, their families, and the district’s teachers and administrators. The cultural navigators help the ELL students’ “families feel better about school.” They pick up parents for school meetings, explain to parents what is happening in the schools, and ensure that the ELL students are in the appropriate programming at their schools. (Tr. at 5085-87.)

*100 857. Lancaster employs about 20 Student and Family Resource Specialists, who are social workers. Each social worker has a caseload of approximately 500-600 students. (Tr. at 5091-92.) The Student and Family Resource Specialists have two primary responsibilities at the district. First, they provide mental health services to students in the district’s schools. Second, they provide support to students’ families outside of school. At least one of these specialists is stationed in each of Lancaster’s school buildings. (Tr. at 5090-91, 5414-15.)

858. Lancaster employs about 34 school counselors, who, like social workers, are mental health professionals. The school counselors provide one-on-one counseling services to students and teach classes on college readiness. (Tr. at 5092-94; Lopez Dep. at 39-40.)

859. Lancaster employs 11 psychologists, who each carry a caseload of approximately 1,000 students. (Tr. at 5096-98.)

860. Lancaster employs between 22 and 24 instructional coaches, who focus on helping classroom teachers to develop techniques and strategies for tailoring lessons to their students. (Tr. at 5449-50.)

861. Lancaster employs four School Resource Officers, who are in essence police officers. (Tr. at 5493-94.)

862. For the 2021-22 school year, Lancaster employs 15 reading specialists. (Tr. at 5404.)

863. The lack of intervention support in districts like Lancaster, where the MTSS triangle is flipped – with the majority of students needing Tier 2 and Tier 3 supports, means that students are not receiving the support they need. In Lancaster, 80-90% of students at the elementary school level need additional, more intensive support. (Tr. at 5077-78.)

864. In 2011, when federal stimulus money ran out and the state reduced BEF funding, Mr. Przywara testified Lancaster outsourced custodial staff, outsourced an alternate education program, and extracted concessions from staff that required them to pay additional funds to healthcare. (Tr. at 5663-64, 5672.) He also detailed how the district reduced the number of teaching positions that year by “well over a hundred teachers.” (Tr. at 5725.)

865. Every Lancaster classroom, across all grade levels, is “digital,” meaning that teachers can broadcast content from their iPads onto Apple TVs within the room. To support and assist teachers with using this technology and other types of technology, Lancaster employs two technology coaches. (Tr. at 5344-46, 6106.)

866. Lancaster employs 10 certified school nurses and about 20 health room nurses. The differing nursing titles reflect the differences in the nurses’ education and certification levels. (Lopez Dep. at 31-33.)

867. The average class size of kindergarten classes in Lancaster is 25 students. (Tr. at 5395.) In elementary school, the class sizes go up to 28 or 29 students, and average between 24 to 27 students. (Tr. at 5072.) In high school, core classes are typically 25 to 30 students. (Tr. at 5072.)

868. Former Lancaster teacher Ms. Aikens testified that when she had 28 students in her classroom, teaching effectively was “incredibly difficult”:

I had a full classroom, barely had enough desks for all of my students. They had very high needs. I had language learners in there, I had students with learning disabilities, and very high social-emotional needs, and I was one person to 28 students. So the relationships that I was able to build with them were not as strong. I wasn't able to see them all every day in small group, which is best practice; and I wasn't able to assess their levels and

William Penn School District; Panther Valley School..., Not Reported in Atl....

their needs to the same depth that I was able to when I had 20 students.

*101 (Tr. at 5983.)

869. As of 2020-21, Lancaster had a student-classroom teacher ratio of 12.8-to-one. (LR-05017A-00009.) This ratio is better than the state average of 14.21 students-per-classroom teacher. (LR-05038A.) However, as Mr. Przywara explained, student-teacher ratio is not the same as class size because teacher counts often include non-regular classroom teachers, such as ELL teachers or Title I teachers, and because the overall ratio includes atypically sized classes, such as self-contained special education classrooms. (Tr. at 5727-29.) In Lancaster, for example, the district has approximately 60 special education classrooms that contain only 8-12 students each, (Tr. at 5727-29), and 82 ELL teachers, (Tr. at 5079).

870. Lancaster's student-classroom teacher ratio has decreased over the last nine years. In this regard, in 2012-13, 2013-14, and 2014-15, Lancaster had a student-classroom teacher ratio of 14.4-to-1. (LR-05017A-00009.)

871. As of 2020-21, Lancaster had a student-total personnel ratio of 6.9-to-one. (LR-05017A-00009.) This ratio is better than the statewide average of 7.14 students-per-total staff. (LR-05038A.)

872. Lancaster's student-personnel ratio has likewise decreased over the last nine years. In this regard, in 2012-13, 2013-14, and 2014-15, Lancaster had a student-personnel ratio of between 7.5 and 7.7-to-1. (LR-05017A-00009.)

873. A 2019 study commissioned by Lancaster found that 76% of Lancaster students during the 2018-19 school year were in classrooms with 25 or fewer students. (Tr. at 5393-5400; LR-00837-00059.) However, Dr. Rau clarified that the study "counted classrooms that are not classrooms." (Tr. at 5400.)

874. In response to the COVID pandemic, Lancaster used ESSER funds to develop and hire teachers for its Full Circle Learning Program, which is a program for its kindergarten through third grade students. Through this program, Lancaster offers smaller class sizes and social

distancing for students who are concerned about COVID. Each of the classes is limited to 16 students and has a teacher and classroom assistant. (Tr. at 5315-18.)

875. Lancaster plans to use some of its ESSER funds to maintain small class sizes by, for example, maintaining an average staff-to-student ratio of below 1-to-25 in core elementary school classrooms and 1-to-20 in kindergarten classes. (Tr. at 5711, 5941-44; LR-03208-00006-00008.)

876. Lancaster invests in its students' readiness through a comprehensive K-12 college and career readiness curriculum, rigorous courses, and providing opportunities to take college courses at no cost. (Tr. at 5510; LR-02301.)

877. Through a partnership with ARC, Lancaster purchased classroom libraries of 300 books for grades K through 5, but Dr. Rau testified they "learned quickly it wasn't enough books," so teachers "trade books" and the district plans to use ESSER funds to purchase more. (Tr. at 5112, 5341, 5433.) Through this partnership, Lancaster has acquired over 23,000 new books plus new books for its fourth-grade and fifth-grade classrooms. (Tr. at 5110, 5340.) Since engaging with the ARC program, which encourages students to read independently, more Lancaster students are now reading on their grade level. (Tr. at 5433-34; LR-00873-00010.)

*102 878. According to Dr. Rau, with few exceptions, students in fourth grade or higher cannot take their textbooks home because the district does not have enough to enable that. As a result, teachers find open-source materials and provide copies to the class. (Tr. at 5114.)

879. In addition, some of its textbooks are outdated. (Tr. at 5113.) By way of example, its physics textbook is 12 years old. (Tr. at 5349-50.) Dr. Rau also described how some high school textbooks list countries that are no longer in existence and do not list newer countries. (Tr. at 5115.) Because science is an ever-changing area, Dr. Rau testified that when the district gets to those levels, it will likely purchase electronic textbooks, "but that's not at this time." (Tr. at 5115.) Dr. Rau expects it is "going to take a lot of years" to replace social studies and science course textbooks at the high school level. (Tr. at 5350.)

880. The majority of the curriculum in Lancaster is not aligned to state standards. When Dr. Rau joined the district as

William Penn School District; Panther Valley School..., Not Reported in Atl....

superintendent in 2015, none of the curriculum was aligned to state standards. (Tr. at 5104-05.) Since then, Lancaster has been working on curriculum revisions for many years, and some portions have been completed, but the staff has not been able to finish the rewriting process. (Tr. at 5106.) This is because the district has had to rely on teachers to rewrite the curriculum – but pulling teachers out of classrooms meant that students were missing class time, and teachers did not have the ability to do it after school because they were engaged in other school-related or teaching activities at that time. (Tr. at 5106-08.)

881. While the Department provides some curriculum resources on its website, Dr. Rau explained, they are framework or “the bones.” (Tr. 5106.) It is then the role of the school districts to “put the meat on the bones” – to write the curriculum that details how to meet the standards, including what resources to use, and the plan to implement the curriculum. (Tr. at 5106, 5108-09.) As Dr. Rau explained, curriculum writing and revising is a cycle that is typically done every seven years: the curriculum is written, then given to the teachers to pilot, after which data is gathered from teachers, and then the district has to find the resources to match the curriculum, all of which takes time and money. (Tr. at 5108-09.)

882. Lancaster plans to spend roughly \$1,225,336 of its ESSER funds on its curriculum by making two types of investments: (1) investments in standards-aligned curriculum for all grade levels, focusing on four core content areas (ELA, science, math, and social studies), and (2) investments in professional development programs regarding the effective implementation of the standards-aligned curriculum. (LR-03208-0004.)

883. Lancaster's high school, McCaskey High School, offers required core courses, including courses in ELA, math, science, and social studies. (LR-00716-00036–00063.) ELA, math, science, and social studies offered at McCaskey include:

- a. ELA: Communication Arts for Grades 9, 10, 11, and 12; Honors and AP Language and Composition; Honors and AP Literature and Composition; IB English A: Language & Literature SL; IB English A: Literature HL Year 1; and IB English A: Literature HL Year 2.

*103 b. Math: Algebra and Honors Algebra; Geometry and Honors Geometry; Advanced Algebra and Honors Advanced Algebra; Statistics; Algebra III/Trigonometry; Pre-Calculus and Honors Pre-Calculus; Financial Algebra and Honors Financial Algebra; IB Math; AP Calculus; and AP Statistics.

c. Science: Foundations of Science; Biology I, II, and III; Honors Biology I and AP Biology; Chemistry, Honors Chemistry, and AP Chemistry; Physics and AP Physics; IB Biology; IB Chemistry; IB Environmental Systems & Studies; IB Physics; IB Design Technology; AP Environmental Science; and Anatomy and Physiology.

d. Social Studies: Modern U.S. History, Honors Modern U.S. History; AP U.S. Government and Politics; AP World History; World Cultures; Civics and Government; IB History of the Americas; IB History of Europe; and IB Twentieth Century Topics.

(LR-00716-00036–00052.)

884. McCaskey High School also offers coursework in art, music, theater, physical education/wellness, and world languages, including the following courses:

a. Art: General art studies; Art history; Clay; Computer photography; Drawing and painting; Illustrator design; Printmaking; Three-dimensional design; Studio art; and IB art and design.

b. Music: Piano lab; Guitar lab; IB Music; AP Music Theory; Music Technology; Color Guard; Band; Orchestra; Mixed Chorus; Vocal Ensemble; and Chamber Choir.

c. Physical Education/Wellness: Fitness for Life; Personal Wellness; IB Sports, Exercise, and Health Science; Strength and Conditioning I and II; Football/Basketball; Advanced Baseball/Conditioning; Aerobic Training/Stress Management; Women's Health and Fitness; Advanced Net Games; Women's Strength and Conditioning/Self Advocacy; and Aquatics/Lifetime Sports.

d. Theater: Theater I, II, and III; Stage and Design Production I & II; IB Theater; and Movement in Theater.

- e. World Languages: French I, II, III, and IV; Honors French I, II, and IV; IB French III, IV, and V; German I, II, III, and IV; Honors German I and II; IB German III, IV, and V; Spanish I, II, III, and IV; Honors Spanish I, II, and III; AP Spanish V and VI; IB Spanish III, IV, V, and VII; and IB Mandarin V.

(LR-00716-00052–00063.) Dr. Rau testified these courses are not offered every year. For example, at the time of trial, Lancaster was not offering Mandarin, and while it offered various levels of IB Spanish, they were taught at the same time in the same classroom. (Tr. at 5590.)

885. In 2019, Lancaster was nationally recognized as a “best community” in musical education for the seventh year in a row. (Tr. at 5428; LR-00873-00004.)

886. McCaskey High School also offers instruction in technology, business, and a variety of other subjects. Between 40 and 50 different elective courses are listed but not always offered. (Tr. at 5120-21, 5123-24, 5589; LR-00716.)

887. For the 2021-22 school year, McCaskey High School is offering the following courses, among many others: Introduction to Computer Science; Cyber Security; Robotics; Principles of Engineering; Civil Engineering and Architecture; TV Show Production (through which students learn to use the school's closed circuit cable TV system); History of Film; Leadership Seminar; Mock Trial; Street Law (which provides students with a practical understanding of the law and legal system that will be of use to them in their everyday lives); Accounting; Sports and Entertainment Marketing; Business Entrepreneurship; Cosmetology; Computer-assisted Drafting (CAD); Journalism; Astronomy; Introduction to Economics; and Introduction to Sociology. (Tr. at 5299-5303; LR-00716-00021–00063.)

*104 888. Dr. Rau testified that although Lancaster offers an Introduction to Engineering course, it does not have the resources to teach more advanced levels of engineering in house. (Tr. at 5126.)

889. Lancaster has the Phoenix Academy, which is a stand-alone school that provides accelerated credit recovery opportunities for its 9th through 12th grade students and

affords intensive remedial programming, particularly in mathematics and literacy skill development, for 7th and 8th grade students. (Tr. at 5231-34.) Under a contractual arrangement with Lancaster, an entity called Camelot operates and oversees the Phoenix Academy. (Tr. at 5234.)

890. Lancaster also offers the Buehrle Academy Program, which provides a small, alternative school setting for students who have serious disciplinary infractions. There are about 50 students in this program. (Tr. at 5234-35.) As with the Phoenix Academy, Lancaster uses Camelot to operate its Buehrle Academy Program. (Tr. at 5235.)

891. Lancaster's middle school offers required core courses, including courses in math, ELA, science, social studies, physical education/wellness, art, music, and world languages. (LR-00831.)

892. For the 2021-22 school year, Lancaster's middle schools are offering the following classes, among various others: Health and Fitness; Art; Practical Daily Living Skills; Practical Science; Practical Math; Career Explorations; Study Skills & Problem Solving; Internet Safety; Spanish; and Spanish Culture & Connections. (Tr. at 5307; LR-00831.)

893. Lancaster's elementary schools offer required core courses, including courses in math, ELA, science, social studies, physical education/wellness, music, and art. (Tr. at 5309-10; LR-00830.)

894. Lancaster's elementary schools offer after-school programming that is focused on reading, writing, and mathematics. (Tr. at 5236.)

895. Lancaster's middle schools and high school offer after-school programming, which involves, among other things, providing tutoring to students. (Tr. at 5236.)

896. Lancaster's Lunch Tutoring Program is a lunch-time program through which teachers tutor students that need extra help with particular subjects. (Tr. at 5259-60.)

897. Lancaster's high school and elementary schools offer summer school programs to all of the district's students. (Tr. at 5236-37, 5500-01.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

898. Lancaster operates five or six “community schools,” which are schools that partner with local health and social services agencies in order to offer services to support students’ mental, behavioral, and physical health. In Lancaster’s community schools, students receive in-school access to health, social, and mental health service providers. There are also staff members who track student attendance, visit students’ homes, and create after-school and weekend support programs for students and families. Lancaster’s community schools programs are designed to enhance student outcomes in its “neediest schools.” (Tr. at 5404-06; Lopez Dep. at 23-24.) Three of the community schools contain health clinics, as well, through which the district partners with Lancaster General Health to meet the needs of underinsured or uninsured students. (Lopez Dep. at 25-26.)

899. Lancaster’s Newcomer Program provides support and instruction for the district’s ELL students. (Tr. at 5255-56; LR-00716-00006.) Lancaster’s Teen Parent Program supports pregnant students and teen parents to help them complete high school. (Tr. at 5258; LR-00716-00006.)

***105** 900. Through its Families in Transition Program, Lancaster aims to identify and support students and families who are experiencing homelessness in some form. The district helps families to find adequate housing and employment, when necessary. (Lopez Dep. at 30-31; Tr. at 5403.)

901. Since 2019, Lancaster has implemented PBIS, which aims to acclimate kindergarten through 12th grade students to the expectations of being in school. Through this program, the district recognizes and rewards students for good behavior, as a form of positive reinforcement. (Tr. at 5410-11, 5995-96.)

902. Lancaster also offers the Cyber Pathways Education Program, which is a cyber school program for its middle school and high school students that is designed to support students who prefer to take courses in the cyber format, students who need to catch up on credits, and students who want to accelerate their learning. (Tr. at 5230-31, 5346-47.)

903. When Lancaster reopened in fall 2020 after the initial COVID closure, Dr. Rau testified the district was “still primarily virtual compared to most of the districts in [its] county.” (Tr. at 5205.) Lancaster started bringing back ELL students, followed by elementary school students who returned in mid-October until Thanksgiving. After

Thanksgiving, Lancaster once again closed its school buildings due to concerns regarding possible surges in COVID following the holidays and did not resume in-person instruction until January 25, 2021. (Tr. at 5207-08.) It was not until May 2021 that Lancaster offered every student the opportunity to return for in-person instruction. However, many parents of Lancaster students still did not want their children to attend school in person. (Tr. at 5207-08.)

904. After schools closed due to the COVID pandemic, Lancaster also developed a cyber program similar to the Cyber Pathways Education Program for its kindergarten through fifth grade students. In these cyber programs, Pennsylvania-certified teachers serve as academic advisors for the participating students. The district also provides the participating students with a computer or iPad, reimbursement for home internet costs, 24-hour online access to their academic courses, and access to IT support for technical or computer issues. (Tr. at 5346-48.)

905. Prior to COVID, Lancaster had started to roll out an initiative to provide a device to every student starting with sixth grade in 2017, then seventh in 2018, and eighth in 2019 – but the district was not one-to-one in grades 1 through 12 prior to March 2020. (Tr. at 5196-97.) Lancaster also only had about 15 devices per class in its elementary schools. (Tr. at 5197.) Additionally, Lancaster earmarked \$2.5 million for future purchases of iPads, with the aim that each of its students in third through twelfth grade would have one. (Tr. at 5341-43.)

906. When the pandemic arose, iPads that had previously been given to elementary school students were redeployed to high school students, so that students in grades 6-12 could participate in remote learning, while K-5 students worked from paper packets. (Tr. at 5197-99.) By April 2020, devices had been given to each family with elementary school students, so that families with one, two, or three students would get one iPad, and those with three or more would get two. (Tr. at 5199.)

***106** 907. By August 2020, using some of its ESSER funds, Lancaster reached its goal of providing iPads to all of its students. (Tr. at 5343.)

908. By using ESSER funds to complete its acquisition of iPads, Lancaster was able to roll the \$2.5 million that it had

William Penn School District; Panther Valley School..., Not Reported in Atl....

set aside for that purpose into purchasing other technological tools for its classrooms, such as snowball microphones for students who participate, through Zoom, in hybrid classroom situations. (Tr. at 5344.)

909. Dr. Rau testified that once one-to-one technology was in place, “what we learned was that it was a whole lot more complicated to access your learning on a device if you hadn’t been accustomed to using a device.” (Tr. at 5200.)

910. Dr. Rau also testified that she watched Lancaster students, especially her ELL population, struggle to adapt to virtual learning because it “was not how instruction was ever done in our classrooms.” (Tr. at 5201-02.) To help, the district would have “porch classrooms,” where teachers, paraprofessionals, or volunteers would go to student homes to show the students, and their parents, how to use the technology. (Tr. at 5201-02.) Even with this help, the ELL students struggled. (Tr. at 5202.) Another group of Lancaster students that struggled with accessing the virtual learning were its homeless students or students who did not have internet at home, to whom the district had to provide, respectively, hot spots or internet, to use. (Tr. at 5202-03.) A year of internet services for these families was donated by the Steinman Foundation, and further service was donated beyond that initial year. (Tr. at 5203.)

911. Dr. Rau described the process of bringing students back to in-person learning, beginning with the students with the most significant disabilities who would suffer language learning loss, then ELL students who were experiencing learning loss at a rapid pace, then the elementary students, and finally the other grades “every two weeks” so that the majority of the remaining students were back in May 2021. (Tr. 5208.) Still other students remained virtual due to concerns about the spread of COVID. (Tr. at 5209.) Dr. Rau worked with the school board to ensure the availability of personal protective equipment (PPE) equipment, and all students returned in August 2021. (Tr. at 5209-10.)

912. Internal evaluations and state assessments both confirm students experienced learning loss. Ms. Aikens testified that an independent reading assessment conducted after students returned to in-person learning showed that elementary children had suffered a year’s worth of loss. (Tr. at 6044.) Dr. Rau indicated that, in order to combat this loss, the district had a larger summer school, which was available to any student

due to the availability of ESSER funds. (Tr. at 5210-11.) Notwithstanding this summer school, Dr. Rau testified that the results from the next fall’s PSSAs and Keystone Exams did not show much growth. (Tr. at 5210-11.)

913. Lancaster also offers a number of special academic programs and opportunities for students, including but not limited to the following ones:

- a. AP courses
- b. Campus CTE Program
- *107 c. Career Exploration Internship Program
- d. Students Occupationally & Academically Ready (SOAR) Program
- e. Community Involvement Program
- f. Dual Enrollment Program
- g. Gifted Support Program
- h. Independent Study Program
- i. IB Program
- j. Access to Lancaster County Career & Technology Centers
- k. Lancaster Partnership Program
- l. Work Study Program

(Tr. at 5241-64; LR-00716-00006.)

914. Within Pennsylvania, McCaskey High School is one of only a small number of “comprehensive high schools,” which are high schools that provide their own CTE programming to students. As a comprehensive high school, McCaskey offers the following on-campus CTE programs: cosmetology, accounting, building trades and maintenance, CAD and design, health careers, early childhood education, and electronics. In tandem with completing some of these programs, such as cosmetology, health careers, and early childhood education, students can apply for state or national certification or licensure in a trade. (Tr. at 5243-44; LR-00716-00007–00009, -00029.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

915. Through its Career Exploration Internship Program, Lancaster offers junior and senior high school students personalized career exploration opportunities at local businesses and nonprofit organizations. As participants in the program, students take an online course that teaches them essential job skills and prompts them to reflect on their career exploration experiences. Through this program, each internship is tailored specifically to address the student-intern's career goals. (Tr. at 5243-45; LR-00716-0009.)

916. Lancaster has the SOAR program, through which the students in its CTE program undertake internships that allow them to acquire work experience. (Tr. at 5291; LR-00716-00008.)

917. Lancaster's Community Involvement Program is an unpaid co-op arrangement between McCaskey High School and a cooperating agency or business. The co-op experience blends in-school instruction with on-the-job training. As a participant in the program, a student spends part of the school day in classes at school and the other part doing volunteer work in the community. (Tr. at 5248-49; LR-00716-00010.)

918. Lancaster offers its high school students dual enrollment opportunities, which enable high school juniors and seniors to take college-level courses at several participating colleges and universities in order to earn high school and college credits simultaneously. The participating colleges and universities include Thaddeus Stevens College of Technology, Eastern Mennonite University, Elizabethtown College, Harrisburg Area Community College, Harrisburg University of Science and Technology, Millersville University, Pennsylvania College of Art & Design, and Pennsylvania College of Health Sciences. (Tr. at 5250-51; LR-00716-00010-00011.) The number of students who have participated in the dual enrollment program increased from 22 students during the 2015-16 school year to 270 students during the 2019-20 school year, and Lancaster expects that those numbers will continue to increase. (Tr. at 5437; LR-00873-00020.)

*108 919. As part of its dual enrollment program, Lancaster covers the cost of one college course per semester for any student who participates in the program. Lancaster is the only school district in Lancaster County that offers this type of dual enrollment program. (Tr. at 5263-64, 5291; LR-00716-00010.)

920. Lancaster also offers its high school students other opportunities to obtain college credits. In particular, McCaskey High School students who enroll in the school's courses in IB Biology, AP Calculus AB, IB Chemistry, AP Computer Science Principles, AP Language and Composition, and IB History of the Americas can, by completing those courses and successfully passing an exam, receive no-cost college credits through Thaddeus Stevens College of Technology or Harrisburg University of Science and Technology. Through this program, Lancaster students can simultaneously earn high school and college credits for free. (Tr. at 5297-99; LR-00716-00011-00012, -00018.)

921. Lancaster's IB Program is part of a global academic platform and, as participants in the program, the district's high school students can receive IB credit and potentially college course credit. For Lancaster's 2020-21 graduating class, between 25 and 30 students graduated with an IB diploma. Lancaster is one of only six or seven school districts in Pennsylvania that have an IB program. (Tr. at 5252-53, 5288.)

922. Lancaster also offers a separate IB Middle Years Program to students in sixth through tenth grades. (Tr. at 5288-89.)

923. Approximately 2,400 students attend McCaskey High School, but only 342 AP exams were taken in 2021.⁶⁰ (Tr. at 5593; PX-04550.) Of those exams, only 119 students had passing scores, or under 5% of the total student population. (Tr. at 5595; PX-04550.) Similarly, there were 256 IB exams taken,⁶¹ of which only 166 exams had passing grades. (Tr. at 5596-98; PX-04551.)

924. Of the students at McCaskey High School who took an AP exam in 2021, 34.7% scored 3 or higher. By student subgroup, only 8.1% of Black students and 23.4% of Hispanic students scored 3 or higher, compared to 53.3% of White students. (PX-04550, Tab "Summary Tables.")

925. Dr. Rau also testified that some students cannot take the honors, AP, or IB courses offered because they "are not proficient in reading, math, science" and would "struggle in trying to keep up with these high level courses. (Tr. at 5589.) For 2019-20, 54.2% of McCaskey High School students took rigorous courses of study, while, on a statewide basis,

William Penn School District; Panther Valley School..., Not Reported in Atl....

an average of 57.5% of high school students took rigorous courses of study. (LR-01672-00008–00009)

926. Lancaster's Gifted Support Program provides high school students who are identified as being gifted with opportunities for enrichment or acceleration. (Tr. at 5251-52; LR-00716-00011–00012.)

927. Lancaster's Independent Study Program allows McCaskey High School students who have completed all of the school's core academic requirements to pair with an advisor to learn more about a particular area of interest. (Tr. at 5252; LR-00716-00006, 00012.)

*109 928. Lancaster provides its high school students with access to the Lancaster County Career & Technology Centers. These centers provide students with opportunities to engage in vocational training, including training in the following fields: advanced manufacturing (with course work in metal working and welding); agri-science (with course work in animal production science and technology and veterinary assisting); culinary arts; baking; cabinetmaking and wood technology; heavy equipment operation and basic maintenance; masonry; plumbing; cosmetology; dental assisting; medical assisting; computer system technology; automotive mechanics and technology; photography; and commercial art. (Tr. at 5253; LR-00716-00064–00068.)

929. Through the Lancaster Partnership Program, Lancaster partners with Millersville University to provide high school students and their parents with an opportunity to learn about college and scholarship opportunities. The program involves workshops on financial aid, college applications, essays, and college preparation, along with mentor meetings and field trips to Millersville University. Students who participate in the program and choose to attend Millersville University are eligible to receive a scholarship, which is renewable for up to five years. (Tr. at 5254-55; LR-00716-00013.)

930. As a component of its partnership with Lancaster, Thaddeus Stevens College of Technology pays to transport the district's kindergarten students to its campus and gives them a tour of the campus and some classrooms. (Tr. at 5511; LR-02301-00003.)

931. For several years, a private organization provided sixth through twelfth grade students with access to Xello, which

provided college exploration activities via computer. (Tr. at 5486.)

932. In Lancaster's high school, there is an office where college interns and two employees assist students with completing college applications and financial aid forms. Additionally, Lancaster's students in seventh grade visit Thaddeus Stevens College, and its eighth grade students visit the Lancaster County Career & Technology Centers. (Tr. at 5487-88, 5514; LR-02301-00005, 00007.)

933. Through its Work Study Program, Lancaster enables its high school students to earn credits while working. (Tr. at 5260-61; LR-00716-00016.)

934. Lancaster's Transition to Work Program is focused on teaching high school students career skills and providing them with guidance on the transition from school to the workforce. (Tr. at 5292-93.)

935. In each of Lancaster's schools, in every grade level, every first Friday of the month is called College and Career First Friday when teachers wear their “college gear” and engage in lessons related to college and career. (Tr. at 5484-86, 5511-12; LR-02301-00003.)

936. Lancaster has “guaranteed admission” agreements with Thaddeus Stevens College of Technology and the Pennsylvania College of Art and Design in which those schools will admit Lancaster students automatically, provided that the applicant achieves a certain GPA score and other criteria. (Tr. at 5548-50; LR-02317.)

937. For its fifth grade students, Lancaster hosts a STEM career fair, during which volunteers speak to the students about different STEM professions. (Tr. at 5512-13; LR-02301-00003.)

938. For its middle school students, Lancaster hosts Virtual College Visits, during which the students can virtually visit with various colleges to learn about opportunities that are available within their fields of interest. (Tr. at 5523; LR-02304-00002–00004.)

939. Lancaster's website includes a large variety of useful checklists, tools, and resources to help guide parents and students to be successful in school and beyond, including in

William Penn School District; Panther Valley School..., Not Reported in Atl....

the workplace, military, and postsecondary education. (Tr. at 5520-35; LR-02303–02310.)

***110** 940. In 2019, Lancaster retained the Center for Opinion Research at Franklin and Marshall College to conduct surveys of its students and parents. One of the findings of the student survey is that “[r]oughly one-third of students say they don't feel challenged by their schoolwork, and many do not complete homework.” (Tr. at 5331; LR-00870-00002, 00006.) One of the findings of the parent survey is that “[o]nly half of parents say their child gets work from their teacher that makes them work hard.” (Tr. at 5332; LR-00870-00002, 00013.)

941. Lancaster offers a number of extracurricular activities, such as: Heart and Sole; Student Council; Student Government; National Honor Society; National Junior Honor Society; National Elementary Honor Society; Middle School Mural Club; Lighthouse Team; Garden Club; Knitting Club; Chess Club; T-Day Thinkers; Art Club; Elementary Art Club; Chorus; Orchestra; Band; Advantage Lancaster; Yearbook; Extended Day Program; North Museum Science Club; Science Factory Science Club; Tech Club; CODE your WORLD – 4H; Strategic Games; Teambuilding; Cooking Club; Drama/Improv Club; Future Generations Leadership; Math 24; Musical; LEADERS; Quiz Bowl; 24 Math Challenge; Newspaper; Environmental Club; Literary Publication; Safety Patrol; SWAN; Homework Club; Harry Potter Book Club; Compass Mark; Cub Scouts; Boot Camp 900; Creative Thinking; Impact Boys Group; Girl Scouts; Kids in the Kitchen; Tech Girls – YWCA; Wrap Up Lancaster; Adopt a Kindergarten; Science Explorers; All-Pro Dads; English Classes; Migrant Program; CAP's Nutrition Education Program; Bible to School; Boy Scouts; Good News Club; Lancaster County Parks; Power Up Price-Morning Program; Breakfast Club; Beyond the Bell (tutoring); Wake Up Washington (STEM); Summer Library; Unplug and Play; Monocle; Rock Ford Plantation; Coding Club; Millersville Math Night; Art Smart; After School Board Game Club; Apple Tips (Tech Group); and Third Grade PSSA Group. (Lancaster's Responses and Objections to President Pro Tempore's Fifth Set of Interrogatories and Requests for Production of Documents No. 1 (Dec. 16, 2019).)

942. Lancaster also offers a number of extracurricular sports and physical activity opportunities, such as:

- a. High School Level II Sports: Football; Soccer; Field Hockey; Cross Country; Basketball; Wrestling; Swimming; Tennis; Track; Softball; Baseball; Volleyball; Bowling; and Winter Track.
- b. High School Level I Sports: Football; Soccer; Field Hockey; Basketball; Wrestling; Track; and Cross Country.
- c. Middle Level Sports: Football; Field Hockey; Basketball; and Track.
- d. Additional Physical Activities and Intramural Sports: Girls on the Run; Walk and Talk; Basketball Intramurals (Spring); Field Hockey Intramurals (Spring); Fencing Club; Xcel2 Fitness; Lancaster Rec; Beginning Soccer Club; and Sports Club.

(Lancaster's Responses and Objections to President Pro Tempore's Fifth Set of Interrogatories and Requests for Production of Documents No. 1; Tr. at 5426; PX-00340-0048–0049.)

943. For the 2021-22 school year, Lancaster budgeted to spend \$184,141 on football and \$120,996 on track and field. (Tr. at 5878-79; LR-03200.)

944. Dr. Rau testified that her students who engage in athletics “learn so much more about life and peers and leadership and all of those good skills that kids need when they graduate high school and go to college or have a job.” (Tr. at 5142.)

945. Dr. Rau testified that developing a skill or talent outside of the classroom can also be a path to postsecondary opportunities for students. Indeed, Lancaster intentionally decided to maintain their athletics program despite budget difficulties because it recognizes that athletics are a key opportunity for many students to receive a college scholarship. (Tr. at 5141-42.)

***111** 946. As Dr. Rau explained, there is also an important fairness component to maintain extracurricular programming, especially for students living in poverty: because it is not “equitable that the poorest kids who already don't get enough resources, once again, have something taken away from them.” (Tr. at 5141.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

947. When asked how a lack of resources constrain Lancaster's athletic programs, Dr. Rau testified “[o]ur coaches are predominantly our teachers who – who volunteer to do this job. We pay them, of course, but they volunteer to be the coach.” (Tr. at 5142-43.)

948. As of the 2016-17 school year, 31% of 3- and 4-year-olds in Lancaster were enrolled in either Pre-K Counts or Head Start. (Tr. at 4698.)

949. While Lancaster offers pre-K, it only has capacity for a limited number of students. The program is available to 4-year-old students in the district, with 19 pre-K classrooms throughout its school buildings. Currently, there are between 300 and 350 students in Lancaster's pre-K program. Prior to COVID, the program regularly enrolled 400 students and there was always a waitlist. (Tr. at 5237-38, 5286.)

950. Lancaster's pre-K program is a “high quality” program that is aligned with the performance standards that the Commonwealth has established for programs of that type. Additionally, each of Lancaster's pre-K classes is taught by a certified teacher and has two paraprofessionals to provide support. (Tr. at 5237-38.)

951. Lancaster administers Classroom Diagnostic Tools (CDT) several times a year in order to determine how students are performing compared to the state standards in math, reading, algebra, biology, and communication arts, and the district then uses that data to plan supports for students for the PSSAs and Keystones. (Tr. at 5064-65.) These results illustrate that, as students progress through grade levels, the number of students who are performing at grade level decreases. Seventy percent of Lancaster students in fifth grade in 2018-19 performed below level in reading on the CDT. (PX-00389.)

952. For 2020-21 and 2021-22, 12 of Lancaster's 19 schools were labeled as low-achieving. (PX-02032, Column 13, Rows 235-248.)

953. While the Department does not track grade data, Lancaster produced grade data in this case. The grade data is summarized in LR-05091. The summary exhibit tracks additional student letter grades (A, B, C, D, or F) and omits non-traditional student grades (such as S, U, CP, NG, IP, M, etc.). In 2018-19, at Lancaster, 73.2% of all student grades

were a C or above. Specifically, 24.8% of all student grades were an A, 26.6% were a B, and 21.8% were a C. The breakdown of high school grades in 2017-18 was similar. In that year, 74.4% of all student grades were a C or above. (LR-05091-00003–00005.)

954. In the 2018-19 school year, across all of its schools, Lancaster promoted 99.54% or more of its students to the next grade level. (LR-05017A-00004.)

955. In order for a Lancaster student to graduate from high school, the student must earn four credits in communication arts, four credits in mathematics, three credits in science, three credits in social studies, two credits in world language, two credits in wellness, half of a credit in art or music, and five and a half elective credits. (Tr. at 5240-41; LR-00716-00005.)

956. For the five-year period between 2015-16 and 2019-20, the four-year cohort graduation rate for Lancaster has fallen within the range of 77.37% to 84.06%. (Tr. at 5183-84; LR-05017A-00003.)

*112 957. As shown on the 2019-20 Future Ready PA Index for McCaskey High School, the school's four-year and five-year cohort graduation rates exceeded statewide averages. This index reported McCaskey High School's 2018-19 four-year cohort graduation rate as being 86.8%, which exceeded the statewide average of 86.5%, and its five-year cohort rate as being 89.3%, which also exceeded the statewide average of 88.9%. (LR-01672-00007–00008; PX-01989, Tab “Grad Rate by School,” Row 338; PX-01990, Tab “Grad Rate by School,” Row 335.)

958. For the 2019-20 school year, Lancaster, districtwide, had 4-year cohort graduation rates lower than 80%, placing them in the bottom 25 of 499 districts. (PX-04855-0001.)

959. In particular, with regard to the four-year cohort graduation rate, Lancaster students districtwide graduated in 2019-20 at the rate of 78.64%. (PX-04855-0001; PX-01992, Tab “Grad Rate by LEA,” Row 314.)

960. For the 2019-20 school year, McCaskey High School's four-year and five-year cohort graduation rates were 84.68% and 88.09%, respectively. (PX-01992, Tab “Grad Rates by School,” Row 338; PX-01993, Tab “Grad Rates by School,” Row 337.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

961. With regard to the five-year cohort graduation rate, the students at Lancaster School District graduated in 2019-20 at the rate of 83.65%. (LR-05017A-00003; PX-01993, Tab "Grad Rate by LEA," Row 313.)

962. For the 2019-20 school year, with regard to economically-disadvantaged students in particular, 85.59% of McCaskey High School students in the four-year cohort graduated. (PX-01992, Tab "Graduate Rate by School," Row 338.) Further, 86.19% of the school's economically-disadvantaged students in the five-year cohort graduated. (PX-01993, Tab "Grad Rate by School," Row 337.) The four-year and five-year cohort graduation rates for McCaskey High School's economically-disadvantaged students exceeded the statewide graduation rates for both four-year and five-year cohorts of economically-disadvantaged students, which were 79.60% and 85.25%, respectively. (PX-01992, Tab "Grad Rate by State,"; PX-01993, Tab "Grad Rate by State.")

963. During the 5-year span from 2015-16 to 2019-20, the five-year cohort graduation rate for Lancaster School District has been within the range of 83.12% to 87.47%. (LR-05017A-00003.)

964. As of 2019, Lancaster's high school students were 6.4% above the statewide average in industry-based learning and 5% above the statewide average for scoring advanced on NOCTI industry assessments. (Tr. at 5283-85; LR-00872-00014.)

965. In 2019-20, 48.82% of Lancaster students had plans to attend a postsecondary institution. (LR-05017A-00010.) Additionally, 11.3% of McCaskey High School students and 12.5% of Phoenix Academy students enlisted in the military. And 46.8% of McCaskey students and 59.2% of Phoenix Academy students entered the workforce. (LR-05017A-00011.)

966. In the 2019-20 Future Ready PA Index, 93.3% of McCaskey High School's students met the career standards benchmark, which exceeded the statewide average of 89.8%. In fact, the school's Black (93.2%), Hispanic (91.7%), economically-disadvantaged (92.7%), and ELL (90.2%) students all exceeded the statewide average. (LR-01672-00007.) Overall, for the 2018-19 school year,

Lancaster School District had 96.38% of students who met the career standards benchmark. (LR-05017A-00012.)

967. In the 2019-20 Future Ready PA Index, McCaskey High School had a 35.5% industry-based learning rate, which exceeded both the statewide average (29.1%) and the statewide performance standard (30.7%). The rate was even higher among Lancaster's Hispanic students (40.3%) and economically-disadvantaged students (38.3%). (LR-01672-00008.)

*113 968. In the 2019-20 Future Ready PA Index, 10.8% of McCaskey High School's students scored advanced on an industry-based competency assessment, which was nearly twice as high as the statewide average of 5.8%. The percentage was even higher for the school's Hispanic students (13.9%) and economically-disadvantaged students (12%). (LR-01672-00008.)

969. In 2018-19, 77.61% of Lancaster's students attended school regularly. In contrast, over 22% of Lancaster's students missed more than 18 days of school. (LR-05017A-00013.)

970. If students are absent from school, Lancaster cannot teach them. (Tr. at 5420-21.)

971. The Keystone Exam proficiency rates in algebra I and biology at Lancaster's McCaskey campus increased in the 2020-21 school year. Some of the increases were substantial. For instance, at Lancaster's McCaskey's Campus, 25.4% more students scored proficient on the Biology Keystone Exam, as compared to 2019. (LR-03444.)

972. From 2017 to 2019, across all grade levels, 53% of Lancaster's economically-disadvantaged students met or exceeded the growth standard on the PSSAs. (LR-05022A.)

973. From 2017 to 2019, across all grade levels, 66% of Lancaster's ELL students met or exceeded the growth standard on the PSSAs. (LR-05023A.)

974. From 2017 to 2019, across all grade levels, 57% of Lancaster's Hispanic students met or exceeded the growth standard on the PSSAs. (LR-05024A.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

975. From 2017 to 2019, across all grade levels, 72% of Lancaster's special education students met or exceeded the growth standard on the PSSA exams. (LR-05025A.)

976. The 2019-20 Future Ready PA Index shows the percentage of McCaskey High School students who scored proficient or advanced on the Algebra I Keystone exceeded the statewide average, 46.7% to 45.2%. (LR-01672-00001.)

977. The 2019-20 Future Ready PA Index shows that, on the "Meeting Annual Academic Growth Expectations" metric, McCaskey High School's ELL students exceeded the statewide average for ELA (83 to 75), mathematics/algebra (86 to 75.3), and science/biology (94 to 75.1). (LR-01672-00002-00003.)

978. As compared to standardized test scores, Ms. Aikens and Mr. Lopez testified academic growth metrics are a better indicator of how a teacher is performing as an educator. (Tr. at 6074-75; Lopez Dep. at 75-77.)

979. Mr. Lopez testified that scores on standardized tests do not reflect the hard work that Lancaster puts into its students, and the successes that the district and its students achieve along the way. Mr. Lopez testified that success, for example, can include getting students to attend school after they have been chronically absent from school. (Lopez Dep. at 80-81.)

980. However, with respect to PVAAS/growth scores, Dr. Rau testified that PVAAS "hides the fact that students are not proficient or advanced on their achievement" and is not a "truthful representation of how that child is doing meeting the target standards." (Tr. at 5611.) She noted that "the biggest shortcoming is that PVAAS does not tell you that the students are not meeting the standard as defined by the Department" (Tr. at 5603.)

981. Dr. Rau highlighted that for several subgroups, Lancaster students received the highest AGI designation of "dark blue" even when every single student in that subgroup scored "Below Basic" or "Basic" on the PSSAs for that year. (Tr. at 5609-10 (referencing PX-01744).) Given the fact that a high AGI score can be obtained when students are uniformly scoring at the lowest level of PSSA scores, Dr. Rau testified that PVAAS results therefore shed little, if any, light on the underlying performance of students. (Tr. at 5611.)

*114 982. Dr. Rau explained, "I look at PSSAs and Keystone. I think that is the number one indicator of whether my kids are college and career-wise." (Tr. at 5151.) Dr. Rau further testified:

I am not going to give a break to students because I know they need to pass the test, and I know they need to pass that test so that they could be college and career ready. I mean, it's not a test just to take a test. It's an important test that tells me how well prepared my students are.

(Tr. at 5424.)

983. Dr. Rau testified at trial that she believed that schools and students should be judged by their scores on standardized achievement tests, and that growth is improper to use in evaluating a student or school; however, previously, Dr. Rau had publicly advocated for the opposite position, stating: "I don't believe that we can judge students based on a test that they took at one period of time. We need to be much more holistic in how we assess students and their growth over time." (Tr. at 5425-26.) During her testimony, Dr. Rau acknowledged making the prior statement but explained it was in her "first year as superintendent, and I certainly have learned a lot since that time six years ago. And so now, I would disagree with what I said six years ago." (Tr. at 5426.) The Court finds Dr. Rau's explanation about the prior out-of-court statement credible.

984. Lancaster has 19 schools in 20 buildings: 12 elementary schools that house students in grades K-5, one that serves students in grades K-8, four middle schools for students in grades 6-8, one high school for grades 9-12, one cyber school, and an alternative school for students who are over-age and under-credited. (Tr. at 5047, 5226-27, 5232; Stip. ¶ 7.) The high school, McCaskey High School, is comprised of two different buildings. (Tr. at 5226.)

985. Seventeen of its buildings were built in the 1920s, 30s, and 40s. Until 2007, almost none of Lancaster's buildings had ever been renovated. (Tr. at 5770.) Only the district's two high

William Penn School District; Panther Valley School..., Not Reported in Atl....

school buildings had received updates, in the mid-1990s. (Tr. at 5770.)

986. In 2007, Lancaster developed a 10-year plan to renovate the 17 buildings in the district that were in greatest need of repair. (Tr. at 5770-71.) Fourteen years into its 10-year plan, however, the district has only been able to renovate 12 of the 17 buildings slated for repair. (Tr. at 5771.)

987. In order to pay for the renovations, the district issued bonds and financed the work in phases. (Tr. at 5771.) Currently, Lancaster's local tax base has to support a net debt service of \$13 million dollars a year. (Tr. at 5772.)

988. Mr. Przywara testified the decision to renovate despite its steep costs was driven by concerns that “[t]he buildings could be unsafe We have nonsecure entryways. We have roofs that leak. ... [The buildings are] crumbling. We have bricks crumbling outside. We have boilers that break. They're in constant need of repair.” (Tr. at 5774-75; *see also* Tr. at 5145-48.)

989. For example, in 2019, it was discovered that Price Elementary School had traces of lead in its water pipes, forcing the school to provide water bottles for its students and staff until the problem could be addressed, a period that lasted over a year. (Tr. at 5803-04.) To remedy the issue, Lancaster had to install water filters that cost approximately \$50,000 and which must be replaced every other year. (Tr. at 5803-06.)

*115 990. Wickersham Elementary School is being renovated to address the mold, peeling paint, and moisture damage that proliferated throughout the building. (Tr. at 5778-79; PX-00585; PX-00589.) The school also had deteriorating classroom trailers due to lack of space, and inadequate classroom space for small group instruction, forcing teachers and support staff to create spaces in hallways like the one pictured below to provide interventions. (Tr. at 5781-83.)

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(PX-00656.)

991. Lack of space also forced teachers at Wickersham to create student learning spaces in the basement. (Tr. at 5783-85.)

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(PX-00614.)

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(PX-00616.)

992. Similarly, at Carter & MacRae and Hamilton Elementary Schools, hallway space had to be converted into an area for instruction. (*See* Tr. at 5789-92, 5798-5801; PX-00427; PX-00691; PX-00714; PX-00730.)

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(PX-00691.)

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(PX-00427.)

993. Many of Lancaster's older buildings, including Hamilton, experience recurring roof leaks, requiring staff to station trashcans throughout classrooms to collect the dripping water until repairs can be made. (*See* Tr. at 5796-98; PX-00402; PX-00405.) Mr. Przywara testified that, due to overcrowding, students cannot be relocated, “[s]o classes

William Penn School District; Panther Valley School..., Not Reported in Atl....

are still going on in there while there's ... water dripping down." (Tr. at 5796-98.)

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(PX-00405.)

994. Some school buildings in the district do not have full, working air-conditioning, so every time the temperature rises above 90 degrees in the classroom, the district has to close the schools because students and staff have fainted from the heat. (Tr. at 5145-48.)

995. With its incoming ESSER funds, and in response to the COVID pandemic, Lancaster plans to upgrade its ventilation systems by purchasing and installing air filter machines. (Tr. at 5503-04.)

996. Lancaster is also working with Fidevia Construction Management & Consulting (Fidevia), in carrying out a 20-year, 4-phase plan to renovate or rebuild every one of Lancaster's buildings. Lancaster is over 10 years into this plan and has renovated or rebuilt 15 out of its 20 buildings so far. As Lancaster renovates or rebuilds its buildings, it is also outfitting the buildings with new furniture. (Tr. at 5353, 5381-82, 5386.)

997. As of December 2021, Lancaster was in Phase 3 of its renovation and construction projects. As part of the Phase 3 work at its Lincoln Middle School, Lancaster has renovated the building, built an addition onto the building, and moved the building's main office to a new location within the building. (Tr. at 5363-64.)

998. In carrying out Phase 3 construction and renovation work at the Reynolds Middle School, Lancaster has gutted the inside of the building, built an auditorium inside the building, and built a new outdoor play deck. The play deck includes a new turf field, with track and field and football lines on it, and a basketball court. The play deck was built atop a new parking lot facility. The play deck project cost the district \$3,311,400. (Tr. at 5364-65, 5368-72; LR-00738-00032.) Dr. Rau testified the rooftop play deck was necessary because children need a

place to play and the school at issue was landlocked. (Tr. at 5369-70.)

*116 999. The renovations and modernized interior design within the Reynolds Middle School were featured and highlighted in a national trade publication. (Tr. at 5497.)

1000. In performing Phase 3 construction work at its Buchanan Elementary School, Lancaster constructed an entirely new school building in a new location. (Tr. at 5365-66, 5380.)

1001. As of December 2021, Lancaster was continuing with "major construction" at its Wickersham Elementary School. When it finishes this renovation project, Lancaster will have spent \$231 million on the overall renovation and re-building efforts of its district buildings. (Tr. at 5386-87, 5869.)

1002. Lancaster has completed renovations of its Washington, Lafayette, Wharton, Ross, and Fulton Elementary schools. (Tr. at 5387.)

1003. Lancaster is planning to renovate the King Elementary School in the coming years. (Tr. at 6096.)

1004. Lancaster has completed a renovation of most of its Hand Middle School. (Tr. at 5387-88.)

1005. In the summer of 2019, Lancaster completed the construction of a new school building for its E.R. Martin School, which houses kindergarten through eighth grades. (Tr. at 5389.)

1006. Lancaster's Phase 4 plan includes a plan to install air-conditioning in the handful of its school buildings that are currently without it. (Tr. at 5390-91.)

1007. Recently, Lancaster completed renovations at its Rockland Building, which Dr. Rau described as "putting in some plasterboard walls, creating more classroom spaces, because there are several programs that use that building" (Tr. at 5388.)

1008. In the summer of 2021, Lancaster finished building the new Smith-Wade Elementary School building, a 61,000 square-foot building, at a cost of almost \$21.6 million. (Tr. at 5498.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1009. From the 2014-15 school year to the 2019-20 school year, the total revenue that Lancaster received from the Commonwealth increased from \$92,879,786 to \$118,827,551 – an increase of \$25,947,765. (Tr. at 5969-70; LR-05019.)

1010. In 2019-20, Lancaster had total revenues of \$229 million. (LR-05018.)

1011. For the 2021-22 school year, Lancaster received over \$67 million in BEF funding, which is about \$3.3 million increase, or a 5.2% increase, from the prior school year. (Tr. at 11625; LR-01581-00006.) Lancaster's budget reflected that it initially expected to receive about \$63.7 million in BEF from the Commonwealth, based on its 2020-21 BEF, but it ultimately received more than that between the increase in BEF funding to approximately \$65 million, and an additional \$2.1 million in “Level Up” funding. (Tr. at 5909-10; PX-04535-0005.)

1012. According to its budget, Lancaster is planning to spend \$250,049,466 during the 2021-22 school year. (PX-04535-0012.)

1013. When forming its budget, Mr. Przywara explained that Lancaster projects expenditures by starting with its current budget, known as the “status quo” budget, and then considering financial commitments that it has made through collective bargaining agreements, contractual obligations, and debt service obligations. (Tr. at 5667-70.)

1014. Mr. Przywara testified that in its budget projections, Lancaster projects the amount of BEF and special education funding that it will receive from the state based on the previous year's receipts, without considering any increases, despite the fact that, each year, it has generally received more BEF than the prior year. (Tr. at 5670-72, 5676.)

*117 1015. In its 2020-21 budget, Lancaster assumed that there would not be an increase in the amount of BEF or special education subsidies that it received from the state. With that assumption in mind, the district projected that it would experience a budget deficit, which led the Lancaster School Board to establish a tax increase of 1.75%, which it expected would raise more than \$2 million in local revenue. Ultimately, however, Lancaster received an increase of more than \$3 million in BEF alone. (Tr. at 5964-66.)

1016. Overall, Pennsylvania currently provides a higher percentage of Lancaster's revenue than it provided when the Petition for Review was filed, including revenue in the form of BEF, special education funding, and pension payments. (Tr. at 5967-68; LR-05018.) However, as Mr. Przywara explained, this is “misleading because a lot of that reimbursement is for pension expense that we're mandated to pay for our employees that we have.” (Tr. at 5968.)

1017. Lancaster's General Fund is its operating fund, used to finance 98% of its activities. As of June 2020, the total assets – which includes cash, as well as investments, taxes receivable, and amounts due from other governments – in Lancaster's General Fund totaled \$70,512,132. (Tr. at 5740-41; PX-04530-0008.) Additionally, at the end of the 2019-20 school year, Lancaster's governmental fund balances totaled \$30,986,997, including an unassigned fund balance of \$24,140,244. (Tr. at 5880-81; PX-04530-0011.)

1018. On June 30, 2020, the total amount of the fund balances for Lancaster's governmental funds was the highest that it had been since June 30, 2012. (LR-03199-00107.) However, Mr. Przywara indicated that there were accrued savings that school year due to COVID and the limitation of services offered by the district following March 13, 2020, the date that schools closed due to the pandemic. (Tr. at 5880.)

1019. As of the 2019-20 school year, Lancaster had the third largest unassigned fund balance for any LEA in the Commonwealth. (PX-01823, Tab “2019-20.”) For every school year from 2012-13 to 2019-20, Lancaster was within the top ten LEAs in the Commonwealth based on the size of their unassigned fund balances. (PX-01823, Tabs “2012-13,” “2013-14,” “2014-15,” “2015-16,” “2016-17,” “2017-18,” “2018-19,” and “2019-20.”)

1020. Lancaster's unassigned fund balance occasionally grows unexpectedly due to, for example, realized savings and debt reimbursement. (Tr. at 5757-59.) Mr. Przywara testified the unassigned fund balance can be used for any valid purpose “[p]rovided it's – in nature we try to use that for one-time purposes, not for recurring expenditures.” (Tr. at 5887.)

1021. For the 2020-21 school year, Lancaster projected that its ending Unassigned Fund Balance would be about \$16.4 million; however, it ended up being approximately

William Penn School District; Panther Valley School..., Not Reported in Atl....

\$18 million. (Tr. at 5897-98; PX-04533.) For the 2021-22 school year, Lancaster expects to have an ending unassigned fund balance of approximately \$19.1 million. (Tr. at 5914-15; PX-04535-0025.)

1022. The Commonwealth is Lancaster's largest source of funding. For example, for the 2019-20 school year, Lancaster received \$118,827,551 from state sources, \$92,019,596 from local sources, and \$18,135,616 from federal sources. (Tr. at 5881-83; PX-04530-0014.) Its total revenues were \$228,982,763 and, therefore, more than half of those revenues were from state sources. (PX-04530-0014.) Approximately 51.9% of Lancaster's funding is from the Commonwealth, 40.2% is from local sources, and 7.9% is from federal sources.

*118 1023. For the 2021-22 school year, Lancaster is projecting that it will receive \$118,987,648 from state sources. (Tr. at 5909; PX-04535-0004.)

1024. For the 2021-22 school year, Lancaster is budgeting to spend almost \$17 million more than it did in the prior school year. (Tr. at 5908; PX-04535.)

1025. In the general fund budget for the 2021-22 school year, Lancaster budgeted to spend \$2,061,402 on sports and other extracurricular activities. It budgeted to spend \$5,412,660 on its pre-K program. (Tr. at 5911; PX-04535-0014, 0016.)

1026. Despite the fact that, over the past several years, Lancaster's student enrollment declined by 1,000 students, and despite the district's expectation that its student enrollment will continue to decline in the coming years, it chose to incorporate \$10 million of additional spending into its 2021-22 budget in order to maintain current staff levels. (Tr. at 5929-31.) Dr. Rau testified that the district had engaged in a study to review adjusting student population between the schools, through realigning school boundaries, to provide more equitable classroom spaces, i.e., reducing overcrowded classrooms. (Tr. at 5402-03.)

1027. Lancaster has a variety of sources of cash on hand. The district projected that, by June 30, 2022, it would have \$2 million in cash and short-term investments in its "other capital projects" fund; \$1.5 million in its food service fund; \$2 million in its internal service (healthcare) fund; and \$20 million worth of long-term investments in its general fund. (Tr. at 5919-22; PX-04535-0017.)

1028. In total, Lancaster projected that, by June 2022, it would have \$64.9 million in cash and investments on hand, some of which is restricted for specific purposes, like the cash and investments that are housed in the capital projects fund, which must be used solely for capital projects. (Tr. at 5926; PX-04535-0018.)

1029. Lancaster expects to receive a total of about \$71 million in federal ESSER funding. For purposes of its final general fund budget for the 2021-22 school year, Lancaster identified about \$21.8 million worth of ESSER funds as anticipated revenues from federal sources. The \$49.2 million difference between these two figures will be reflected on Lancaster's future final general fund budgets. (Tr. at 5907; PX-04535-0006.)

1030. Lancaster plans to use some of its ESSER funds not only for facilities purposes and to maintain small class size, but to upgrade its TV studio and invest in standards-aligned curriculum for core content areas. (Tr. at 5711, 5935-44; LR-03208.)

1031. Previously, Lancaster used ESSER funding to purchase new math materials for kindergarten through second grade; purchased an updated curriculum resource, the ARC Program for its third through fifth grades; and purchased additional books for its middle school students to "make [its] resources more diverse." (Tr. at 5311-12.)

1032. Lancaster also made the choice to purchase Apple TVs for every classroom and iPads, rather than Chromebooks, for every student. The iPads cost Lancaster about \$250 more per unit than it would have spent had it purchased Chromebooks, like other school districts. (Tr. at 5950-51.) Mr. Przywara explained Lancaster purchased the more expensive iPads because they found that it was in the educational interest of its students. (Tr. at 5949-51.) In addition, Dr. Rau's testimony reflects that the district used iPads prior to the COVID shutdown. (See FOF ¶¶ 905-906.)

*119 1033. Lancaster plans to upgrade its ventilation systems by purchasing and installing air filter machines; to spend roughly \$7 million to continue upgrading its technology; and to spend roughly \$18.5 million of its ESSER funds towards academic support, including reaching its goal

William Penn School District; Panther Valley School..., Not Reported in Atl....

to have a teacher-student ratio of 1-to-20. (Tr. at 5311-12, 5503-08.)

1034. Additionally, notwithstanding the guidance that it should not use ESSER funds for recurring expenses, Lancaster's School Board allocated \$10 million of ESSER funding to offset Lancaster's ongoing deficit, which means that the ESSER funds are being used for ongoing programs. (Tr. at 5713-14.) Mr. Przywara explained this was done, in part, in an effort to offset the tremendous challenges the district faced in dealing with the loss of learning and the social and emotional needs of its students due to the COVID pandemic. (Tr. at 5713-14.) The district considered other options, such as cuts, but Mr. Przywara explained that because of the pandemic, it did not want to go that route. (Tr. at 5715.)

1035. Mr. Przywara warned of the possibility of a financial "cliff" in 2025, when ESSER funding expires, if the district continues to fill its deficit with ESSER funds and the level of revenue remains the same each year. (Tr. at 5716, 5723.) "In practical terms," Mr. Przywara testified "that is extremely significant, what [he] would call draconian." (Tr. at 5723.) He testified the cuts would be more than double what occurred in 2011 when the federal stimulus expired and the state reduced BEF. (Tr. at 5663-64, 5672, 5723, 5725.)

6. Shenandoah Valley

1036. Petitioners presented the testimony of Brian Waite, the Superintendent of Shenandoah Valley. He has held that position since May 2, 2016. (Tr. at 3366-67.) Superintendent Waite credibly testified as follows.

1037. In the 2020-21 school year, Shenandoah Valley had 1,001 students. Since 2017, overall enrollment in Shenandoah Valley has declined by 108 students. (LR-05050A-00005.)

1038. Approximately 75.44% of students enrolled at Shenandoah Valley come from low-income families, which ranks it 19th highest in the state. (Tr. at 3381; PX-04886.)

1039. Shenandoah Valley's demographics are as follows:

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(PX-04812.)

1040. In the 2019-20 school year, Shenandoah Valley's student body was 43.84% White, 51.16% Hispanic, 3.8% Black, and 0.46% Asian. (PX-04812.)

1041. Shenandoah Valley has high populations of ELL students. (Tr. at 3372-73.) Since 2008, the number of its ELL students has doubled. (Tr. at 3382.) Between 2012-13 and 2019-20, the percentage of Shenandoah Valley's students classified as ELL students increased from 8% to 12%, making it 11th highest in the state. (PX-04816; PX-04806-0001, Column "ELL Rank.")

1042. Superintendent Waite explained ELL students have a variety of needs the district must meet:

They're coming in at different grade levels, so students may come up, and the first time they've entered might be in 10th[] grade, 11th grade, or they could be in our 4-K program as alluded to earlier.

So there's a variety of needs and a variety of levels not just within — not just across grade levels, but also within the grade levels.

(Tr. at 3385-86.)

1043. In 2019-20, Shenandoah Valley had total revenues of \$18.8 million. (See LR-05052.) Shenandoah Valley is a low-wealth, high-need, high-effort, low-spending district.

*120 1044. By median income, Shenandoah Valley ranks 484th in the Commonwealth, while by the Aid Ratio it is 5th poorest.

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William Penn School District; Panther Valley School..., Not Reported in Atl....

(PX-04886.)

1045. According to the Fair Funding Formula, Shenandoah Valley has the 11th highest need student population in the Commonwealth. (PX-04886.) Putting its need and wealth together, the district's local capacity per weighted student ranks 496th out of 499 districts. (PX-04886.) Shenandoah Valley's need, combined with its lack of wealth, results in its rank of 491st in the Commonwealth based on current expenditures per weighted student. (PX-04886.)

1046. In addition, Shenandoah Valley's special education population is the 110th highest according to the Special Education Fair Funding Formula. (PX-04886.)

1047. Shenandoah Valley's special education population also has higher than average need. Many of the students who require special education services have "low incidence disabilities," which means they are in the disability category that requires more intense services and higher costs. (PX-02163; PX-04812; Tr. at 3402-03.)

1048. By the Level Up formula, Shenandoah Valley spends less than 495 districts. (PX-04778, Tab "Level Up Supplement," Row 416, Column G; Tr. at 11733-34.)

1049. Shenandoah Valley cannot tax its way to sufficient funding. As measured by equalized mills, Shenandoah's tax rate ranks first in Schuylkill County and 23rd in the Commonwealth. (PX-04886.) When measured by the Local Effort Capacity Index, the district ranks higher: 14th in the entire Commonwealth. (PX-04886.)

1050. Out-of-school factors including socioeconomic status, home environment, and parental involvement influence Shenandoah Valley students' educational experiences. (Tr. at 3807-08.)

1051. In the 2018-19 school year, only 78.46% of Shenandoah Valley students had regular attendance. (LR-05050A-00013.) Superintendent Waite testified that some students who do not attend school do well on state assessments but there are also students that do not attend school who do not do well on the state assessments. (Tr. at 3578-80.)

1052. Shenandoah Valley has not considered combining or merging with another school district. (Tr. at 3791.)

1053. As of the 2020-21 school year, Shenandoah Valley had 82 classroom teachers, all of whom are certified to teach in Pennsylvania. (Tr. at 3674; LR-05050A-00008.)

1054. As of the 2018-19 school year, Shenandoah Valley rated all its teachers satisfactory and proficient. (LR-05050A-00002.) Of the 420 teacher evaluations that Shenandoah Valley performed between 2014-15 and 2018-19, only one teacher was rated as needing improvement, but was still rated as satisfactory. Of the remaining teacher ratings, 391 were proficient and 28 were distinguished. (LR-05050A-00002.) During Superintendent Waite's tenure, two teachers have been rated unsatisfactory. Both were removed from their teaching positions due to their job performance. (Tr. at 3681-82.)

1055. As of the 2020-21 school year, Shenandoah Valley teachers have an average of 15 years of experience and, on average, have taught at Shenandoah Valley for 12.8 years. (LR-05050A-00006.)

*121 1056. Shenandoah Valley provides a teacher induction program, in collaboration with an IU, including assignment of teacher mentors and instruction in research-based instructional models. Inductees are taught "to assign challenging work to diverse student populations" in accordance with Shenandoah Valley's Differentiated Supervision Plan. (Tr. at 3687-89; LR-00924-00036-00037.)

1057. In the 2020-21 school year, teachers at Shenandoah Valley made an average salary of \$55,416.73, which is nearly \$10,000 higher than the average teacher's salary in the 2012-13 school year. (LR-05050A-00006.) The median household income in Shenandoah Valley is \$38,346. (Tr. at 3378; PX-04886.) Accordingly, the average Shenandoah Valley teacher earns approximately \$17,071 more than the median household income in the district.

1058. Shenandoah Valley elementary school teachers attend a variety of workshops and trainings on reading and math throughout the year. (Tr. at 3655-56.) These professional education opportunities are designed to "[i]ncrease ... educators' teaching skills based on effective practice research," "[p]rovide educators with ... classroom-based

William Penn School District; Panther Valley School..., Not Reported in Atl....

assessment skills” and data analysis, and “[e]mpower ... educators to work effectively with parents and community partners,” among other things. (LR-00924-00034.)

1059. Shenandoah Valley has a junior-high and high-school music teacher who directs the band. The high school music teacher and the music program have received recognition and awards from the National Association of Music Merchants. (Tr. at 3689-90.)

1060. Shenandoah Valley lacks elementary art teachers. (Tr. at 3420.) The district was forced to furlough the art teacher due to funding constraints. (Tr. at 3422.)

1061. Shenandoah Valley has a variety of special needs classrooms. It has an autistic support class, two emotional support classrooms, a deaf and hard-of-hearing classroom, and three life skills classrooms for students with intellectual disabilities. Each of those classrooms has a certified special education teacher and three paraeducators. (Tr. at 3403-04.) In total, Shenandoah Valley has 10 teachers assigned to lower-need special education and 7 for higher-need special education. (Tr. at 3405.) The teachers and paraprofessionals in high-need classrooms work only with those students, not with any general education students. (Tr. at 3847.)

1062. Although the ELL population more than doubled between 2008 and 2021, from 60 students to 143 students, (Tr. at 3382), the district has the same number of ELL teachers (4) as it did in 2008, although it is in the process of hiring a fifth one. (Tr. at 3386, 3394-95.)

1063. The ELL instructors in Shenandoah Valley face “huge workload[s]” of “approximately [] 35 students.” (Tr. at 3388.) Because of these constraints, ELL teachers have neither the time nor the ability to collaborate with regular classroom teachers, which is important not only for ELL students’ language development, but also so they can learn in other classes with complex vocabularies, such as biology. (See Tr. at 3388-94.) Superintendent Waite testified that “[t]he ability to provide [ELL students] programming with fidelity is ... severely impeded because the number of students that have increased ... is more than double. So we have situations where students should be getting two hours of instruction and may not.” (Tr. at 3387.)

*122 1064. Combined, the 17 special education teachers and 4 ELL teachers constitute nearly a quarter of the district's entire teaching staff. (Tr. at 3405.)

1065. In the 2020-21 school year, Shenandoah Valley reported having 179 professional and support personnel. That number included 97 professional personnel, 48 full-time support staff, and 33 part-time support staff. (LR-05050A-00008.)

1066. Shenandoah Valley has 11 administrators. Shenandoah Valley employs a superintendent, business manager, assistant business manager, director of transportation, director of facilities, director of federal programs, director of technology, and special education director, and both schools have principals and assistant principals. (Tr. at 3580-81.) The elementary school assistant principal is also the district's school psychologist. (Tr. at 3459-60.)

1067. In Shenandoah Valley, there are currently more than 10 cases of teachers conducting multiple classes of different subjects to different students at the same time. (Tr. at 3425.) For example, a music teacher instructs seventh graders in introductory music while simultaneously teaching AP music theory. (Tr. at 3424-25.) An English teacher teaches two different grade levels working in different content areas at the same time. (Tr. at 3426.) Even math teachers have been tasked with teaching multiple courses to different students within a single classroom — one teacher teaches Algebra 2 and geometry, and another has to teach Algebra 1, Algebra 2, and consumer math students in the same class. (Tr. at 3426.)

1068. Shenandoah Valley has a social worker-behavior interventionist on staff, who has helped students develop social skills and re-integrate into the school community. (Tr. at 3451-55.) This single staff member serves as a half-time social worker and half-time behavioral interventionist for the district's students with special needs in both the elementary and the high school emotional support class, which is not sufficient to help all the students who need his services. (Tr. at 3450-51, 3455.) The district is looking to hire another social worker using its ESSER funds. (Tr. at 3455.)

1069. Superintendent Waite testified that “a lot of students with emotional needs ... they're not necessarily unable to learn academically; but it's the behaviors that are impeding their ability to learn. Their behaviors may be so overt that they cannot concentrate and actually work and do — and learn

William Penn School District; Panther Valley School..., Not Reported in Atl....

and gain knowledge they need academically.” (Tr. at 3452.) Superintendent Waite testified that he has seen students “ma[ke] ... much stride based on the services” they have been able to receive with a behavior interventionist, so much that they are able to reintegrate into regular classrooms. (Tr. at 3453-55.) Unfortunately, Superintendent Waite testified he lacks sufficient behavior interventionists to service all students who need those services. (Tr. at 3455.)

1070. Because the district's only psychologist is also the elementary school assistant principal, the duties in the psychologist role may “take away” from the duties in the assistant principal role. (Tr. at 3459-60.)

1071. Shenandoah Valley has three Title I reading specialists and two Title I math specialists who support students in grades K through 3 but does not have any specialists to help at the higher grade levels. (Tr. at 3418-19.)

*123 1072. Shenandoah Valley has two full-time counselors, one each for the elementary and high school. (Tr. at 3458-59.) Because the high school counselor is responsible for managing the entire high school's counseling needs, Superintendent Waite said she has “[v]ery, very limited time ... working with kids.” (Tr. at 3458-59.)

1073. Shenandoah Valley has no librarians. (Tr. at 3420.)

1074. Shenandoah Valley employs one truancy officer, and due to her caseload, she does not have time to do home visits. (Tr. at 3460-61.)

1075. Approximately 63% of Shenandoah Valley professionals (61 out of 97) have a master's degree or higher. (LR-05050A-00007.)

1076. As indicated by its District Level Plan prepared in 2018, Shenandoah Valley had an average student-teacher ratio of 13-to-1 at that time, a number based on all the students in the district divided by a number of all the professional staff. (Tr. at 3715-16; LR-00924-00004.) In the 2020-21 school year, Shenandoah Valley had a student-to-teacher ratio of 12.2-to-1 and a student-to-staff ratio of 5.6-to-1. (LR-05050A-00009.) These numbers “can be a little misleading” because there are teachers that are teaching in low incidence classrooms with very few students. (Tr. at 3716.)

1077. Between the 2015-16 and 2018-19 school years, the class sizes in kindergarten through third grade reached or exceeded 23 students only five times. As shown by class size data from Shenandoah Valley from 2015-16 to 2018-19, the majority of the time, class sizes were 19 students or less. (Tr. at 3705-07; LR-00962-00003, 00005, 00008, 00010.)

1078. As of December 2019, Shenandoah Valley Elementary School pre-K classes were between 15-17 students; kindergarten classes were between 17-19 students; first through third grade classes were between 17-21 students; fourth and fifth grade classes were between 22-27 students; and sixth grade classes were between 25-29 students. (Tr. at 3708-09; LR-00956.)

1079. Shenandoah Valley Elementary School offers students core courses in ELA, reading, math, science, and social studies. Students in first grade through sixth grade receive instruction in physical education and health. Students in fifth and sixth grade may also participate in band. Teachers also incorporate art projects into their classrooms. Additionally, Shenandoah Valley has increased STEM opportunities in its elementary school. (Tr. at 3648-50.)

1080. Shenandoah Valley Elementary School has a library where teachers can bring their students. (Tr. at 3649.)

1081. Shenandoah Valley Junior High School offers students core courses in ELA, math, science, social studies, physical education, art, music, and computers. Core courses for seventh-grade students include: Science Applications, Geography, Math 87 or Pre-Algebra, Futures I, English Language Arts 7, Physical Education/Health 7, Music 7, Art 7, and Computers 7. (Tr. at 3643; LR-01787-00007.) Core courses for eighth-grade students include: English Language Arts 8, Algebra 1/2 or Honors Algebra I, Science 8, Civics and Pennsylvania History, Music 8, Art 8, Keyboarding, Futures II, and Physical Education/Health 8. (Tr. at 3645; LR-01787-00007.)

1082. Shenandoah Valley High School has three academic tracks for its students: (1) the college preparation track for students who want to pursue postsecondary education; (2) the applied/business track, which “provides students with the core competencies that they will need to excel in the workplace of the 21st Century;” and (3) the vocational/technical track for students to learn trades. Vocational/

William Penn School District; Panther Valley School..., Not Reported in Atl....

technical track students take courses at the Schuylkill Technology Center. (Tr. at 3597-3600; LR-01787-00006.)

*124 1083. To graduate from Shenandoah Valley High School, students are required to take four credits of English, math, and science, three credits of social studies, one credit of physical education, one half credit of health, two credits of arts and humanities, and four credits in electives. (Tr. at 3596.)

1084. Additionally, in order to graduate, Shenandoah Valley students must perform community service and complete a community service project. The community service program requires students to complete at least 32 hours of community service during their high school career, and its goal is to “involve our students in their community,” so that students “learn that a well-rounded education needs to extend beyond the school building.” (Tr. at 3627-28; LR-01787-00045.) The community service requirement is “instrumental in achieving the citizenship goals of standards-based education.” (Tr. at 3630; LR-01787-00046.)

1085. Shenandoah Valley also requires students to complete a graduation project. The purpose of the project, “which may include research, writing, or some other appropriate form of demonstration, is to assure that the student is able to apply, analyze, synthesize, and evaluate information and communicate significant knowledge and understanding. Projects may be undertaken by individual students or groups of no more than 3 students.” (Tr. at 3632-33; LR-01787-00052 (emphasis omitted).)

1086. Shenandoah Valley High School offers students core courses in ELA, math, science, social studies, physical education, health, arts, and humanities. Examples of core courses offered to high school students include:

- a. ELA: English 9, English 10, English 11, and English 12.
- b. Math: Algebra I, IA, IB, II; Honors Algebra II; Geometry; Trigonometry; Honors Trigonometry or Calculus; and AP Calculus.
- c. Science: General Science; Biology I; Chemistry; Environmental Science; Physics; Earth Science; Space Science; and Physical Science.
- d. Social Studies: American History I; World History or Cultures; American History II; and Economics.

(Tr. at 3600-13; LR-01787-00015–00026.)

1087. The high school offers a number of additional courses to students, examples of which include: Spanish, Latin, General Business, Accounting, Personal Finance, Computer Applications, Information Technology, Digital Photography/Videography, Graphic Design, Independent Piano Lab, Music Theory, and AP Music Theory. (Tr. at 3613-14; LR-01787-00026–00031.)

1088. Shenandoah Valley has aligned its curriculum to the Pennsylvania common core standards for ELA and mathematics. However, the district is still in the process of aligning the rest of its courses to state standards. (Tr. at 3671-73.)

1089. The description to the 7th grade Introduction to Computers course provides that students learn “how computers work, history of computers, keyboarding, and the Internet. The course also discusses Internet safety, cyber bullying, and identity theft. Students will use word processing software to create all their notes and study guides.” (Tr. at 3644-45; LR-01787-00027.)

1090. Shenandoah Valley's 9th grade English class covers Shakespeare, short stories, and epic poetry. (Tr. at 3605.)

1091. The core American Literature course offered to 10th grade students is described as follows:

This course will allow students to study the birth of our nation through various genres. The students will study Pilgrims coming to America, experience the American Revolution, enjoy the reconstructive period, gain insight into the philosophies of the transcendental era, agonize with the conflicts of the Civil War and move into modern day philosophies and writers. Students will be expected to read and comprehend stories, essays, poems, etc. This course will allow students to identify specific formats

William Penn School District; Panther Valley School..., Not Reported in Atl....

and creatively produce their own works.

*125 (Tr. at 3605-06; LR-01787-00020.)

1092. Students also take core courses in British Literature in 11th grade and World Literature in 12th grade. (Tr. at 3606; LR-01787-00019.)

1093. Shenandoah Valley students in 11th grade must also take a mandatory writing-intensive class, which the course guidelines describe:

[F]ocuses on developing and strengthening students' writing skills through the preparation and execution of multiple literary analysis essays, as well as a research paper. This course is designed to stress the importance of a student's improvement in writing over the whole of the course. Development of organizational skills and documentation of sources using MLA format and APA format as appropriate are also course expectations.

(Tr. at 3607-08; LR-01787-00020.)

1094. Shenandoah Valley offers high school students a variety of ways to obtain required science credits, including Physical Science, Applied Chemistry, Earth Science, Environmental Science 1 and 2, and Space Science. The description for Space Science provides, “[s]tudents will study the nature of science, the universe and the solar system, the developmental cycle of stars, the earth-moon system and space exploration.” (Tr. at 3608-09; LR-01787-00021–00024.)

1095. Shenandoah Valley offers a STEM course to fulfill science requirements, which description provides that students “develop and expand skills relating to idea development, research, creating and testing models,

evaluating designs, collaboration, and communication.” (Tr. at 3609-10; LR-01787-00023–00024.)

1096. Shenandoah Valley offers an American Government class, in which students study local, state, and federal government, including the “structure of government, political parties, campaigns, and elections, and [] citizenship and participation.” (Tr. at 3610-11; LR-01787-00025.)

1097. Shenandoah Valley requires all 12th grade students to take an economics course, which is described as covering

the basic economic problems of scarcity and choices, economic systems, markets[,] supply and demand[,] the roles of business, labor and government in the economic system[,] money and banking, measurement of economic performance, monetary and fiscal policy[,] and the world economy. An important focus of the course will be relating economic concepts to relevant life situations.

(Tr. at 3611-12; LR-01787-00025.)

1098. As shown by a survey of parents included in the 2019-20 school-wide plan for the Shenandoah Valley elementary school, “[p]arents are satisfied with Title [I] reading and math service” in the school. The parents stated: “Very pleased with the testing and teaching strategies of the teachers,” and “A fantastic job is being done with this program. Keep up the hard work and dedication to teach the students.” (Tr. at 3654-55; LR-00959-00003–00004.). Superintendent Waite testified that it is unfortunate that the district can only offer Title I reading and math to students in grades K-3, and if they could offer these supports in other grades, they might have similar responses. (Tr. at 3655.)

*126 1099. Shenandoah Valley offers its high school students several honors and AP courses, including Music Theory, Calculus, U.S. History, and European History. (Tr. at 3600-01.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1100. Shenandoah Valley also offers dual-enrollment classes to seniors ranked in the top 25 of their class through its Young Scholars program. Through this program, students take college-level courses approved by Shenandoah Valley and receive both high school and college credit through the Lehigh-Carbon Community College. As of the 2021-22 school year, Shenandoah Valley offers students four dual-enrollment courses: Research and Composition, Introduction to Psychology, Speech, and Introduction to Sociology. (Tr. at 3615-16; LR-01787-00032.)

1101. Approximately 33.7% of Shenandoah Valley students are taking rigorous courses of study, including 26.5% of students who are enrolled in college courses; 9.6% participating in AP/IB programs; and 3.6% participating in CTE. (Tr. at 3528-30; PX-02964-0009.)

1102. Shenandoah Valley offers students an opportunity to take career and technology courses through the Schuylkill Technology Center. Through these courses, students gain “the basic technical skills to assist all students to prepare for a career in tomorrow's high-tech workforce and enable students to get a head start on post[]secondary career. Programs offer basic entry level skills with hands-on training on computerized and technical equipment.” (Tr. at 3622; LR-01787-00037.)

1103. As of the 2021-22 school year, the Schuylkill Technology Center offers courses in:

- a. Architecture and Construction: carpentry, computer aided drafting, masonry, plumbing & heating technology, and residential/industrial electricity;
- b. Health Careers;
- c. Human Services: cosmetology, culinary arts, occupational child care, ornamental horticulture/environmental landscaping;
- d. Computer Information Systems;
- e. Manufacturing: electromechanical technology, machine trades technology, welding technology;
- f. Marketing; and

g. Transportation, Distribution & Logistics: automotive technology, collision repair & custom refinishing, and small engine technology.

(Tr. at 3624-26; LR-01787-00037-00038.)

1104. “Schuylkill Technology Center programs of study have articulation agreements to various post[]secondary [and] higher education institutions, ... providing for [AP] and advanced skill opportunities.” (Tr. at 3623; LR-01787-00037.)

1105. Among Shenandoah Valley's business education courses is its Y.E.S. Certificate Program, short for “Your Employability Skills.” “The Y.E.S. Certificate Program is a one-credit, 120-hour, yearlong elective course targeted at [12th grade students].” Through this program,

[s]tudents participate in plant/business tour(s) throughout the year and business professionals present in the classroom to further discuss the modules and how they are applied in the work environment. Key areas of study include communication, teamwork, personal development, technology, safety and health, quality of work, and the development of reading and math skills.

(Tr. at 3613; LR-01787-00027.)

1106. The high school has a marching band and a concert band open to any students who want to join. (Tr. at 3817-18.) Students in fifth and sixth grades may also participate in the band. (Tr. at 3421.)

*127 1107. Additionally, Shenandoah Valley students can participate in Band Front, Drama Club, Student Council, National Honor Society, and Yearbook. (Shenandoah Valley's Response to President Pro Tempore's Fifth Set of Interrogatories, Interrogatory No. 1 (Dec. 16, 2019).)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1108. Shenandoah Valley students also have access to a STEM ecosystem, which offers students opportunities and resources for learning in STEM fields. (Tr. at 3773-75.)

1109. Superintendent Waite testified that Shenandoah Valley's extracurricular options are “not enough to provide [students] a well-rounded education[,] to give them the experience and exposure to the many opportunities they could have and the many different types of skills[.]” (Tr. at 3481-82.) Only three of the extracurricular activities — drama, student council, and band — are non-athletic. (Tr. at 3478-82.) The district offers a few sports, including cross country, football, volleyball, basketball, golf, track and field, softball, baseball, wrestling, and soccer. Some of these activities are run through a cooperation agreement, which requires students to secure their own transportation to practices. (Tr. at 3478-80.)

1110. Shenandoah Valley teachers provide after-school tutoring to students in 7th through 12th grade. (Tr. at 3691-92.)

1111. Shenandoah Valley has a school-wide behavior support program in its elementary school. (Tr. at 3695.)

1112. Shenandoah Valley offers at-risk kindergarten through third grade students extended school day and after school tutoring programs for reading and math, as well as in-class instructional support, and pull-out instructional support. (Tr. at 3661-62; LR-00959-00023.)

1113. Shenandoah Valley offers some students the opportunity to participate in the SHINE program, which stands for “School Home in Education.” The SHINE program is an after-school program that helps students in kindergarten through sixth grade with homework and provides those students with meals. (Tr. at 3650-51, 3772-73.) The program has a limited number of students who can participate. (Tr. at 3650-3651). As part of the SHINE program, participating students also visit kindergarten students in their homes to see how the kindergarten students are handling school. (Tr. at 3733-34.)

1114. The district offers a summer program for ELL students. (Tr. at 3695-96.)

1115. Shenandoah Valley also has the Successful Student Partnership Program, which is a homework assistance

program designed to increase student achievement and graduation rates by offering tutoring services to students in need every Monday through Thursday. Students receive assistance from qualified teachers and peer tutors based on available staffing. (Tr. at 3692-94; LR-00981.)

1116. Shenandoah Valley offers a pre-K program called “4K,” which is funded out of the district's general fund budget. (Tr. at 3664-65.) During the 2018-19 school year, on the Pennsylvania Early Literacy Indicators assessment, 50% of the baseline pre-K students were at or above the benchmark at the beginning of the year, and 82% were above the benchmark at the end of the year, which is a 32% increase. (Tr. at 3666-67; LR-00959.)

1117. Approximately 67% of Shenandoah Valley students go through the 4K program. (Tr. at 3669.)

1118. In May 2019, after Shenandoah Valley added a third section of pre-K, class sizes in the 4K program were between 11-16 students. In December 2019, pre-K class sizes were between 15-17 students. (Tr. at 3704-05, 3709; LR-00962-00010; LR-00956.)

*128 1119. Shenandoah Valley partners with IU 29 to offer early intervention programs. (Tr. at 3668-69.)

1120. Shenandoah Valley requires graduating students to demonstrate proficiency in ELA, mathematics, science and technology, and environment and ecology. Proficiency is determined through “locally approved and administered assessments” that are designed by teachers. (Tr. at 3741-43; LR-00924-00016–00017.) A letter grade of “D” or above is considered proficient. (Tr. at 3743.)

1121. PSSA and Keystone Exam scores are not part of Shenandoah Valley's graduation requirements; instead, standardized tests are “only one way to assess a student's abilities.” (Tr. at 3764.)

1122. In the 2019-20 school year, Shenandoah Valley's 4-year cohort graduation rate was 87.18%. (Tr. at 3740; LR-05050A-00003.)

1123. As of the 2019-20 school year, approximately 60.81% of Shenandoah Valley High School graduates

William Penn School District; Panther Valley School..., Not Reported in Atl....

stated they planned to pursue postsecondary education. (LR-05050A-00010.)

1124. In one recent year, Shenandoah Valley students received acceptances from 36 different universities and were offered scholarships totaling \$1.7 million. (Tr. at 3762-64; LR-01951.)

1125. Based on Shenandoah Valley High School's 2019-20 Future Ready PA Index, 11.5% of graduates enlisted in the military and 46.2% entered the Pennsylvania workforce. (LR-05050A-00011.)

1126. In the 2018-19 school year, 99.46% of Shenandoah Valley elementary students were promoted to the next grade level. (LR-05050A-00004.)

1127. Shenandoah Valley uses an assessment tool called Acadience math. In the 2018-19 school year, third grade students improved from 32% to 74% above benchmark on the Acadience math program. (Tr. at 3656-58; LR-00959-00006.)

1128. On the Future Ready PA Index's Career Standards Benchmark for the 2019-20 school year, Shenandoah Valley scored 99.3%, which was higher than the state average of 89.8%. (Tr. at 3521-22; PX-2964-0007.) Similarly, on the Future Ready PA Index for the 2021-22 school year, Shenandoah Valley's elementary students scored higher than the statewide average for academic growth in ELA/literature and mathematics/algebra. (Tr. at 3589; LR-04107-00002.) Specifically, in ELA/literature, the academic growth score was 76.0 compared to a statewide average growth score of 75.0, and in mathematics/algebra, the academic growth score was 100 compared to the statewide average of 75.3. (LR-04107-00001.)

1129. Despite this high growth score, the Future Ready PA Index showed only 48.7% of Shenandoah Valley Elementary School students scored proficient or advanced on the state assessments for ELA/literature, compared to the statewide average of 62.1%. (LR-04107-00001.) On the mathematics/algebra assessments, 38.4% of the elementary students were proficient or advanced, compared to a statewide average of 45.2%. (LR-04107-00001.) Its elementary students exceeded the statewide average in science/biology by nearly 10% (75.4% to 66.0%). (LR-04107-00002.)

1130. In 2016-17, Shenandoah Valley exceeded the growth standard for the ELA PSSA exam. (LR-05050A-00001.)

1131. In 2017-18, Shenandoah Valley met the growth standard for the Algebra I and Biology Keystone Exams. The district also exceeded the growth standard for the Literature Keystone exam. (LR-05050A-00001.)

*129 1132. In 2018-19, Shenandoah Valley met growth expectations for the ELA PSSA, and Algebra I and Literature Keystone Exams. (LR-05050A-00001.)

1133. Shenandoah Valley's high rate of ELL students can skew its test scores, as students' difficulties with the English language influences their ability to score advanced or proficient on standardized tests. (Tr. at 3799.)

1134. Shenandoah Valley consists of one campus that includes two classroom buildings: one for 4-K through 6th grade and a second building for 7th through 12th grades. (Tr. at 3377.)

1135. Shenandoah's building was built in the 1980s, with an addition that was constructed around 2012. (Tr. at 3508, 3721-22, 3724.) The two boilers in the building — the useful life of which are 25 years — are 40 years old and need to be replaced. (Tr. at 3509-10.) Until the district received ESSER funds, the building's only air conditioning was outdated window units. (Tr. at 3508-09.)

1136. Superintendent Waite testified that prior to the COVID pandemic, Shenandoah Valley had only approximately 300 Chromebooks for a district of 1,100 students. (Tr. at 3466.) Currently, every student in Shenandoah Valley has a Chromebook laptop. (Tr. at 3736-37, 3830.) Shenandoah Valley did not become one-to-one until the start of the 2021-22 school year, 18 months after the pandemic began. (Tr. at 3470-71.) Even if it had, because the district did not have technology before, its teachers did not have the skills, and the district did not have an online platform, to deliver online learning. (Tr. at 3467-68.) Instead, the district provided bi-weekly paper packets. (Tr. at 3468.) Superintendent Waite described reviewing the paper packets that teachers sent home in lieu of online instruction during the shutdown and realizing that “even with teachers trying to provide explicit directions ... we could see by the information that was coming back that [the students] definitely did not have the ability to know the

William Penn School District; Panther Valley School..., Not Reported in Atl....

materials as well as they would if they were sitting in front of a teacher in face-to-face instruction.” (Tr. at 3472.)

1137. Shenandoah Valley returned, to a hybrid model, in the 2020-21 school year, with enough devices to provide those students who did not have devices of their own and wanted to remain remote, rather than in-person. (Tr. at 3471.)

1138. At Shenandoah Valley High School, computer laboratories and mobile computer laboratories are provided to students to “ensure use and application of computers and software[,] including word processing, databases, spreadsheets, and telecommunications.” (LR-00924-00005.)

1139. Shenandoah Valley has used ESSER funds to upgrade Internet technology. (Tr. at 3737.)

1140. Since 2015, Shenandoah Valley has purchased new print textbooks for AP Calculus and a variety of new digital textbooks for social studies, science, and ELA. (Tr. at 3738-39.)

1141. Superintendent Waite testified that in his district, from the period of 2014-15 through 2019-20, the BEF increased by \$295,522 annually. (Tr. at 3500-01.) But, according to Superintendent Waite, that increase pales in comparison to the increases in mandatory expenses the district faces, and the increased costs of operating expenses, including the costs of teacher salaries. (Tr. at 3501-03.)

***130** 1142. In the 2019-20 school year, Shenandoah Valley received \$10,960.23 in state revenue per ADM, placing it in the top 20% of schools in Pennsylvania in state revenue per ADM. (Tr. at 3484; PX-04888.)

1143. Shenandoah Valley's 2020-21 general fund budget anticipated an ending fund balance of \$3.7 million. When it completed its current budget, Shenandoah Valley revised that number up to \$6.1 million. (Tr. at 3780; PX-04563-0026; PX-04572-0026.) Superintendent Waite recognizes that this was a significant increase. (Tr. at 3781.)

1144. In its budget for the 2021-22 school year, Shenandoah Valley anticipated receiving \$18,745,269 in revenue, consisting of \$5.1 million in local funding, \$12.7 million in state funding, and \$898,000 in federal funding. (Tr. at 3783; PX- 04572-0006–0007.)

1145. For the 2021-22 school year, Shenandoah Valley received about \$8.3 million in BEF funding, which is about a \$153,000 increase, or a 1.9% increase, from the prior school year. (Tr. at 11625-26; LR-01581-00008.)

1146. In the budget for the 2021-22 school year, Shenandoah Valley projects a total ending fund balance of \$5,885,878. That includes an unassigned fund balance of \$1,520,878. (Tr. at 3776; PX-04572-0026.) Although Shenandoah Valley anticipates receiving approximately \$7.3 million in additional ESSER funds over the next three years, it has not included any of these funds in its budget for the 2021-22 school year. (Tr. at 3789-91.)

1147. From 2016 to 2020, Shenandoah Valley increased its general fund balance from \$2.3 million to \$5.8 million. On average, Shenandoah Valley's general fund balance increased by \$700,000 per year over that time frame. (Tr. at 3563-64; LR-03196.) Comparatively, it costs the district approximately \$60,000 to hire a new employee. (Tr. at 3565.)

1148. The district will need to use its fund balance to replace a 40-year-old coal-fired boiler that is already 15 years past its expected life cycle, to buy vans for special education students, and to replace the technology that is now required in a post-pandemic society. (Tr. at 3509-11, 3565-67.)

1149. Shenandoah Valley received Level-Up supplemental funds this year as part of the BEF appropriation. (Tr. at 3534.)

1150. So far, Shenandoah Valley has received \$550,000 in ESSER I funding. With its ESSER funds, Shenandoah Valley purchased Chromebooks and PPE for students, as well as textbooks for online learning, internet connectivity, and transportation. In the future, the district plans to use ESSER funds to update heating and ventilation systems and upgrade its air- conditioning systems. (Tr. at 3505-07, 3735-39.)

1151. Shenandoah Valley is looking to hire an additional ELL teacher and social worker using its ESSER funds. (Tr. at 3394-95, 3455.) Superintendent Waite testified that even though he was advised to use the funds for one-time expenses, the district decided to use some ESSER funds to lower class sizes and hire specialists. (Tr. at 3507-08.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1152. When asked about Shenandoah Valley's greatest challenges, Superintendent Waite testified,

[w]e have poverty, which is a big challenge for us in our district. We have a high population of ELL learners, English language learners, in our district. We have a high population of students with special needs. And embedded in the students with special needs, we have a good number of students that I term as “low-incident” students, which means ... they are in classes like Autistic Support[.]

*131 (Tr. at 3372-73.)

1153. Superintendent Waite described his role as being someone who creates “collateral damage” in “trying to provide opportunities for kids in [his] district” because “he can't meet those needs.” (Tr. at 3373.) He recounted a story from the past year where, to solve the problem of having only two teachers to cover over 60 pre-K students, he was forced to move a Title I reading specialist from their current role into a pre-K classroom. (Tr. at 3373-75.) To address the gap that move created, he then had to assign the elementary school principal the responsibilities of that reading specialist, forcing one of his administrative staff to take on two separate jobs. (Tr. at 3373-75.)

7. Wilkes-Barre

1154. Petitioners presented the testimony of Wilkes-Barre's Superintendent, Dr. Brian Costello. (Tr. at 10643.) Additionally, the parties provided the designated deposition testimony of Wilkes-Barre's Business Administrator, Thomas Telesz. (Parties' Joint Designations of the 1/30/2020 Deposition of Thomas Telesz (Telesz Dep.) at 7.) In addition, Student Petitioner Mr. Horvath, who attended Wilkes-Barre, testified about his experiences. (Tr. at 10032-33.) The Court finds that each of these witnesses credibly testified.

1155. Located in Luzerne County, Wilkes-Barre “has a rich tradition of academic excellence, athletic competitiveness, and community and social involvement.” (Tr. at 10886-87.)

1156. Wilkes-Barre operates 9 schools with total student enrollment of 7,089 students as of 2020-21. (Tr. at 10648; LR-05069A-00005.)

1157. Wilkes-Barre's demographics are as follows:

Tabular or graphical material not displayable at this time.

(PX-04809.)

1158. In 2019-20, Wilkes-Barre had total revenues of \$125.3 million. (LR-05079.) Across a variety of measures, Wilkes-Barre is a low-wealth, high-need, high-effort, low-spending district:

Tabular or graphical material not displayable at this time.

(PX-04890.)

1159. By median household income, Wilkes-Barre ranks 441st out of 499 districts, and just over 80% of students are classified as low-income, ranking 16th highest in the state. (PX-04890).

1160. As a result of economic disadvantage within the community it serves, many of the district's students come to school with non-school-related challenges that can have an impact upon their learning. For instance, as Dr. Costello testified:

Some of our children who are classified as “economically disadvantaged” come in [at] a very early age to school without the necessary literacy skills that they may need. They might not be surrounded [by] vocabulary that other students may have within their household. Some of these students are unable to attend pre-K. These students have a

William Penn School District; Panther Valley School..., Not Reported in Atl....

situation where the school supplies that we would require for schools, their parents are unable to afford.

Food is a concern for [economically-disadvantaged] students, hot [meals]. Sometimes the parents are working multiple jobs, and they're unable to be with their families — or, with their children at night after school, and they're unable to help or assist a student — a child with a project or homework.

***132** And even with healthcare, some of our families don't have the ability to provide the necessary healthcare that they need, the attention that students need when they're sick.

(Tr. at 10737-39.)

1161. Dr. Costello also testified about the challenges that homeless students face and stated as follows: “And our district does everything we possibly can to try to help these students, but they have tremendous barriers that have to be overcome.” (Tr. at 10741-42.) Dr. Costello asserted that, if a school district's students and their families are experiencing housing problems, the district has the responsibility to try to provide them with resources to assist with those problems. (Tr. at 10890-91.)

1162. Because of these outside factors, many students enter Wilkes-Barre's school system already behind in the literacy skills that they may need to succeed. (Tr. at 10738.)

1163. According to the Fair Funding Formula, Wilkes-Barre has the 19th highest need student population in the Commonwealth. (PX-04890.) Putting its need and wealth together, the district's local capacity per weighted student ranks 413th of 499 districts. (PX-04890.) By current expenditures per weighted student, Wilkes-Barre ranks 488th in the Commonwealth. (PX-04890.)

1164. According to the Special Education Fair Funding Formula, Wilkes-Barre has the 101st highest need special education population in the Commonwealth. (PX-04890.) And by the Level Up formula, Wilkes-Barre is the 15th lowest spending district in the Commonwealth. (PX-04778, Tab “Level Up Supplement,” Column G; Tr. at 11733-34.)

1165. Wilkes-Barre has regularly raised its taxes, which are the second highest in Luzerne County, and higher than approximately 80% of the Commonwealth. (Tr. at 10683-85; PX-04890.) When measured by Local Effort Capacity Index, Wilkes-Barre ranks 16th highest in the entire Commonwealth. (PX-04890.)

1166. Despite these challenges, the district presents “many opportunities” to its students. (Tr. at 10969.)

1167. In 2020-21, Wilkes-Barre had 953 reported professional and support personnel, comprised of 506 professional personnel (18 administrators and 437 classroom teachers); 312 full-time support staff; and 135 part-time support staff. (LR-05069A-00008.) Dr. Costello indicated that, since he started as superintendent six years ago, there had been a significant decrease in teachers, from 540 to about 450. (Tr. at 10754.)

1168. In 2020-21, the average classroom teacher at Wilkes-Barre had 17.6 years of teaching experience and 17.6 years of experience in the district. (LR-05069A-0006.) The experience level of Wilkes-Barre's teachers has increased every year for the past decade. In 2012-13, the average classroom teacher had 12.4 years of teaching experience and 11.7 years of experience in the district. (LR-05069A-00006.) In 2020-21, 425 out of 507 professional educators in the district had a master's degree or higher. (LR-05069A-00007.)

1169. Wilkes-Barre teachers are highly rated on district evaluations. For the 2018-19 school year, no teachers were rated “failing” or “unsatisfactory.” Six teachers were listed as “satisfactory,” while 356 teachers were rated “proficient” and 104 were “distinguished.” (Tr. at 10966-67; LR-00458, Tab “2018-2019 LEA SD Totals,” Row 481.)

***133** 1170. Wilkes-Barre has 11 building administrators, one for each elementary and middle school, and four at the high school. (Tr. at 10764.)

1171. Wilkes-Barre provides professional development to its teachers, including instruction on administering PSSA tests, Keystone Exams, and best practices for technology. (Tr. at 10902-03.) The district schedules between seven and eight half-days of teacher professional development per year. (Tr. at 10904.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1172. For the current school year, Wilkes-Barre's teacher salaries range from \$46,115 for a first-year teacher with a bachelor's degree to \$85,989 for a teacher with a Ph.D. and 15 years or more of experience. (Tr. at 11059; LR-01063-00044.) The average teacher salary in the district as of 2020-21 was \$73,329. (LR-05069A-00006.) The current teachers' contract which extends from 2016-23 provides for a two-year freeze with no vertical movement or pay increases for educators. (Tr. at 11001.)

1173. From 2011 to 2015, Wilkes-Barre teacher salaries were above the state average. After negotiations in 2016, Wilkes-Barre teacher salaries are now closer to the state average. (Tr. at 11000-01; LR-01086-00007.) Dr. Costello explained that, prior to the new contract, the district was relying on grant money to hire additional staff but, when the grant money was not available, the district still had to provide that programming, and that there were state cuts to funding and an increase in mandated cost, which led to the district having financial difficulties in 2015-16. (Tr. at 11001-02.)

1174. Teachers, secretaries, and other educational support personnel all receive the same healthcare coverage from Wilkes-Barre. Staff with at least two years of experience receive full family PPO health coverage, full dental coverage, and full vision coverage at the district's sole cost. The cost of full family coverage to the district is about \$29,000-30,000 per teacher per year. (Tr. at 11059-60; LR-01063-00032-00033.)

1175. Wilkes-Barre has five dedicated reading specialists, one at each elementary school, each with a caseload of approximately 600-800 students, which Dr. Costello calls a "completely inadequate" ratio for the level of student need. (Tr. at 10760-62.) There are no reading specialists at the middle or high school. (Tr. at 10762.) And Wilkes-Barre does "not have any math specialists that are being utilized to provide one-on-one instruction or small group interventions[.]" (Tr. at 10762.)

1176. Dr. Costello described the dilemma the district faces:

We don't have the ability to analyze the situation and say that this is something that we — we need. We need a Title I reading teacher to help provide interventions for our students without taking away from something else. We just don't have that ability.

So every time we try to implement a program, provide additional support service, we have to take away from another program that has always — that had already existed.

(Tr. at 10669.)

1177. Wilkes-Barre also has 1 guidance counselor at each school except for the high school, which has 4, totaling 11 guidance counselors in the district. (Tr. at 10762, 10764.) In some of the district's schools, this translates to a ratio of 1 guidance counselor for 900 students. (Tr. at 10762-63.)

*134 1178. Wilkes-Barre has four psychologists. Additionally, although Wilkes-Barre does not employ its own social workers, it contracts with the local IU to provide limited social work services. (Tr. at 10765-66.)

1179. Wilkes-Barre has nine nurses. Also, Wilkes-Barre has 3 truancy officers, called "Home and School Visitors," who are responsible for 7,500 students. (Tr. at 10767-68.)

1180. Wilkes-Barre lacks elementary art teachers as it was forced to furlough those teachers due to funding constraints. (Tr. at 10685-86, 10688.)

1181. In 2020-21, Wilkes-Barre's student-to-teacher ratio was 7.4 students per staff member and 16.2 students per classroom teacher. (LR-05069A-00009.)

1182. Prior to the consolidation of its high schools, and according to data that Wilkes-Barre submitted to the Pennsylvania Auditor General, the district's high school class sizes were very low – approximately 15 students per class, including electives. In core subjects, the average class size ranged from 16 to 18 students per class. The classes at its new consolidated high school will have 24 or fewer students. (Tr. at 11127-31; PX-03905.)

1183. With regard to Wilkes-Barre's elementary schools, Dr. Costello identified a range of different class sizes during his testimony. For instance, Dr. Costello stated that Wilkes-Barre has recently been able to lower class sizes in its elementary schools from close to or over 30 to between 18 and 22 students by using ESSER funding to bring back 13 of 30 furloughed teachers, via a memorandum of understanding with the union,

William Penn School District; Panther Valley School..., Not Reported in Atl....

and by repurposing Title I reading specialists as elementary teachers. (Tr. at 10754-56, 10758-59.) However, he stated, when the funding runs out, the extra teachers will no longer be available. (Tr. at 10756.) In another instance, Dr. Costello stated that, at certain grade levels, the district's strategies to lower class sizes has worked, including creating a 6th to 8th grade middle school and using the furloughed teachers, which resulted in there being "16 to 18 students" in an elementary classroom. (Tr. at 10995.) Dr. Costello also stated that Wilkes-Barre was "once again, approaching the mid-20s for [its] elementary schools" due to the transient nature of the district's population, even with the additional teachers. (Tr. at 10759.) At other grade levels, there are more students per classroom, such as 24 at the high school level. (Tr. at 10758-59, 10993-95, 11067-68.)

1184. Wilkes-Barre offers a daily 30-minute remediation period for its middle school students, and a daily 45-minute remediation period for its high school students so that students can meet with teachers for extra help after school. (Tr. at 10769-70.) However, teachers often have 120 students or more in that block, and while the district is able to offer after-school transportation for its high school students 5 times a week, the district is only able to offer after-school transportation for its middle school students 2-3 times a week. (Tr. at 10770-71.) Student Petitioner Mr. Horvath testified when he struggled in math, his only tutoring option was provided by his peers, not professionals. (Tr. at 10055-56.)

1185. According to its District Level Plan, Wilkes-Barre schools "offer a variety of programs for student participation, both academic and extracurricular. Tutoring programs, remediation services[,] as well as content area clubs exist in all schools." (Tr. at 10893-94; LR-01113-00005.) Dr. Costello confirmed that this remains true today, except that certain remediation services, such as the district's foster grandparents' program, have been paused because of COVID, while other remediation services, such as a summer school program centered on project-based learning, have been added with ESSER funds. (Tr. at 10893-95.)

*135 1186. In his Superintendent's Message to the community posted on the district's website, Dr. Costello summarized that "Graduates of Wilkes-Barre Area School are not only prepared for post[]secondary education, but are also leaders within the community, armed services, and possess the necessary skills to be productive members of the

workforce." (Tr. at 10884; LR-01778-00001.) Dr. Costello agreed at trial, the language contained in his Superintendent's Message provides an accurate picture of the quality of the education being delivered in the district. (Tr. at 10886.)

1187. Wilkes-Barre offers a "dynamic, comprehensive curriculum" that is aligned with state standards in all "major subjects." (Tr. at 10838-39, 10887.)

1188. The courses offered to Wilkes-Barre students in grades 7-12 were set forth in Wilkes-Barre's Program of Studies and further discussed during Dr. Costello's testimony. In middle school, all Wilkes-Barre seventh grade students have a class in reading and a class in English. The class in English forms a foundation for the Integrated Language Arts Program, which

provides holistic instruction in reading, writing, listening, speaking, and research skills; understanding fiction and nonfiction components within/beneath texts, literary devices and organizational concepts within text assist in both understanding literature and developing reading skills. Students focus on various types of literature such as short story, novel, poetry and nonfiction. Students learn the five domains of effective writing by producing works in the expository/informative, persuasive, and narrative modes. Students also begin the process of research, while speaking and listening skills are developed through oral presentations.

(Tr. at 10923-24; LR-04078-00008.) Similarly, "Eighth grade English continues to form a solid foundation for the secondary [ELA] Program." (Tr. at 10928; LR-04078-00008.)

1189. Ninth grade English in the district

continues to emphasize instruction in integrated reading, writing, listening, speaking, grammar, usage, and research. The literature includes a variety of genres, including short story, poetry, prose forms, and drama. Students are exposed

William Penn School District; Panther Valley School..., Not Reported in Atl....

to a broad range of types of literature through the American, British, and world selections presented through the text.

Students utilize the five domains of effective writing while producing works in the expository/informative, persuasive, and narrative modes. Students also continue the process of research as they compose a research paper.

(Tr. at 10931-32; LR-04078-00009.)

1190. Tenth grade English includes “a blend of reading, writing, and speaking skills. Students are required to read and analyze American literature in order to experience fundamental features of diverse literary styles and genres.” (Tr. at 10932; LR-04078-00010.)

1191. Eleventh grade English focuses on British literature, including Shakespeare, Chaucer, Swift, and Orwell. Twelfth grade English “complements all previous integrated language arts instruction as it prepares students to participate in the global community.” (Tr. at 10933; LR-04078-00011.)

1192. The district's high school English department also offers many electives, including Journalism, Public Speaking I & II, AP English, Cultural Perspectives through Children's Literature, Literature in Film, and Creative Writing. (Tr. at 10934; LR-04078-00013–00015.)

1193. In mathematics, Wilkes-Barre seventh graders take classes in either Pre-Algebra A or Advanced Pre-Algebra A. Eighth grade students who successfully complete Pre-Algebra A, which requires a grade of 70 or higher, will take Pre-Algebra B, while students who complete Advanced Pre-Algebra A will move on to Advanced Algebra. (Tr. at 10943-44; LR-04078-00030.)

***136** 1194. Starting in ninth grade, Wilkes-Barre offers three different math tracks, so that students who took Advanced Algebra in eighth grade will take Algebra II in ninth grade, and students who took eighth grade Pre-Algebra B will move on to either Concepts of Algebra or Algebra I. In tenth grade, Wilkes-Barre students take Algebra I, Algebra II, or Geometry. In eleventh grade, students take Algebra II, Geometry, or Algebra III/Trigonometry. (Tr. at 10944-45; LR-04078-00030.)

1195. Other courses offered by Wilkes-Barre's high school mathematics department include Advanced Geometry, Trigonometry Pre-Calculus, Calculus, AP Calculus, Consumer Applications, College Ready Math, and Probability and Statistics. (Tr. at 10945-46; LR-04078-00033–00035.)

1196. In social studies, Wilkes-Barre middle school students learn about world history and cultures. In seventh grade, they take World Cultures, which covers “major geographic, cultural, historic and global events in addition to major cities, world landmarks and wildlife.” In eighth grade, students take Western Civilization, which “examines world history and the rise of early civilizations from the birth of civilization to the exploration of the Americas.” In ninth grade, students take U.S. History. (Tr. at 10936-37, 10941; LR-04078-00022–00023.)

1197. Wilkes-Barre's high school social studies department also offers AP U.S. History, Civics and Economics, Psychology, AP Psychology, Political Science, Law in America, Art in History, Modern U.S. History, Sociology, and Holocaust History. (Tr. at 10942-43; LR-04078-00022.)

1198. In science, Wilkes-Barre offers two different tracks in seventh and eighth grade. Students can take either Science 7 and Science 8 or Advanced Science 7 and Advanced Science 8. (Tr. at 10948; LR-04078-00039.)

1199. At the high school level, ninth graders take Environmental Science or Biology 1 Advanced, tenth graders take Biology 1 or Chemistry 1 Advanced, and eleventh graders take Chemistry 1, Earth & Space Science, Physics 1 Advanced, or a science elective. (Tr. at 10948-49; LR-04078-00039.)

1200. Science electives offered at Wilkes-Barre's high school include Anatomy and Physiology, Physics 1, Biology 2 Advanced, Advanced Chemistry 2, Earth and Space, AP Biology, AP Chemistry, and AP Physics. (Tr. at 10949; LR-04078-00039.)

1201. Wilkes-Barre's high school foreign language department offers elective classes in Spanish I through IV, German I through IV, and French I through IV. (Tr. at 10935-36; LR-04078-00017.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1202. Wilkes-Barre offers Introduction to Computer Applications, which introduces students to keyboarding and Microsoft Suite applications. Every student in Wilkes-Barre is required to take an introduction to computers course. (Tr. at 10950-51; LR-04078-00047.)

1203. Wilkes-Barre also offers Computer Programming 1, 2, and 3, and AP Computer Science to its high school students. Computer Programming 3 comprises “advanced topics including multidimensional arrays, recursion, polymorphism, and algorithm analysis, all while using the Java programming language. The second semester includes other computer programming concepts including HTML5, Unity development engine, et cetera.” (Tr. at 10946-47; LR-04078-00036–00037.)

1204. Wilkes-Barre's high school Business Department offers courses in Accounting 1, Accounting 2, Advanced Software Applications for Business and Industry, and Advanced Business Application Skills. (Tr. at 10951-53; LR-04078-00046–00048.)

*137 1205. Wilkes-Barre offers General Music twice a week to all seventh and eighth grade students. The course description for General Music provides:

The course is designed so ... student[s] may develop an awareness for music, may become familiar with music vocabulary and the sound of various musical styles from different cultures, may gain a knowledge of instruments of the orchestra and the lives of various composers, and may learn proper vocal techniques through classroom singing in a non-performance environment.

Before the COVID pandemic, students could take instrumental music, orchestra, chorus, and band. (Tr. at 10953-55; LR-04078-00053.)

1206. Although the course book includes a long list of subjects and electives, the district does not actually offer all

of the classes listed each year, and some are simply no longer offered. (Tr. at 10852-54.)

1207. In addition, Dr. Costello testified about the low enrollment in rigorous classes, by way of example, explaining many students:

never really had the opportunity to take that class, even though we offered it, the AP calc, because of their track and their sequence. And that's based on the fact that from elementary school on, there was an achievement gap and we didn't have the necessary resources to get those individuals or those children up to speed so that they were able to be set up in a situation where they would be able to succeed in a math sequence that would allow for them to enter AP courses.

So that's kind of how all of our AP courses go. If you don't have the necessary prerequisites to get in — and I just want to be clear; it's sometimes not their choice. That's the track that they're on. And based on that track, it's just not possible for them to enter those courses or enroll.

(Tr. at 10840-41.)

1208. Wilkes-Barre has a STEM Academy that has been so successful that one or two students have moved into the district just to attend the STEM Academy. (Tr. at 11026.)

1209. The STEM Academy offers courses including Principles of Engineering, Civil Engineering and Architecture, Environmental Sustainability, and Computer Science Principles. (Tr. at 11088; LR-01137.)

1210. Originally, the STEM Academy was housed in a leaking basement, and enrollment was limited due to space. (See PX-03553; PX-03559.) Now that Wilkes-Barre has consolidated its high schools into a new building, space is no longer an issue, but enrollment in the STEM Academy is still restricted by two other factors. First, in a district with classes between 550 and 600 students, the district only has staff to allow approximately 70 students to participate. (Tr. at 11084, 10775-76.) Second, prerequisites mean that participating is not feasible for many other students. (Tr. at 10666-67.)

1211. Half of STEM Academy participants are economically disadvantaged. Approximately 53% of STEM Academy

William Penn School District; Panther Valley School..., Not Reported in Atl....

participants are female and 46% are male. (Tr. at 10665-66; PX-02997-0001.)

1212. Wilkes-Barre now has a Business Academy, which started during the current school year with approximately 20 students. (Tr. at 10657-58.) Discussing the Business Academy, Dr. Costello said, “that program has already been extremely successful[.]” (Tr. at 10657-58.) The mission of the Business Academy is to “provide students with an integrated program of academic subjects and competitive business practices, preparing them for postsecondary education or entering the workforce with competitive business skills.” (Tr. at 11091-92; LR-01155.) The Business Academy offers classes including Foundations of Business, Mobile Apps and Web Design, and Professional Communication and Leadership. (Tr. at 11090; LR-01154.)

*138 1213. In addition, Wilkes-Barre operates as a distinct program within its high school a Creative and Performing Arts Academy (CAPAA). (Tr. at 10656-57.) The CAPAA program “has had great success,” as Dr. Costello explained. (Tr. at 10657.) CAPAA offers courses including Music, Choral/Vocal Performance, Music and Instrumental Performance, Theatre Arts and Visual Arts, and Dance. (Tr. at 11093; LR-01156.)

1214. Dr. Costello explained the goal of something like CAPAA was not to send children to Broadway but instead to “create a program where students wanted to come to school and that we could motivate them, that we would have a better opportunity to have them achieve our expected goals.” (Tr. at 10657.)

1215. Wilkes-Barre participates in a CTC in partnership with several other school districts in the region. (Tr. at 10958.) This CTC currently offers a nursing program, and while Dr. Costello was unsure about other current programming, he stated, Wilkes-Barre students had previously participated in the Culinary Arts, Warehousing, Law Enforcement, Graphic Design, and Audio - Visual Media programs. (Tr. at 10961-63.) Any Wilkes-Barre student in grades 9-12 who desires to participate in a CTC program can spend half of their school day at the CTC. (Tr. at 10958-59.)

1216. Wilkes-Barre offers a dual enrollment program to its high school students through agreements with King's College, Luzerne County Community College, Misericordia

University, and Wilkes University. (Tr. at 11097-99; LR-01910-00003, 00010-00016.)

1217. Wilkes-Barre had a Saturday program called Project RAISE in two of its elementary schools, where students learned skills through project-based learning, which was funded with grant money. (Tr. at 10980-81; LR-01086-00004.)

1218. Wilkes-Barre has a cyber school program that serves approximately 400 students. The district pays between \$50,000 and \$75,000 for the whole program, which provides unlimited seats for the cyber school. (Tr. at 10855-56.)

1219. Wilkes-Barre offers a variety of sports to its high school students, including football, soccer, field hockey, cross country, wrestling, basketball, indoor track, lacrosse, softball, baseball, track and field, and tennis. (Tr. at 10830-31.)

1220. Wilkes-Barre offers a variety of other extracurricular activities, including at the high school level, band, chorus, outdoors club, speech and debate, chess club, math club, drama club, French club, Spanish club, German club, and school newspaper. (Tr. at 10836; LR-02074-00052-00053.)

1221. Dr. Costello testified: “I believe soft skills are very important for 21st [c]entury learners. They need to be able to collaborate, work as a team. They need to know how to communicate with each other, lead. And I believe sports and many of our extracurricular activities show that.” (Tr. at 10835.)

1222. Wilkes-Barre does not have its own district-funded pre-K program, but a private pre-K program called “Building Blocks” uses school facilities and receives state Head Start funding. Some students may also attend Head Start. (Tr. at 10769.) But no more than 40% of Wilkes-Barre students enter kindergarten with the benefit of some pre-K program. (Tr. at 10769.)

1223. Wilkes-Barre's graduation requirements are set by the school district. Among other things, the district requires 4 credits in English and 3 each in math, social studies and science, with a minimum grade of 70% required to receive class credit. (Tr. at 10908-11; LR-01113-00016.) Passing a class signifies “that the student met the minimum

William Penn School District; Panther Valley School..., Not Reported in Atl....

requirements of the coursework and they completed that coursework to achieve a 70 within that course.” (Tr. at 10926.)

*139 1224. As the district has affirmed in its District Level Plan, its graduation requirements require a demonstration of proficiency or above in ELA, mathematics, science and technology, and environment and ecology. (Tr. at 10912; LR-01113-00016–00017.) Dr. Costello testified that a diploma from Wilkes-Barre is a “stepping stone” for a student to pursue a career or to continue their education. (Tr. at 10865-66.)

1225. Wilkes-Barre's five-year cohort graduation rate for the five most recent years of available data is 85.40% in 2019-20; 88.05% in 2018-19; 86.68% in 2017-18; 88.97% in 2016-17; and 89.81% in 2015-16. Its graduation rate for economically-disadvantaged students is 83.71% in 2019-20; 88.36% in 2018-19; 85.78% in 2017-18; 87.43% in 2016-17; and 87.54% in 2015-16. In four of the past five years, Wilkes-Barre's five-year graduation rate for economically-disadvantaged students was above the state average in that category. Further, the district's five-year graduation rate for economically-disadvantaged students in 2018-19 and 2019-20 was above the measure of interim progress set in the State's ESSA Plan. (LR-05077A.)

1226. In the 2019-20 school year, 62% of graduating Wilkes-Barre students intended to attend a postsecondary institution; 29% intended to join the workforce; and 3% intended to join the military. Similarly, in the 2017-18 school year, 69% intended to go to a postsecondary institution. (Tr. at 11084-87; LR-01058; LR-01127-00004.)

1227. Wilkes-Barre measures students' academic performance using coursework, PSSAs, Keystone Exams, and growth formative and summative assessments. (Tr. at 10857.)

1228. In the 2018-19 school year, Wilkes Barre reported year-end grades for students in Grade 12. Of these grades, 81.39% were a C or above, 36.58% were an A, 27.32% were a B, and 17.49% were a C. (LR-05091-00009.)

1229. Despite Dr. Costello's emphasis on Keystone Exams over growth scores at trial, Wilkes-Barre does not require students to be proficient or advanced on Keystone Exams to graduate from the district. (Tr. at 10911.)

1230. Outside of Court, Dr. Costello has emphasized the importance of growth scores over assessment scores, writing in a 2020 message to Wilkes-Barre community members:

When you look at the growth, we see a different picture. The State growth average for [ELA] was 75. We had a growth score of 85. When looking at this together, although our proficiency is still lagging behind other Districts, we are showing growth. This will eventually lead to increased levels of proficiency. Our students will be gaining ground and not lagging or falling behind. We are making strides to achieve these State standards.

(Tr. at 10985; LR-01086-00005.)

1231. He also told the community, with respect to the district's academic growth, “Looking at the Keystone Exams, Wilkes-Barre Area ranked first in Luzerne County. We ranked 14th out of 587 districts and charter schools. That is the top three percent for growth on Keystone literature assessments throughout Pennsylvania.” (Tr. at 10988; LR-01086-00005.)

1232. As Wilkes-Barre has noted publicly, “We excel in all Chapter 4 career benchmark standards” contained in the Future Ready PA Index. Dr. Costello agreed that this statement is accurate. (Tr. at 10988; LR-01086-00005.)

1233. At a June 29, 2020 School Board meeting, a Wilkes-Barre board member noted that he advocates getting rid of Pennsylvania's standardized assessments and noted: “89% of our graduating students go on to college, military and trade schools. That is a statistic that I am most proud [of].” (LR-01086-0014.) Dr. Costello testified he could not verify the accuracy of this statement. (Tr. at 10991.)

*140 1234. Wilkes-Barre's nine schools include five elementary schools (Kistler, Dan Flood, Heights, Solomon, and Macklin); two middle schools (GAR and Solomon-Plains); and Wilkes-Barre Area High School. The district also

William Penn School District; Panther Valley School..., Not Reported in Atl....

operates the STEM Academy within the high school. (Tr. at 10649.)

1235. Wilkes-Barre Area High School is a new facility opened for the 2021-22 school year with a \$120 million bond offering. The new high school is a consolidation of three high schools that had previously existed in the district, Coughlin, Meyers, and GAR high schools. (Tr. at 10649-50, 10731.) Dr. Costello testified the consolidation was necessary because the prior schools were deteriorating and “not suitable for any student trying to learn.” (Tr. at 10693-95.) Dr. Costello described the buildings as “functionally obsolete.” (Tr. at 10670.) For example, at both Meyers and Coughlin, masonry was falling from the parapets due to the steel delaminating, causing the district to erect fencing around the perimeter of the buildings to protect from falling masonry. (Tr. at 10671-72, 10674, 10696-97.)

1236. The new high school cost approximately \$83 million to build. (Tr. at 11014-15.)

1237. Wilkes-Barre's new state-of-the-art high school includes an auditorium for 1100 students; a gymnasium with two gyms and a track; a student bookstore; a student video production facility called Wolf Pack Live; a STEM facility, which includes a production area, computer labs, collaborative spaces, and 3D printers; CAPAA music rooms; a Business Academy wing; a Learning Commons (library); and a fitness center with cardio equipment and free weights. The school also has five “pods,” each of which hold 32 classrooms, and one classroom wing has science labs with running water, hoods, and gas. (Tr. at 10825-28, 11023-25.)

1238. The new high school has a natatorium with an eight-lane swimming pool and an Americans with Disabilities Act (ADA) ramp for access. As Dr. Costello explained, the pool will be open to the community. (Tr. at 10828-30.)

1239. In addition to the new high school and adjacent natatorium, Wilkes-Barre is in the process of constructing a new multi-purpose field for its athletic teams. As Dr. Costello testified, the project has started and “[i]t's approximately 9, 9-and-a-half million dollars at this point.” (Tr. at 10833.)

1240. Regarding the new state-of-the-art high school, as Dr. Costello agreed, “the building most certainly addressed all the physical needs that we have. ...” (Tr. at 11015.) Dr.

Costello believes that residents of the district are “proud to have something like this within their community for their students to learn and then to receive an education in.” (Tr. at 11158-59.) All students currently enrolled in Wilkes-Barre, who continue to attend district schools, will be able to receive a portion of their education in that building. (Tr. at 11157-58.)

1241. The district also has a capital improvement plan that has allowed it to “put away money to repair roofs and upgrade buildings.” (Tr. at 10995-96; LR-01086-00006.) The capital improvements fund had \$5 million as of 2020, which had increased to approximately \$22-24 million as of the time of trial. (Tr. at 10995-96; LR-01086-00006.) This capital improvement plan, which extends out through 2032, includes deferred maintenance such as repairing roofs, caulking, and cement work. (Tr. at 11074.) While the district's capital improvement project schedule is on a 10-year schedule, Dr. Costello testified many of the district's “buildings have urgent needs right now” but any needed maintenance or repairs that directly impact the health or safety of students “would be jumped to the front of the line.” (Tr. at 11075.)

*141 1242. As Dr. Costello testified, the primary impetus of establishing the capital reserve fund is that

we were scared day to day based on what we were seeing with our two high schools for the safety of our students. And that was something that we wanted to make sure moving forward that we began to establish was a capital reserve fund so that we would be able to provide the necessary maintenance that our buildings need.

(Tr. at 10692.)

1243. A roof is being replaced at Kistler Elementary School. (Tr. at 10996-98.) Additionally, the district anticipates fixing the roof at Solomon-Plains Elementary School in the summer of 2022. (Tr. at 11073-74.) A project on the GAR middle school façade could not be completed as planned, and fencing around it is still required for safety purposes. (Tr. at 10996-97.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1244. The district intends to use ESSER funding to update or install HVAC systems. (Tr. at 10873-74, 11066-67.)

1245. Petitioners presented evidence regarding maintenance and repair issues concerning two of Wilkes-Barre's former high school buildings, Coughlin and Meyers, including what Dr. Costello described as structural deficiencies giving rise to safety concerns. (Tr. at 10670-72, 10674, 10696-10725; PX-03497; PX-03498; PX-03501; PX-03517; PX-03537; PX-03545; PX-03559; PX-03562; PX-03564; PX-03581; PX-03591; PX-03800; PX-03802.) For instance, at both Meyers and Coughlin, masonry was falling from the parapets due to the steel delaminating. Thus, fencing was placed around the perimeter of the buildings to protect students and pedestrians from falling masonry. (Tr. at 10671-72, 10674, 10696-97.) The district also had to install safety netting and blue shed-like structures across all the entrances of Meyers "to protect our students ... from falling debris" as they walked through the area. (Tr. at 10700, 10708-10.) In addition, the foundation of Meyers had shifted approximately 12 inches, and stress cracks were starting to appear, threatening the stability of the building. (Tr. at 10702-03, 10716-17.)

1246. Dr. Costello testified that according to a feasibility study drafted under the supervision of the district, it would have cost Wilkes-Barre over \$240 million to fix its three high schools. (Tr. at 10725-26; PX-03360-16.) By contrast, the district was told that a new high school would cost \$89 million and reduce operating costs moving forward. (Tr. at 10693-95.)

1247. Ultimately, Wilkes-Barre decided to close two of its high school buildings, and then consolidate its high school students into a single new building. (Tr. at 10693-95.) Dr. Costello testified that it was a difficult decision to consolidate the high schools, but Wilkes-Barre did so because the district could not provide the same programming and necessary student resources in all three schools due to a lack of necessary funding. (Tr. at 10732.) To pay for the new school, the district had to take out a \$120 million bond, increasing the district's debt service from \$4 million to \$8.5 million and forcing Wilkes-Barre to furlough staff and eliminate positions once teachers retired, all on top of the earlier cuts the district instituted because of its financial difficulties in 2016. (Tr. at 10729-31.) The bond is for 40 years because the district could not afford a more traditional 30-year bond. (Tr. at 10729-32.)

*142 1248. Following the construction of the new high school, Coughlin and Meyers are no longer used. The Coughlin building was sold for \$1.6 million, and the Meyers building is listed for around \$3.5 million. The Meyers building has not sold, but the hope is that it will still be sold for at least \$2 million. The proceeds from the sale of these facilities will go into Wilkes-Barre's capital reserve fund. (Tr. at 11068-71.)

1249. Petitioners also showed photographs and provided testimony regarding the condition of four of Wilkes-Barre's current school buildings: Flood Elementary, Heights Elementary, Kistler Elementary, and GAR Middle School. (Tr. at 10801-21.)

1250. Regarding Flood Elementary, Dr. Costello testified that water had caused [delamination](#) to occur to the exterior of the building and "some of the concrete is beginning to crumble." (Tr. at 10801-02.) Petitioners provided a photograph showing chipped and peeling concrete beneath one row of exterior windows at Flood Elementary. (PX-03631.)

1251. Regarding Heights Elementary, Dr. Costello testified about a photograph depicting a small bathroom with a missing door on one of the stalls, which, as he acknowledged, has subsequently been replaced, and missing floor tiles, which have not been replaced. (Tr. at 10804; PX-03660.) Dr. Costello also testified about a photograph of a "typical classroom," which he characterized as being "tight," having mismatched chairs at the desks, and having cold temperatures, as evidenced by 1 of 12 pictured children wearing a coat. (Tr. at 10805-06; PX-03695.)

1252. With respect to Kistler Elementary, Dr. Costello discussed a photograph of a classroom that he characterized as "tight" and having "limited board space" on its Smartboard, (Tr. at 10807-08; PX-03715); a photograph depicting a settlement crack outside of the school, which was identified as part of a constant review of the district's buildings "to make sure that the structur[al] integrity is still in place," (Tr. at 10809-10; PX-03729); a photograph depicting a converted office area at Kistler Elementary being used as a room for teachers to work with individual students, (Tr. at 10812-13; PX-03769); and a photograph showing maintenance work needed in the diving well at Kistler Elementary's six-lane natatorium, (Tr. at 10813-14; PX-03798). Dr. Costello also

William Penn School District; Panther Valley School..., Not Reported in Atl....

testified regarding a photograph of a small classroom that has been partitioned into two rooms using portable dry erase boards and shelving:

Tabular or graphical material not displayable at this time.

(PX-03746.) In addition, Dr. Costello testified concerning a photograph showing a closet that was converted into a space for pull-out occupational therapy sessions by adding a small table and two chairs:

Tabular or graphical material not displayable at this time.

(PX-03756.)

1253. Dr. Costello also reviewed a photograph showing “significant water damage” to a former band room at Kistler Elementary caused by a leaking roof in need of repairs, but, as he acknowledged, the room is not currently being used and “we just finished the repair of Kistler’s roof this year,” which the district believes will protect against further damage. (Tr. at 10808; PX-03728.)

1254. Regarding GAR Middle School, Dr. Costello discussed a photo of “extensive water damage” in an unidentified room, (Tr. at 10815-16; PX-03824); a photograph showing plastic sheeting on the roof to prevent water from entering the building, (Tr. at 10816-17; PX-03840); a photograph showing water damage to ceiling tiles in the former library, which is now being used as an individual classroom, (Tr. at 10817-18; PX-03865); and a photograph depicting a set of steps leading to one of GAR’s entrances, showing damage to the façade of the exterior stairwell, (Tr. at 10818-19; PX-03899).

*143 1255. Dr. Costello also briefly discussed a photo of a walkway that students would travel to enter the building at GAR Middle School, but, as he acknowledged, the protective fencing shown in the photograph has changed. (Tr. at 10815; PX-03814.)

1256. Dr. Costello testified about a feasibility study prepared for the district by its outside consultants, which was initially adopted in December 2014 and subsequently revised in June 2015 and May 2016. (PX-03360-0001.) The feasibility study focused almost exclusively on the condition of the district’s former high schools. (Tr. at 10672-63, 10706-07; PX-03360.) Although the feasibility study generally provides an estimate of “renovation” costs of the district’s other school buildings, no detail is provided as to what specific renovations are contemplated or if it includes any items that have already been repaired under the district’s capital improvement plan. (PX-03360-0039.)

1257. The district began a one-to-one Chromebook initiative in 2016-17. (Tr. at 10974.) Prior to the receipt of ESSER funding, the district had one-to-one Chromebooks in place for grades 5-12. (Tr. at 10980.) With the use of ESSER funds, Wilkes-Barre now provides a Chromebook to every student in the district. (Tr. at 10797.) Wilkes-Barre also used ESSER funds to upgrade its digital infrastructure, including routers and projectors. (Tr. at 10795-97.)

1258. During the COVID pandemic, for the balance of the 2019-20 school year, Wilkes-Barre initially provided instruction to students by utilizing Google classroom, a platform on which teachers were able to post instructional content (which might include items such as YouTube videos or PowerPoint presentations). Students having internet capabilities were able to login and follow the materials posted. By the beginning of April 2020, Wilkes-Barre “had begun transferring over to utilizing live but remote instruction, where a couple of times during the week, we asked our teachers to record videos or do specifically live instructions with our students, and we wanted them to be able to follow the schedule that they had during the day.” (Tr. at 10792-93.)

1259. For the 2020-21 school year, Wilkes-Barre provided its families with the option for students to return for in-person instruction or to participate in live (synchronous) virtual instruction. (Tr. at 10794-95.)

1260. Dr. Costello testified that he “think[s] the impact of [f] COVID has been devastating for our students and for all students during this time of uncertainty.” (Tr. at 10870.) When schools first shut down, Dr. Costello indicated it was not about academics, but about survival and that “the amount of learning that has taken place for the majority of our students

William Penn School District; Panther Valley School..., Not Reported in Atl....

has been minimal.” (Tr. at 10871-72.) Dr. Costello further explained “there are so many social and emotional issues that we need to deal with” as a result of COVID, and as many students struggle to adjust to in-person learning. (Tr. at 10869-71.) Wilkes-Barre is having difficulty in providing the resources necessary to support the students who had trouble transitioning back to being in a school setting. (Tr. at 10870-71.)

1261. Beginning in 2019-20, the district set up a committee to evaluate its textbooks and begin the process of replacing various textbook series. (Tr. at 10982-83.) With its ESSER funding, Wilkes-Barre has replaced or is in the process of replacing all its textbooks in all its core subjects. (Tr. at 10798.) Dr. Costello testified that prior to the pandemic, students were not permitted to take textbooks home with them and, for many classes, there were not enough textbooks to accommodate all students. (Tr. at 10798.) He expressed concern that after the ESSER funds run out, the district will not be able to replace the textbooks. (Tr. at 10798.)

*144 1262. Between 2014-15 and 2019-20, Wilkes-Barre's total revenues increased from about \$104.7 million to about \$125.3 million. Over that same time period, its local revenues increased by about \$9.4 million, from approximately \$57.8 million to approximately \$67.2 million (16.3%), while its state revenue increased by about \$10.7 million, from about \$42.5 million to about \$53.2 million (about 25.1%). (LR-05078.) Thus, the percentage of total revenues received from the Commonwealth over this time period increased from 40.53% to 42.46%. (LR-05079.)

1263. In the 2019-20 school year, Wilkes-Barre had revenues per ADM of \$15,727 and expenses per ADM of \$15,463. (PX-02135, Row 326, Column E; PX-01968, Row 326, Column L.)

1264. Between 2014-15 and 2019-20, Wilkes-Barre received an average \$1.3 million annual increase in BEF. (Tr. at 10747-48; PX-04891.) For the 2021-22 school year, Wilkes-Barre received over \$33.8 million in BEF funding, which is about a \$3.5 million increase, or a 11.6% increase, from the prior school year. (Tr. at 11625; LR-01581-00006.)

1265. In the 2021-22 school year, Wilkes-Barre received an additional \$1.6 million as part of Level Up supplemental funding from the state. (Tr. at 10753.)

1266. Wilkes-Barre has received or expects to receive approximately \$46 million in ESSER funding. In addition to purchasing technology, the district also plans to use the ESSER funds for dual enrollment tuition, summer school, HVAC upgrades, roof replacements, additional books, and bringing back some of the teachers it had furloughed when it consolidated its high schools. (Tr. at 10794-98, 10872-74.)

1267. In total, Wilkes-Barre received approximately \$49.1 million in COVID relief funding, including ESSER funds as well as other grants and financial supports. Approximately \$6 million of those funds have to be utilized to remedy learning loss, like providing summer schools, and other remedial instruction. (Tr. at 11062-64; PX-04632.)

1268. By consolidating its three high schools into one, Wilkes-Barre was able to achieve \$4.5 million in savings through the consolidation of programs and furloughing of redundant staff. Wilkes-Barre saved approximately \$600,000 by combining its sports teams. (Tr. at 10731, 11101.)

1269. Wilkes-Barre's single biggest budget expense is salaries and benefits. (Tr. at 10746.) Although Wilkes-Barre had to furlough teachers to reduce expenditures starting in 2016, it brought back some of those furloughed teachers as part-time or temporary teachers as positions otherwise became available due to sabbaticals or other leave. Wilkes-Barre has also used ESSER funds to bring back 13 teachers who were furloughed as part of the high school consolidation. (Tr. at 11105-08.)

1270. Dr. Costello described how, at the start of this lawsuit, the district was “living off a fund balance, and it was depleting at a rapid pace.” (Tr. at 10673.)

1271. At the end of the 2015-16 school year, facing a budget deficit spiral that would leave Wilkes-Barre with a general fund deficit of \$70 million by 2020-21, Wilkes-Barre was forced to make “draconian” cuts to its programming just to keep the doors open. (PX-03410-25; Tr. at 10681-86.) Specifically, Wilkes-Barre furloughed 37 teachers and approximately 2 dozen paraprofessionals. (Tr. at 10686.) It eliminated K-8 art, family consumer science, and industrial arts. (Tr. at 10685-86.) It eliminated all librarian positions and eight deans of students. (Tr. at 10682-86.) As Dr. Costello described, “my job is to provide the resources for students to succeed. And

William Penn School District; Panther Valley School..., Not Reported in Atl....

cutting programs that you know are going to affect children is extremely difficult. ... It's heartbreaking.” (Tr. at 10686-87.)

*145 1272. Because of these cuts, from 2015 to 2020, Wilkes-Barre was able to consistently increase its instructional expenses while also increasing its fund balance. (Tr. at 11041; LR-01106; PX-04628.)

1273. Wilkes-Barre is in a better financial position today than it was when it filed this lawsuit, but Dr. Costello questioned “at what cost?”

We are financially better where we are not running into a deficit, but to get there, the cost was tremendous. The amount of staff that we had to cut, the programs that we've had to cut, and the consolidation of three schools, which came to be a great path to a new high school, but we were unable to maintain — when we had those consolidation, when that consolidation occurred, we were unable to attain [sic] approximately 30 — almost three dozen staff members just this year.

So although our — although our finances on a sheet of paper are absolutely much better than they were when we were facing a \$70 million deficit, there's been a great cost to our district in an already stricken district that was \$33 million underfunded in not being able to provide resources to now cutting our resources even more.

So I would say yes, but at a severe cost.

(Tr. at 11028-29.)

1274. Wilkes-Barre currently has approximately \$20 million in its capital reserve fund. (Tr. at 10692.)

1275. Since the Petition for Review was filed in this case, Wilkes-Barre's unassigned fund balance has consistently increased, going from \$ 917,283 as of June 30, 2015; to \$1.7 million as of June 30, 2016; to \$2.8 million as of June 30, 2017; to \$4.6 million as of June 30, 2018; to \$5.3 million as of June 30, 2019; to \$7.4 million as of June 30, 2020. (Tr. at 11030-40; PX-03401-0016; PX-03402-0016; PX-03403-0016; PX-03404-0018; LR-01106-0008; PX-04628-0009.)

1276. During this time period, Wilkes-Barre's credit rating was upgraded from negative to stable by Moody's Investor Services (Moody's). (Tr. at 11094.)

1277. Even after assuming \$120 million in bond obligations in connection with the construction of the new high school, the amount that Wilkes-Barre spends on its debt service remains below the state average. (Tr. at 10731, 11000; LR-01086-00006.)

1278. Mr. Horvath is a former student at Wilkes-Barre. He attended Kistler Elementary School and went to high school at Meyers. He graduated from Wilkes-Barre in June 2019. (Tr. at 10033, 10037.) Mr. Horvath was in the eighth grade when this action was commenced. (Tr. at 10033.)

1279. Mr. Horvath testified as to what he observed as a student at Meyers, which has since been closed. (Tr. at 10033-37.) He described the building façade chipping off, the roof open with cracks in the ceilings, rodents and roaches, bathrooms in such disrepair that he avoided using them, no working water fountains, and a cafeteria that felt dirty all the time. (Tr. at 10034-36.) He recalled sweat dripping down his hair onto his paper on hot days, because there was no air conditioning in his classroom, and explained that in the winter, the heat was so poorly regulated that some classrooms were 80 degrees. (Tr. at 10036.)

1280. Mr. Horvath testified learning in terrible building conditions made him feel like he was in “survival mode” and it was hard to learn because he was not in a comfortable environment and had all these distractions. (Tr. at 10036-37.) He further testified the conditions “made you feel like you were less” and “like you didn't matter.” (Tr. at 10074-75.) It made him wonder, “why are we being treated like this?” (Tr. at 10075.)

*146 1281. Mr. Horvath testified that some of his textbooks had spans of pages missing from them. (Tr. at 10034.) Mr. Horvath testified that while he attended Wilkes-Barre, the school did not own enough computers for every student in each class to use a device simultaneously. (Tr. at 10045.) As Mr. Horvath also testified, most classrooms at Meyers had Smartboards when he attended high school. (Tr. at 10146.)

1282. Mr. Horvath described himself as an academically average student. He earned a B average in high school. (Tr.

William Penn School District; Panther Valley School..., Not Reported in Atl....

at 10037, 10067.) Mr. Horvath's class rank at the time of graduation was 75 out of 127. (PX-07012-00002.)

1283. Mr. Horvath achieved basic or below basic on all his eighth grade PSSAs and his Keystones Exams. (Tr. at 10060-67; PX-00310; PX-00315; PX-00311; PX-00313.)

1284. In third, fourth, and fifth grade, Mr. Horvath achieved proficient six times, basic one time, and advanced one time on his PSSAs. Mr. Horvath believes that his education at Wilkes-Barre played a part in his achieving proficient and advanced on his elementary school PSSAs. (Tr. at 10140-41; PX-07012-00003.)

1285. As evidenced by emails sent from his teachers to his mother, Mr. Horvath was not always an attentive student while in high school at Wilkes-Barre and did not always take advantage of learning opportunities. (Tr. at 10113-14.) For instance, as Mr. Horvath's 10th Grade Algebra 2 teacher wrote in an email to Mr. Horvath's mother, Tracey Hughes:

I wanted to let you know right after I graded Michael's Algebra 2 quiz that he did not do well He really needs to do his work and pay attention in class. He did not hand in an assignment that was given in class before break. He is always on his phone after I give notes and have them do class work. I leave it up to some students to get their work done and ask questions. He doesn't ask me any questions in class, and I am here almost every day after school if he wants to finish his work with me. I don't know what to do. I've talked to him about his phone before. ... Please let me know what you think we can do. I don't want to see him fall further behind with the end of Quarter 2 in two weeks.

(Tr. at 10113-14; LR-00142.)

1286. Ms. Hughes responded to Mr. Horvath's Algebra 2 teacher by stating that Mr. Horvath is "lazy and girl-crazy" and that it "[s]ounds like time for some consequences." (Tr. at 10115; LR-00142.)

1287. Mr. Horvath could not remember what consequences came as a result of his mother receiving that email from his Algebra 2 teacher. (Tr. at 10116.) As Mr. Horvath testified, he did not disagree with anything his Algebra 2 teacher stated in her email. (Tr. at 10114.)

1288. As shown by an email from his Biology 2 teacher to Ms. Hughes in March of his senior year, and as Mr. Horvath conceded, he did not always turn his work in on time in Biology 2. (Tr. at 10097-99; LR-00139.) He also failed to turn in assignments in other courses. (Tr. at 10098-99.) As Mr. Horvath's Biology 2 teacher stated in an email, and as he agreed, his work "does not really reflect his ability." (Tr. at 10100; LR-00139.)

1289. A subsequent email from Mr. Horvath's Biology 2 teacher to Ms. Hughes stated: "Mike is sitting with a 66% in Biology 2 with only 5 days to go [in the school year.]" The email stated that Mr. Horvath approached the teacher and "asked what he can make up." (Tr. at 10104-05; LR-00140.) As Mr. Horvath conceded, even after the email from his Biology 2 teacher to his mother in March 2019, he continued to fail to complete assignments in that class. (Tr. at 10106.)

*147 1290. As Mr. Horvath's progress report from one month before graduation showed, he had the following absences for each class during his senior year: 10 absences in Chorus; 8 absences in Gym; 6 absences in Homeroom; 2 absences in Biology 2; 27 absences in Media Studies; 22 absences in Probability and Statistics; 33 absences in Modern History; 39 absences in Law in America; and 37 absences in English. (Tr. at 10125-26; LR-00145.)

1291. Mr. Horvath believed that absences listed on his progress report were actually tardies that were mislabeled. He also attributed many of the absences to the following activities that he contends kept him from attending his regular classes: (1) meeting with football recruiters (this occurred 25 or more times); (2) being interviewed for a documentary about Wilkes-Barre's football team (under 10 times); (3) meetings with guidance counselor (approximately 2 or 3 times per

William Penn School District; Panther Valley School..., Not Reported in Atl....

week); and (4) filling out college applications (greater than 20 times). (Tr. at 10127-30.)

1292. Nevertheless, and despite his spotty attendance record, Mr. Horvath claims to have never skipped class as a senior. He said that skipping class would be very difficult for him because he was “the most popular kid in my school pretty much. So, if somebody saw Horvath around, it was like, where are you supposed to be, get to class.” (Tr. at 10131.)

1293. Despite testifying that he met with his guidance counselor two to three times per week during his senior year, Mr. Horvath claimed that his high school needed more guidance counselors. (Tr. at 10131.)

1294. High school students in Wilkes-Barre have “tenth period,” a 45-minute period each day where students can seek out teachers and ask questions. (Tr. at 10149.) As Mr. Horvath testified, most of his teachers were more than willing to offer help, and, in fact, many helped him even though he did not ask for help. (Tr. at 10150.)

1295. Mr. Horvath has no firsthand knowledge about the quality of education that other students received at Wilkes-Barre. For example, because Mr. Horvath did not take any AP courses, he has no knowledge about the quality of education provided in those courses. (Tr. at 10077.)

1296. After high school, during the 2019-20 academic year, Mr. Horvath attended two semesters at Utica College in upstate New York, where he played on the school's football team. (Tr. at 10032-33, 10038-40, 10052.)

1297. Mr. Horvath took an academic placement test before attending Utica College but was not placed in any remedial classes during his first year. (Tr. at 10092-93.)

1298. Despite claiming that he was unprepared for college because of his education at Wilkes-Barre, Mr. Horvath was in good standing during his two semesters at Utica College and earned Bs and Cs in all but one course, but he explained that in the courses he was getting a C, those credits would not transfer to another college. (Tr. at 10078-80.) By contrast, during his time in high school at Wilkes-Barre, Mr. Horvath earned Ds in English 12, Biology II, Chemistry II, Algebra I, and Algebra II. (PX-07012-00001.)

1299. Mr. Horvath claimed that Wilkes-Barre did not properly prepare him to use technology. (Tr. at 10080.) For instance, Mr. Horvath testified that he did not know how to send an email correctly when he attended college. (Tr. at 10043-44.) He also did not have the basic skills necessary to use Microsoft Word, PowerPoint, and online platforms because Wilkes-Barre's single computer skills class and shared computers had provided Mr. Horvath with little opportunity to develop digital literacy. (Tr. at 10043-45.) For example, Mr. Horvath testified that he had technical issues, relating to not having experience with and being comfortable with computers, in one of his required courses at Utica College but, due to the fact that he spoke with his professor, Mr. Horvath was able to earn a C rather than “a[n] F.” (Tr. at 10082.) Mr. Horvath indicated that his technological deficiencies did not affect his other grades at Utica College. (Tr. at 10086-90.)

*148 1300. Further, Mr. Horvath used Snapchat, Twitter, and Instagram by no later than the 10th grade without any formal training on how to use those applications. (Tr. at 10118-19.)

1301. Mr. Horvath contended that one of his main issues at Utica College was that he did not know how to use the library to conduct research. However, he stated that he did not ask college librarians for assistance. (Tr. at 10046.)

1302. Writing a 25-page paper for his college English class is one of the chief hardships Mr. Horvath highlighted in his testimony. (Tr. at 10047.) Mr. Horvath did not know how to research or structure a term paper, because his high school lacked a library, and he had never been given a substantial writing assignment. (Tr. at 10046-48.) Mr. Horvath stated that he had difficulty in his Written Communication II course due to his lack of technical skills because he was unfamiliar and lacked experience using Word, particularly with formatting documents. (Tr. at 10083-85.) However, Mr. Horvath earned a B in both of his college English courses, including the course where he needed to write the 25-page paper, although Mr. Horvath thought the teacher was being “charitable.” (Tr. at 10085; PX-04905.)

1303. Mr. Horvath obtained a C in his “First Year Seminar” course at Utica College. However, he conceded, he did not find the subject matter to be challenging. (Tr. at 10088-89; PX-04905.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1304. Mr. Horvath was able to earn solid grades while at Utica College even though he was also a member of the football team and in a work-study program that took 20 or 25 hours a week. (Tr. at 10157.)

1305. While at Utica College, Mr. Horvath sometimes missed classes, was late to class, and failed to complete all his assignments. (Tr. at 10156.)

1306. Mr. Horvath left Utica College for a variety of reasons. First were his grades. He felt like he could not do the coursework and got very down on himself. He also went through personal problems, and by the second semester, he could not play football anymore due to concussions. (Tr. at 10052.) He also stated that two people who were close to him died while he was at Utica College. (Tr. at 10086.)

1307. After leaving Utica College, Mr. Horvath returned home and attended King's College in Wilkes-Barre for part of one semester. (Tr. at 10052-53.) Mr. Horvath also withdrew from King's College because he felt unprepared. (Tr. at 10058; PX-04527.)

1308. Despite leaving King's College halfway through the semester, he still received a C in his chemistry course, although he indicated that this was from a professor who was "not trying to fail a student." (Tr. at 10095.) As he conceded, he does not really know what his grades would have been like had he finished the semester at King's College. (Tr. at 10096.)

1309. A few of Mr. Horvath's high school classmates are still enrolled at King's College and other universities. (Tr. at 10096.)

1310. Mr. Horvath is currently employed full-time as a behavior trainer at the Graham Academy, a special education school for severely autistic children. He also has a part-time job at Primo Hoagies. (Tr. at 10069-70.)

1311. Mr. Horvath is and has been engaged in many civic activities. He participated in school board meetings when he was a student. (Tr. at 10154.) He has given back to his community by engaging in volunteer work. (Tr. at 10154.) He has voted in elections and is able to engage in political discussions with his friends and family. (Tr. at 10154.)

*149 1312. As Mr. Horvath agrees, he is a productive member of society, and even though he is only 20, he is already a mentor to children. (Tr. at 10154-55.)

8. William Penn

1313. Petitioners presented the testimony of four witnesses from William Penn: its current superintendent, Dr. Eric Becoats; its former superintendent, Jane Harbert; its athletic director, Ralphal Curry; and a kindergarten teacher, Nicole Miller. (Tr. at 6526, 6659, 6852-53, 7417.) The Court credits their testimony. In addition, Student Petitioner, K.M. formerly attended William Penn before graduating from Pennsylvania Leadership Charter School in 2021. (Stip. ¶ 12.) No evidence was presented related to K.M. or her parents, Jamella and Bryant Miller.

1314. William Penn is a school district located in Delaware County, with an ADM of approximately 5,717 students in 2019-20 and a 2020-21 reported enrollment of approximately 4,800 students. (Stip. ¶ 11.)

1315. William Penn's Demographics are as follows:

Tabular or graphical material not displayable at this time.

(PX-04811.)

1316. About 87% of William Penn's student population is classified as Black. (Tr. at 7486; PX-04811.) Approximately 3.5% of the students are classified as White, 4% as Hispanic, and 1% as Asian. (PX-04811.)

1317. In 2017-18, 94.6% of William Penn students were classified as economically disadvantaged, which ranked 8th highest in the Commonwealth. (PX-04811.) As Department data shows, in recent years approximately 5% of William Penn students were classified as ELL students, which is approximately 50th highest out of the Commonwealth's 499 school districts. (PX-04811.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1318. In 2019-20, William Penn had total revenues of \$104.3 million. (LR-05082.) William Penn is a low-wealth, high-need, high-effort, low-spending district.

instructional assistance, individual aides.

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(Tr. at 6869.)

(PX-04894.)

1319. By the Aid Ratio, William Penn is the 66th poorest school district in the Commonwealth. (PX-04894.) Additionally, as of 2019-20, approximately 58% of its students are classified as economically disadvantaged. (PX-04811.)

1323. According to the Special Education Fair Funding Formula, William Penn has the 16th highest need special education student population in the Commonwealth. (PX-04894.)

1320. According to the Fair Funding Formula, William Penn has the 141st highest need general student population in the Commonwealth. (PX-04894.) Putting its need and wealth together, the district's local capacity per weighted student ranks 435th of 499 districts. (PX-04894.)

***150** 1324. By current expenditures per weighted student, William Penn ranks 222nd in the Commonwealth. (PX-04894.) But, by the Level Up formula, which combines both special education and general education need, William Penn is the 63rd lowest spending district in the Commonwealth. (PX-04778, Tab "Level Up Supplement," Column G; Tr. at 11733-35.)

1321. In 2019-20, 18% of William Penn students qualified for special education services. (PX-04811.)

1325. William Penn makes an extraordinary effort to fund its schools: its equalized mills for 2019-20 were 35, ranking highest in Delaware County and second highest in the entire Commonwealth. (PX-04894.) By the Local Effort Capacity Index, it ranked 19th. (PX-04894.)

1322. William Penn has a special education population with significant numbers of "low incidence" students, also identified as Tier 3 students. (Tr. at 6869-70; PX-02168.) As Ms. Harbert explained:

1326. As Ms. Harbert explained, the economic challenges in the area are apparent just by looking around the district because, for example, the houses in which her students live "reflect[] that [the district is] servicing a community with poverty." (Tr. at 6864.)

Tier 3 is your autistic, your students with emotional disturbance and those that have intellectual disabilities. Those students are going to require more support. They also are in classrooms — we have size limits, like the autistic classrooms can only be eight students to one teacher. And so those students required not only smaller classrooms or classroom sizes, not classroom space, and they also required more support through

1327. Ms. Harbert stated that her "biggest concern" in "serving a district of poverty" is "the students who come in with the learning gaps." (Tr. at 6880.) As a result, Ms. Harbert explained, teachers within William Penn have "to try and close that learning gap for the kindergarten students." (Tr. at 6913.) Ms. Harbert estimated that 50% or more of the district's students "come in without the necessary skills to be ready for kindergarten." (Tr. at 7048-49.)

1328. When asked to explain the genesis of students' learning gaps, Ms. Harbert stated that part of the reason for learning gaps could be attributed to parents needing to work multiple jobs, students not experiencing preschool, daycare environments that do not focus on education, or students having disabilities. (Tr. at 7268-69.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1329. Ms. Harbert testified she observed a “hunger for learning” among William Penn students and believes “all students can learn” when provided with the resources, materials, and curriculum they need. (Tr. at 5860, 6858.)

1330. Dr. Becoats testified:

[w]e cannot control how children come to us, but what we can control is what happens within our school buildings. ... And so if a student comes to us and they are behind grade level, we have to address the needs of that student, and we have to have the resources to do that. So regardless of what's happening externally, we have to address the instructional and educational needs of the students that we serve.

(Tr. at 7607-08.)

1331. Despite the hardships that exist in the communities served by William Penn, both Ms. Harbert and Dr. Becoats acknowledged the positives that occur within the school. For instance, the meeting minutes from the Board of Directors meeting on April 24, 2017, reflect that “Ms. Harbert described many highs and lows experienced this month. The low point was the perception that our schools are of poor quality.” The minutes also indicate that Ms. Harbert stated, “we need to tell the REAL William Penn story, not the one perceived by the press or test scores.” (Tr. at 7344-45; LR-01948-00001 (capitalization in original).) When asked at trial what the “REAL William Penn story” is, Ms. Harbert stated, “we bring students in, we care for our students, we give them great instruction, but we can't give them everything they need.” (Tr. at 7346-48.)

1332. Likewise, when discussing why he chose to take the superintendent position at William Penn, Dr. Becoats explained that he “felt as though by looking at some of the data that the school -- that the District was right on the cusp of moving to that next level.” (Tr. at 7420.)

*151 1333. In an introductory letter when he started as superintendent, Dr. Becoats stated that he firmly believed that when the community works together, William Penn students can achieve at high levels both academically and socially. (Tr. at 7515-16.)

1334. Dr. Becoats agreed that high achievement is not just the responsibility of the school system; it takes the involvement of parents and others in the community. (Tr. at 7516.). He also acknowledged that out-of-school factors can impact a student's performance. (Tr. at 7604-05.)

1335. During her tenure as superintendent, Ms. Harbert testified the number of classroom teachers shrank. (Tr. at 6949.) When staff retired or resigned, the district did not replace them due to funding and instead “reshuffl[ed] teachers.” (Tr. at 6950.) In particular, Ms. Harbert recalled one year – 2011 – when there were drastic budget cuts from the state, which required the district to cut staff. (Tr. at 6950.) She described having to make the difficult decision to increase class sizes to 30 students, which permitted the district to eliminate several teachers whom she then had to inform were laid off. (Tr. at 6950-52.)

1336. Mr. Curry also recalled the impact of the funding cuts in 2011 at both the federal level, when certain federal stimulus funding ended, and the state level. As a result of these cuts, the district eliminated the reading specialist position at its high school. (Tr. at 6439-40.)

1337. In 2020-21, William Penn had 522 reported professional and support personnel, comprised of 395 professional personnel (17 administrators and 316 classroom teachers) and 127 full-time support staff. (LR-05080A-00008.)

1338. In William Penn, a rotating school principal is split between two elementary schools. (Tr. at 6947-48.) Ms. Harbert made the decision not to fill a principal vacancy in one of her elementary schools. (Tr. at 6946-48.) Since then, two of the district's elementary schools have been forced to share one principal, who has “two buildings, two staffs to evaluate, [and] two parent nights to run.” (Tr. at 6947.) None of the elementary schools have an assistant principal. (Tr. at 6946.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1339. Custodian services have been outsourced and reduced. (Tr. at 6550-52.)

1340. In the 2020-21 school year, the average classroom teacher at William Penn had 11 years of experience, 10.3 years of which were spent at William Penn. The average teacher salary was \$73,318.14. (LR-05080A-00006.)

1341. As the Supplemental Compensation List for Staff Members in William Penn for the 2018-19 school year indicates, approximately \$518,000 was paid in supplemental compensation to staff who took on roles in extracurricular and other after-school activities. (Tr. at 7142; LR-01487-00007.)

1342. In the 2020-21 school year, 304 out of 397 district professionals had a master's degree or higher. In 2012-13, 279 out of 421 district professionals had a master's degree or higher. (LR-05080A-00007.)

1343. During the 2018-19 and 2020-21 school year, all of the Penn Wood High School courses in English, math, social studies, and science, which are core course required for graduation, were taught by certified teachers. (Tr. at 7059, 7551.)

1344. William Penn does performance evaluations of its teachers based on guidelines provided by the Commonwealth. For the 2018-19 school year, all 326 teachers rated by the district were rated as satisfactory, of which 318 teachers were rated as "proficient" and 8 teachers were rated as "distinguished." Four teachers were not rated. (Tr. at 7577-79; LR-00458, Row 483, Columns D, H, I; LR-05080a-00007.)

*152 1345. As Ms. Harbert stated, William Penn does "a very good job" in making sure that teachers have professional development opportunities. The district "provided many days of professional development, bringing in trainers and experts in different areas to give them knowledge to be better ... at their craft." (Tr. at 6955.)

1346. Over a period of five days in the Fall of 2021, William Penn held "Fall Summit 2021," which, as described by Dr. Becoats, was "the administration's way of providing professional development to all school-based staff members." (Tr. at 7571.) Fall Summit 2021 was provided to all staff members, about 400 individuals, "to make sure that

they were aware of the new curriculum [and] how to utilize it." (Tr. at 7571; LR-01902-00017-00019.)

1347. Ms. Harbert explained that teachers' skills "don't decline." Teachers at William Penn "have those skills and [] know how to implement them." (Tr. at 6956.)

1348. The one William Penn teacher who testified at trial, Ms. Miller, herself graduated from William Penn and attended the same elementary school (Evans) where she teaches. She earned her bachelor's degree from Lincoln University, where she graduated at the top of her class, and her master's degree from St. Joseph's University. She believes that William Penn prepared her well for undergraduate and graduate school programs. (Tr. at 6660, 6707-08.)

1349. Using ESSER dollars, William Penn was able to put an academic counselor in every school, though Dr. Becoats is concerned about continuing to provide support services when those funds are no longer available. (Tr. at 7461-62.) Likewise, William Penn has one instructional facilitator in every one of its schools, although Dr. Becoats indicated that it should really be two facilitators in every building. (Tr. at 7462.)

1350. While Ms. Harbert was superintendent, the district employed four elementary counselors, two middle school counselors, and four high school counselors. (Tr. at 6942-43.) Until the 2021-22 school year, none of the elementary schools had full-time counselors: four counselors split their time between the district's eight elementary schools. (Tr. at 6942-43.) As a result, counselors were always "working in crisis mode" instead of providing "true counseling services." (Tr. at 6943-44.) Although the district has since been able to hire a counselor for every elementary school, the high school student-counselor ratio is still too high, at 320-350 students for every counselor, making it "a challenge to effectively provide all of the[] services" with which the high school's guidance department is tasked. (Tr. at 7547-48.)

1351. While Ms. Harbert was superintendent, the district employed six school psychologists. (Tr. at 6944.) This is a student to psychologist ratio of approximately 830:1. (Tr. at 6944-46.) The vast majority of the psychologists' time is limited to evaluating children for special education services. (Tr. at 6944-46.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1352. While Ms. Harbert was superintendent, the district employed two social workers. (Tr. at 6944.) They supported students in 11 school buildings, making the ratio of students to social workers 2,500:1. (Tr. at 6944, 7461.) Using one-time ESSER dollars, William Penn entered into a short-term contract with a mental health counseling service to provide support to its students, but those supports will only be accessible for the next two years. (Tr. at 7427, 7492-93.)

***153** 1353. William Penn cannot afford to employ any reading or math specialists. (Tr. at 6938, 7460-62.) Because of this, Dr. Becoats testified, “[w]e’re not able to address the gap. The model of student learning that we have indicates or calls for the need to work with students in small groups But we’re unable to implement that with the resources that we have.” (Tr. at 7462-63.)

1354. William Penn employs 5 librarians across its 11 buildings. (Tr. at 6948.)

1355. In 2020-21, William Penn had 9.1 students to every personnel member and 15.1 students per classroom teacher. In 2012-13, the district had 9.4 students per reported personnel and 15.9 students per classroom teacher. (LR-05080A-00009.)

1356. Ms. Miller testified that her typical class has around 25 students on average. (Tr. at 6662.) Ms. Miller has no support staff to help her teach her classroom of five-year-olds. (Tr. at 6669.) Unsurprisingly, Ms. Miller described her “biggest challenge” as “meeting ... the diverse needs of my students with just me in the classroom.” (Tr. at 6662.) Ms. Harbert explained that class sizes of that nature “make[] it very difficult for one teacher, one adult in that classroom. She has 28 children that have — may have 28 different needs in various ways, and so for her to be able to address the needs of those students and then make sure that she is meeting them at their level and giving them what they need academically is very difficult.” (Tr. at 6906-07.)

1357. The differences in class size in different elementary schools within William Penn can be attributed to the number of students that fall within the boundaries of each neighborhood of each school. (Tr. at 7177-79; PX-04647.) Ms. Harbert stressed that the district tries very hard to keep students in their own neighborhoods to encourage parent involvement. (Tr. at 7178.)

1358. William Penn sets the boundaries for each of its elementary schools. (Tr. at 7179.) The student-to-teacher ratio in each elementary school building can vary year to year. (Tr. at 7177.)

1359. In the summer of 2019, William Penn retained a consultant on demographics, enrollment projections, and building utilization scenarios to prepare a report on that topic. (Tr. at 7179.)

1360. The consultants found that half of the William Penn elementary schools were under 90% capacity, with Aldan Elementary at 84%, Bell Elementary at 86%, Park Lane Elementary at 81%, and Walnut Street at 64%. (Tr. at 7186-88.)

1361. As a result of these findings, the consultants recommended that William Penn shift some of the student population to better utilize its buildings. (Tr. at 7188.)

1362. Petitioners introduced some average class size information from the 2019-20 school year into the record related to William Penn's elementary schools. According to the data, across the elementary schools, the average class size in kindergarten ranged from 15 to 29 students, in first grade from 20 to 30 students, in second grade from 21 to 29 students, in third grade from 17 to 26 students, in fourth grade from 21 to 28 students, in fifth grade from 19 to 29 students, and in sixth grade from 10 to 29 students. (PX-04647.)

1363. Similarly, Petitioners introduced some class size information from the 2018-19 school year. According to the data, as of January 17, 2019, the average class sizes across the elementary schools ranged from 22 to 30 students in kindergarten, 22 to 30 students in first grade, 21 to 28 students in second grade, 18 to 29 students in third grade, 21 to 31 students in fourth grade, 15 to 36 students in fifth grade, and 20 to 28 students in sixth grade. (PX-04099-0003.)

***154** 1364. “The vision of the William Penn School District is to nurture and empower all students to become college and/or career ready. [William Penn's] curriculum is one avenue through which this mission of nurturing lifelong learners is realized.” (Tr. at 7561; LR-02329-00001.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1365. As stated on William Penn's website, the district's curriculum is supported by the Department's SAS, "which includes standards assessments, a curriculum framework, best practices for instruction, materials and resources and planned interventions." (Tr. at 7562; LR-02329-00001.)

1366. "To deliver the curriculum, [William Penn] insist[s] upon a dynamic approach to teaching and learning that fosters continuous improvement in order to be responsive to emerging and growing trends in teaching and learning," and that "curriculum is evaluated through the use of an instructional design cycle providing opportunities for administration and teaching staff to review and revise each curricular area and assess its effectiveness on an ongoing basis." (Tr. at 7562-63; LR-02329-00001.)

1367. William Penn has a designated full-time position called the Supervisor of Curriculum Support for Math. The Supervisor of Curriculum Support for Math "lead[s] the instructional design process," "provides professional development [to] all instructional facilitators and teachers," and "support[s] school-based principals [in implementing] the math curriculum." (Tr. at 7562-64; LR-02329-00002.) William Penn likewise has a full-time Supervisor of Curriculum Support for English who performs the same duties but for the ELA curriculum. (Tr. at 7563-64; LR-02329-00002.)

1368. As stated by Penn Wood High School's Course Selection Guide, "[t]he best preparation for college requirements and college admission or career readiness is challenging coursework at the high school level. Colleges look at the strength of classes completed and the students' performance in those classes." (LR-01755-00003 (emphasis in original).) At Penn Wood High School, "[i]n all core subject areas, students [have] the opportunity to enroll in advanced levels or AP classes." In addition, Penn Wood High School offers "[a] variety of electives to enhance the student's academic record." (Tr. at 7544-45; LR-01755-00003.)

1369. However, in the 2018-19 school year, only 23.97% of 12th grade students at Penn Wood High School scored high enough on an AP or IB exam to receive credit. (Tr. at 7375; PX-07010.)

1370. Moreover, Ms. Harbert explained that students cannot always take the more rigorous courses:

our students come in with learning gaps, and so those need to be addressed at a very early age. And you heard what I said, what I think we need to do and what I would have wanted to have done if I had had the funding, put in those preventions and those interventions K to 3.

And I'm not saying to you that that's where their problems stop, and there are going to be students who still need remediation after 3rd grade. But if we don't put all of those things in place, we are not giving the students the opportunity to access those courses because they don't have the skills, the knowledge to do that.

And I believe that if we can correct those problems earlier, more of our students would have been able to participate in those types of courses.

*155 (Tr. at 7024-25.)

1371. In 2015, William Penn earned a place on the College Board's sixth Annual AP District Honor Roll. The "distinction is given to school districts in the U.S. for increasing access to AP coursework while simultaneously maintaining or increasing the number of students who earn scores of 3 or higher on AP Exams." (Tr. at 7087-88; LR-01480-00007.) While Ms. Harbert was superintendent, Penn Wood High School earned a place on the College Board's Gaston Caperton Opportunity Honor Roll. Ms. Harbert's understanding was that the award was "for demonstrating significant and consistent growth in the number of students participating in [AP], taking the SAT exam, and applying to four or more colleges." (Tr. at 7090.)

1372. William Penn was the only school district in Pennsylvania that made both the 2015 Gaston Caperton and the 2015 AP District Honor Roll. (Tr. at 7091.)

1373. The district was proud to receive recognition that it was increasing exposure for its students to AP courses. (Tr. at 7022-23.) But that exposure was significantly limited as a result of the "learning gaps" described by Ms. Harbert: out of the district's 1,200 students in grades 10-12, approximately 130 students or less took AP classes each year. (Tr. at 7023.) Moreover, many of those students failed to score well enough to receive college credit. (PX-07010.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1374. Ms. Harbert explained that William Penn encourages all college-bound students to consider taking a fourth year of math and science. (Tr. at 7069; LR-01502-00005.)

1375. The Penn Wood High School Course Selection Guide for 2018-19 included the following AP courses: AP English Literature and Composition, AP American History, AP Psychology, AP Calculus AB, AP Biology, AP Chemistry, AP Physics Mechanics C, AP Spanish Language, AP French Language, AP Studio Art, AP English Language and Composition, and AP Computer Science. (Tr. at 7060; LR-01502-00008.) William Penn likewise offers classes in STEAM and STEM education. (Tr. at 7021-22.)

1376. William Penn has a gifted program. The gifted program “provides gifted education services to students who are identified as [academically] gifted.” (Tr. at 7061; LR-01502-00008.)

1377. William Penn has a dual enrollment program. This program “provides students with the opportunity to take enrichment courses and earn credit for both high school and college.” (Tr. at 7061-62; LR-01502-00008.) William Penn continues to offer a dual enrollment program. (Tr. at 7548-49; LR-01755-00012.)

1378. Penn Wood High School provides most of its core academic courses at both the honors and college prep level and offers a wide variety of elective courses. Its counselors and teachers “assist in choosing the appropriate courses for each individual student.” (LR-01502-00003.)

1379. Regarding honor and college prep level classes, Ms. Harbert stated that the courses,

give ... some of the skills and knowledge [students] would need if they were planning to go on to college.

Our honors program at the time was for students who knew they were going to college and wanted to advance themselves with more content and -- from a different perspective, literature.

*156 (Tr. at 7067.)

1380. The Penn Wood High School Course Selection Guide for 2018-19 included the following mathematics courses: Pre-

Calculus Honors, Pre-Calculus, Calculus, AP Calculus AB, Statistics, Trigonometry and Advanced Algebra, and Applied Mathematics. (Tr. at 7064-65; LR-01502-00020–00022.)

1381. William Penn's “mathematics curriculum attempts to provide a continuous program of instruction which meets the needs of students in a changing society,” and “course offerings were prepared to provide students with opportunities to acquire the mathematical knowledge, skills, and modes of thought needed for daily life and effective citizenship, as well as to prepare students for post[]secondary education and employment.” (Tr. at 7065; LR-01502-00018.)

1382. The Course Selection Guide listed the following required English courses, offered at both honors and college prep levels: English Composition, Literature, American Literature, and World Literature. (Tr. at 7066-67; LR-01502-00015–00017.)

1383. Penn Wood High School offered the following English elective courses from 2018-19: Drama, SAT verbal prep, and Creative Writing. (Tr. at 7068; LR-01502-00017–00018.)

1384. The Course Selection Guide listed the following required science courses, offered at both honors and college prep levels: Environmental Science, Biology, and Chemistry. (Tr. at 7068-69; LR-01502-00023–00024.)

1385. Penn Wood High School offered the following science elective courses in 2018-19: Physics, AP Physics, Anatomy/Physiology, Forensics, and Robotics. (Tr. at 7070; LR-01502-00023–00025.)

1386. The Course Selection Guide described the Robotics course as “an introductory course in Robotics available for high school students. Students apply mathematical and problem-solving skills in real life situations by designing robots.” (Tr. at 7070-71; LR-01502-00025.)

1387. The Course Selection Guide listed the following required social studies courses: Law & Government, Global History, and American History. (Tr. at 7071; LR-01502-00026.)

1388. The Law & Government class description states that the course “aims to prepare students for the rights,

William Penn School District; Panther Valley School..., Not Reported in Atl....

responsibilities, and privileges of adult citizenship in the United States.” (Tr. at 7071; LR-01502-00026.)

1389. Penn Wood High School offered the following business elective courses from 2018-19: Technology I, Technology II, Desktop Publishing, Macromedia Flash, Macromedia Fireworks, Web Page Design, Accounting I, Business Law, Entrepreneurship, On the Job Training, Cooperative Education, and AP Computer Science and Principles. (Tr. at 7073-74; LR-01502-00033–00035.)

1390. Penn Wood High School offered French and Spanish courses from introductory level through AP, Spanish I through Spanish IV and French I through French IV. (Tr. at 7074; LR-01502-00036–00037.)

1391. All students in William Penn elementary schools have the opportunity to participate in classes in physical education, art, music, and library at least one time per week. (Tr. at 7134.)

1392. Penn Wood High School offered the following art elective courses from 2018-19: Introduction to Drawing, Studio Portfolio I, Studio Portfolio II, AP Studio Art: Drawing, Independent Study in Drawing and Painting, Art Internship: Drawing, Ceramics I, Ceramics II, Independent Study in Ceramics, and Art Internship: Ceramics. (Tr. at 7073; LR-01502-00029–00031.)

*157 1393. As stated by Ms. Harbert, William Penn's students were very successful in the district's art program. (Tr. at 7073.)

1394. William Penn promotes arts, music, and special classes before the high school years. For instance, all fifth and sixth grade students in William Penn have the opportunity to participate in a band and to learn to play an instrument. (Tr. at 7133-34.) The middle school conducts an annual concert. (Tr. at 7133.)

1395. During her time as superintendent of William Penn, Ms. Harbert testified William Penn added several elective courses, including Youth Court, Studio Portfolio III, Film Analysis, and Black Literature. (Tr. at 7076-80; LR-01423-00008-00012.)

1396. In addition to academics, William Penn offers an advanced technology program that is “designed to serve

individuals who desire hands-on training and education for the acquisition or advancement of a technical career.” (Tr. at 7549; LR-01755-00012.) Dr. Becoats explained the advanced technology program is “a way in which student have hands-on experience with an area that aligns with technology. This is something that we would provide or courses are designed to help students in areas like communication, computer application or applied science.” (Tr. at 7549.)

1397. Since he has been superintendent, Dr. Becoats is not aware of any courses that have been eliminated from William Penn's course offerings which were also offered during Ms. Harbert's time as superintendent. (Tr. at 7550-51.)

1398. William Penn offers a wide array of sports including football, soccer, tennis, volleyball, lacrosse, cheerleading, cross country, basketball, wrestling, track and field, indoor track and field, softball, and baseball. (Tr. at 6575-76, 7147; LR-01487.)

1399. William Penn has had winning athletic programs and teams. For example, William Penn's football team was co-champion of its league during the 2019-20 school year. William Penn has won both a state and a district championship in basketball. (Tr. at 6639, 6642-43.)

1400. William Penn's indoor track team competes at meets held at Lehigh University. (Tr. at 6642-43.)

1401. Track and field is often considered the district's best sport. A William Penn graduate is currently the high jump champion of the Atlantic 10 conference. (Tr. at 6643, 6651-52.)

1402. Mr. Curry was a student athlete at William Penn. Mr. Curry attended William Penn from kindergarten through 12th grade and said he had a “great experience” there. (Tr. at 6529, 6531.)

1403. Because of his athletic success in high school, Mr. Curry received a four-year scholarship to play basketball at St. Joseph's University. (Tr. at 6527, 6630-31.) As Mr. Curry acknowledged, his education as a student at William Penn helped him to achieve some of the success that he had in college. (Tr. at 6632.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1404. Mr. Curry believes that, from an academic perspective, William Penn student athletes perform better while their sport is actively in season. Part of the reason for this belief is that Mr. Curry checks students' attendance records and grades during the season. Per the Pennsylvania Interscholastic Athletic Association (PIAA) rules, schools must provide weekly reports on student athletes to make sure they are academically eligible to play. Mr. Curry does not review students' PSSA or Keystone scores. Likewise, he does not provide that information to the PIAA. (Tr. at 6629-30.)

*158 1405. Many of Mr. Curry's students have obtained athletic scholarships to higher education institutions. Last year, 24 former William Penn students participated in athletics at Division I and Division II universities. Other former William Penn students play sports at Division III universities and junior colleges, but the district does not keep track of how many students participate in sports outside of Division I and II. (Tr. at 6638-39.)

1406. However, William Penn's athletic program is limited and hindered by a lack of resources, including facilities, equipment, and transportation. As Mr. Curry described, "we're working from a place that's already initially broken," which forces student athletes to create workarounds, "penny-pinch," and make do with inadequate alternatives in order to train and compete. (Tr. at 6549-51.) A lack of funds also restricts the diversity of sports the district can provide. In the last few years, because of a lack of funds, the district eliminated its entire freshman sports program. (Tr. at 6567-68.) And although offering rowing would help equalize access to athletic scholarships for female athletes, this is not an option given the district's financial constraints. (Tr. at 6578-79.)

1407. Aside from athletics, William Penn offered extracurricular activities in the creative arts, including concert band, a jazz band, a marching band, and a choir. These musical groups participated in a variety of concerts and performances as well as competitions. (Tr. at 7130-34.)

1408. As highlighted in the agenda of the William Penn's Board of School Directors' Business Meeting on March 27, 2017, "[u]nder the direction of art instructors ... Penn Wood High School art students were inducted into the National Art Honor Society." Roughly 21 students were inducted into the Penn Wood Chapter of the National Art Honor Society,

but Ms. Harbert questioned, "how many more could have made it if they had sufficient opportunities?" (Tr. at 7135-36; LR-01482-00003.)

1409. As Ms. Harbert described, there is an annual William Penn art show:

where all the students from every art class was [sic] able to display their work, whether it was ceramics, whether it was drawings, penciled drawings, charcoal, sketches, perspectives, and the teachers worked very hard at that, put many hours in. So the evening that we had the art show, you would go over, you would walk through the school and see some of the most amazing pieces of work that the students had completed in their art classes or in their internships. And some of them would occasionally put them for sale, but not very often, because they kept them for their portfolios.

(Tr. at 7137-38.)

1410. Penn Wood High School put on a play or a musical every year that Ms. Harbert served as superintendent. (Tr. at 7132-33.)

1411. The Penn Wood High School Speech and Debate Team competed in the Pennsylvania High School Speech League's qualifying competition. One of the students achieved a first-place win in the Humorous Interpretation category. Another student placed third in Oral Interpretation of Poetry, and another student placed third in Persuasive Speaking. (Tr. at 7138-40; LR-01482-00005.)

1412. William Penn provides students with the opportunity to participate in National Honor Society. (Tr. at 7140.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1413. Other extracurricular activities offered by William Penn include Newspaper, Science Olympiad, Yearbook, Speech Club, and Mock Trial. (Tr. at 7146-7; LR-01487.)

***159** 1414. William Penn offers various extracurricular activities at its elementary schools, such as fitness club, math club, drama club, debate club, newspaper, Ardmore Boys Run, and Girls on the Run. (Tr. at 7142-44; LR-01487.) They also had “Lego teams.” (Tr. at 7029.)

1415. Notwithstanding, William Penn has struggled to maintain extracurricular activities and has had to cut extracurricular opportunities because of a lack of resources. (Tr. at 7026-27.)

1416. William Penn provides a wide array of Student Services that fit outside the ambit of traditional classroom education. As Dr. Becoats explained, “Student Services are coordinated programs of specialized services to students and families to ensure that all students have an equal opportunity to succeed at school.” Those services include counseling, nursing, providing social workers, providing crisis intervention and crisis management teams, homebound instruction, educational program and career guidance, immunization monitoring, medication dispensing, case management services with linkage to community agency resources, liaisons with Child and Youth Services, monitoring of attendance, safe school initiatives, services to homeless and foster students, and investigation and resolution of residency issues. (Tr. at 7610-11; LR-02331-00001-00002.)

1417. However, Dr. Becoats explained that based on William Penn's level of resources, they “were [un]able to fully support all of [their] students as [they] would like to” with their Student Services. (Tr. at 7612.) For example, Dr. Becoats explained, “where it speaks to home visits, we have one person in our district to support 4,800 students. Where it speaks to tutoring per week in major subject areas, during a course of a student's disability, we do not have full-time tutors in our school district.” (Tr. at 7611-12.)

1418. The Penn Wood High School Guidance Department “provides academic, social and emotional support as well as career counseling to Penn Wood High School students. Each high school class is assigned to a specific guidance counselor for their four years of high school.” (Tr. at 7546; LR-01755-00007.) William Penn also offers a Social

Emotional Learning program at all schools and all grade levels. (Tr. at 7550.) The goal of this program “is to ensure that social and emotional learning is a process we employ through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions.” (LR-01755-00013.)

1419. There are many services provided by the Guidance Department at Penn Wood High School. These include, but are not limited to, individual and group counseling with students, career planning, course selection, orientation for new students, coordination of standardized testing program – namely, SAT and ACT exams – referral and coordination with community agencies, support and referral for special education service. In addition, the Guidance Department has conferences with students, parents, and staff, including class coordination with district social workers and psychologists, orientation, selection and placement for career and technical schools, referral for home-bound services, and a student assistance program. (Tr. at 7546-47; LR-01755-00007.) However, Dr. Becoats explained that “it is a challenge to effectively provide all of these services” with only one counselor per grade, or one counselor per approximately 320 to 350 students. (Tr. at 7547.)

***160** 1420. William Penn has developed, and since expanded, an online cyber school platform that allows school choice for students who wish to attend a virtual school. The cyber program is currently called William Penn Personalized Learning Community, a name that the district adopted so that “families would understand it's not about just offering a program. It is about trying to address the individual student need.” What this allows in practice, for instance, is that students have the opportunity to take certain classes through the Personalized Learning Community that might not otherwise be offered at the brick-and-mortar building. (Tr. at 7574-76.) The district further contracts with a company called Edgenuity to purchase additional content for the Personalized Learning Community. (Tr. at 7576.) The Personalized Learning Community is supported by four teachers and an Executive Director who oversees the technology. (Tr. at 7576.)

1421. Approximately 215 students participate in the Personalized Learning Community. (Tr. at 7576-77.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1422. As part of William Penn curriculum upgrade, the district also implemented Intervention Tools, which are technological resources that provide students with additional supports that go hand-in-hand with the curriculum itself. For instance, with Intervention Tools, the district can assess whether a student is working on grade level and can adjust the material based on the student's current achievement level. These resources are available for Math, English, Science, and Social Studies. (Tr. at 7568-70; LR-01902-00005-00006.)

1423. William Penn was forced to cut its after-school tutoring support during a round of budget cuts. (Tr. at 7026-27.)

1424. The 2021-22 course selection guide for William Penn explains that “[e]very school in the District will employ the use of social and emotional learning strategies on a daily basis with students.” (Tr. at 7550; LR-01755-00013.)

1425. William Penn does not offer pre-K. There is a pre-K provider located within the boundaries of William Penn that is considered a high-quality preschool program. (Tr. at 6881-82.) Only 25%-30% of entering kindergarten students have an opportunity to attend a high-quality preschool program before starting at William Penn. (Tr. at 6883.)

1426. Insufficient access to high quality preschool or pre-K is readily evident in assessments of entering students. According to the results of William Penn's 2019-20 KEI, over half of entering William Penn kindergarten students lacked critical expressive language skills, including the oral language and vocabulary necessary to express needs or carry on a conversation. (Tr. at 6907-08, 6910-11; PX-04150.) Almost half did not have the receptive language skills they needed to understand and respond to directions or requests, and close to 66% did not have the ability to recognize the beginning and ending sounds of words, rhyming words, and other “phonological awareness” skills that are prerequisites to reading. (Tr. at 6911-12; PX-04150.) Veteran kindergarten teacher Ms. Miller testified that some of her students begin kindergarten “literally not being able to hold a pencil,” some “don't recognize all the letters” of the English alphabet, and others “have not learned to recognize numbers to 10 yet.” (Tr. at 6666-67, 6690.)

1427. In addition, the Delaware County IU operates a Head Start program. This program was formerly located in William Penn, but recently moved to a new facility when

the former building closed. Attending the new facility is still an option for pre-K students living in the district. The program is accessible via a 30-minute or more bus ride, which caused many parents to no longer select the program. (Tr. at 6881-83.)

1428. To graduate from Penn Wood High School, William Penn requires students to obtain 22 credits, which must include 4 English credits, 3 math credits, 3 science credits, 3 social studies credits, 1/2 health credit, 1/2 physical education credit, 7 elective credits, a senior project, and pass all Keystone Exams to the extent it is required by the Department. (Tr. at 7058-59; LR-01502-00005-00006.)

*161 1429. The district ranks near the bottom of the Commonwealth in high school graduation rates. (PX-04855-00001.)

1430. Dr. Becoats agreed that there are students who graduate from William Penn who go on to become successful at college and successful at a career. (Tr. at 7525.) As stated in the William Penn “Fast Facts 2021,” a document that was prepared while Dr. Becoats was superintendent, 63% of students at William Penn transition to college while 4% transition to the military and 13% transition to the workforce. (Tr. at 7518-20; LR-02330.)⁶²

1431. During the 2018-19 school year, a total of 124 William Penn graduates indicated an intent to attend a 4-year college: 22 students indicated an intent to attend a 4-year college or university not in Pennsylvania; 71 students indicated an intent to attend a private 4-year college or university in Pennsylvania; and 31 students indicated an intent to attend a state university in Pennsylvania. (Tr. at 7124-25; LR-01183-00004.)

1432. Additionally, during the 2018-19 school year, 101 William Penn graduates indicated an intent to attend a 2-year college. Combined with the 124 students who intended to attend a 4-year college, a total of 225 out of 329 graduates from William Penn School District for 2018-19 intended to enroll in college. (Tr. at 7126; LR-01183-00004.)

1433. However, not all the students who attend William Penn and go on to college obtain a college degree. For example, while William Penn sent 61.21% of its 2013 graduates to

William Penn School District; Panther Valley School..., Not Reported in Atl....

college, just shy of the state average, (PX-04840), only 20.69% of those students actually went on to obtain their college degree in six years, less than half the state average, (PX-04841).

1434. During the 2018-19 school year, William Penn had a total of 329 high school graduates and 43 total dropouts. The most common reason given for dropping out was disliking school. (Tr. at 7121-22; LR-01183-00003–00004.)

1435. Department data shows, in 2018-19, 73.76% of William Penn students regularly attended school. (LR-05080A-00013.)

1436. According to a William Penn internal reading assessment called Success For All, in 2018-19, only 68% of kindergartners were reading or had mastered the skills that were being taught for reading by the end of their kindergarten year. (Tr. at 6918-19; *see also* PX-04644-0001.) Overall, 50% of the district's elementary age students were below grade level in reading. (Tr. at 6919-20; PX-04644-0002.) And on the Department's Classroom Diagnostic Tools, an overwhelming number of students in grades 3-6 were also not proficient in math concepts. (Tr. at 6920-27; *see also* PX-04166.)

1437. Out of almost 2,500 William Penn students who took the state math assessments in 2019, more than 2,100 failed to meet state standards. (PX-04853.)

1438. At trial, William Penn placed a significant amount of emphasis on its students' below-average scores on state assessments to support its position that the district is not offering an adequate education.

*162 1439. By contrast, William Penn's strategic plan states: “We realize that a student's success is measured by much more than a test score[.]” a sentiment with which Dr. Becoats agreed although he also stressed that test scores are used by the state to evaluate the district. (Tr. at 7532; LR-01470-00010.)

1440. Likewise, on June 8, 2017, Ms. Harbert sent a letter to the residents of the district discussing mandated expenses. In the letter, she states “**resources are being pulled away from educating students** Some of the mandates that the state has given school districts within the past 7 years include ... Implementation of New State Standards and State Assessments [and] Increased Graduation Requirements

(Keystones)....” (Tr. at 7193-96; PX-04101 (emphasis in original).)

1441. Despite Ms. Harbert's contention at trial that she believes that PSSA and Keystone scores produce “reliable data that we can use to determine whether students are truly proficient and have learned the skills and the standards that they need to be successful,” William Penn has not implemented the Keystones as a graduation requirement, as the Department has not mandated Keystone passage as a prerequisite to graduate. (Tr. at 7096, 7196; PX-03012.)

1442. As Dr. Becoats agreed, William Penn provides its students with opportunities and opportunities are different from educational outcomes. (Tr. at 7524-25.)

1443. Ms. Miller testified that some of the factors she believes should be used in order to determine how good of a job a school is doing are student growth, teacher observations, and curriculum data. (Tr. at 6712.)

1444. Many William Penn schools have shown positive PVAAS growth scores. For instance, as noted in the 2019-20 Future Ready PA Index, Walnut Street Elementary School had an academic growth score of 100, which exceeded both the statewide average growth score and the statewide growth standard. For mathematics, the average growth score was 87, which exceeded the statewide average growth score of 75.3 and the statewide growth standard of 70. (Tr. at 7580-81; PX-03018-00002.)

1445. As indicated on the 2019-20 PA Future Ready PA Index, Bell Avenue Elementary School had an academic growth score of 100 for ELA and 98 for math/algebra. (Tr. at 7582; PX-03004-00002.)

1446. Penn Wood High School had an academic growth score of 81 for ELA and an academic growth score of 100 for math. (Tr. at 7583; PX-03012-00002.)

1447. In William Penn, the following percentages represent the portion of students in particular sub-groups who met or exceeded the PVAAS growth measure using “across grade level” numbers:

William Penn School District; Panther Valley School..., Not Reported in Atl....

- a. Economically-disadvantaged students: 21 of 36 (58%) student groups met or exceeded the growth measure. (LR-05086A.)
- b. ELL students: 7 of 8 (88%) student groups met or exceeded the growth measure. (LR-05087A.)
- c. Special education students: 15 of 18 (83%) student groups met or exceeded the growth measure. (LR-05088A.)

1448. William Penn publishes a resource guide for families because, as Dr. Becoats explained, “based upon ... diagnostic tools ... some ... students are below and not performing where we would want them to perform educationally, and that’s where we would begin to address their needs.” The resources guide includes topics such as: abuse and neglect, bereavement groups, childcare services, food and clothing resources, housing assistance, and mental health organizations. (Tr. at 7605-08, 7610; LR-02082-00002–00003.)

*163 1449. William Penn has eight elementary schools, which serve students from kindergarten through sixth grade; a middle school for Grades 7 and 8; and a high school divided into two separate campuses, Penn Wood (Cypress Street) for Grade 9 and Penn Wood (Green Avenue) for Grades 10, 11, and 12. The district also has a central administration building. (Stip. at 11; Tr. at 6866.)

1450. William Penn’s facilities were described by district leaders as being “in terrible shape” and “deplorable.” (Tr. at 6990, 7434.) Many of the district’s buildings are aging — the youngest building was built in the 1970s and the oldest is almost 100 years old — with heating and ventilation systems that frequently malfunction and need repair. (Tr. at 6990-92, 7013-14.) Mr. Curry, who graduated from William Penn’s Penn Wood High School in 1990, testified that “[n]ot much has changed” at the high school building in the time since he was a student, and that many of the facility conditions probably go back decades. (Tr. at 6530, 6655.)

1451. Many of William Penn’s buildings suffer from water damage because of roof leaks, masonry disrepair, and other recurring issues that cause water infiltration. Throughout the district, there is water damage to ceilings, walls, plaster, paint, and light fixtures, some of which has

developed into mold. (See Tr. at 6614-16, 6995-96, 6998, 7004-07, 7009-12, 7435-36, 7453-60; PX-04211; PX-04213; PX-04296; PX-04258; PX-04427; PX-04789-0130.)

1452. While Ms. Harbert was shown numerous pictures of the facilities at William Penn on direct examination, she testified that she believes the biggest issue the district has with its facilities are issues related to HVAC. At the time Ms. Harbert left as superintendent, four buildings in the district did not have air conditioning. (Tr. at 7168.) During August, September, and June, when the weather becomes hot, some rooms get over 100 degrees, making it impossible for students to stay in those classrooms and learn. (Tr. at 6992-93.) Other classrooms have windows, but those windows are broken, making it impossible to open them and get air from the outside. (Tr. at 7001.) The district’s ventilation challenges not only result in difficult learning conditions, but in the wake of the pandemic, create a health hazard. (Tr. at 7001-02; PX-04218.) In addition, the Penn Wood Cypress auditorium does not have functioning heat and, as a result, it is very cold. (Tr. at 6997-99; PX-04210; PX-04212.)

1453. The district’s facilities also suffer from electrical challenges. In one classroom, for example, a teacher had to run cables and wires across a doorway in order to access the few electrical outlets available to power the technology his students need. (Tr. at 7000-01; PX-04217.) In another building, exposed wires for internet and telephone are taped together and hung along a stairwell used by students to connect one part of the building to another. (Tr. at 7012-13; PX-04297.)

1454. The district’s facilities are also too small to support all its students and the administration frequently struggles to find adequate instructional spaces to teach its students. Ms. Harbert testified that she had a kindergarten classroom of 28 kids in a former teacher’s lounge. (Tr. at 6992.) In another elementary school, art and music instruction is held in a basement room that has an opening to a sump pump, a large drainage pipe running through it, and thick bundles of wires snaking across the walls. (Tr. at 7015-17; PX-04415; PX-04417.)

*164 Tabular or graphical material
not displayable at this time.

(PX-04416.)

1455. Dr. Becoats explained that William Penn's small rooms made it so difficult to social distance during the pandemic that rather than splitting students into an "A" group and "B" group for hybrid instruction, William Penn "had to actually develop an A day, B day, C day, D day schedule. So, [it was] only able to provide for students one day of in-person instruction[.]" (Tr. at 7436-37.)

1456. Dr. Becoats testified that ARP-ESSER dollars are being used to support facility needs within the district, primarily with the HVAC system. (Tr. at 7629-30.) The district expects ARP-ESSER dollars to total \$16,874,707. (LR-01904.)

1457. In August 2019, William Penn had recently completed a project to put new roofs on several of its buildings. (Tr. at 7170-71.)

1458. Ms. Harbert explained that "most of the buildings" within William Penn are wheelchair accessible with the exception of one elementary school that does not have an elevator. (Tr. at 7172.)

1459. Both campuses of the Penn Wood High School have a gymnasium and an auditorium. (Tr. at 7172.) Penn Wood High School also has a football field, baseball field, and tennis courts, but they are not usable for competition. (Tr. at 6587, 7172-73.) William Penn's football team practices on that field, but plays its football games at a separate site, Kerr Field in Yeadon, which is owned by the district. (Tr. at 6587, 7173.)

1460. The middle school in William Penn has a gym and athletic fields. (Tr. at 7173-74.)

1461. Three William Penn elementary schools have gymnasiums. (Tr. at 7174.)

1462. William Penn's athletic facilities are severely deficient. William Penn doesn't have a "legitimate track; so [it

cannot [host] any home meets." (Tr. at 6581-82, 6587-88; PX-04440.) The track it does have does not meet the standards of the PIAA. (Tr. at 6602-03, 6573.) For the indoor track season, student athletes "practice ... in the hallway[.]" (Tr. at 6587.)

1463. William Penn has worked hard to give their student athletes some of the experiences other, better resourced districts take for granted. For example, the district rented stadium lights to provide their football team with the opportunity to participate in Friday night football. However, their efforts were thwarted by a rainstorm, which flooded out the district's grass football field, making it unplayable. (Tr. at 6585-86, 6598-6601, 7029-37.)

1464. William Penn's bleachers at the football field at the high school are so dilapidated that they have "been condemned." As a result, they "cannot have fans sit in [the] stands" and "cannot play a varsity game ... there," rendering the field unusable for anything except practice. (Tr. at 6586-87.)

1465. William Penn cannot use the long-jump pit at the high school field because it is not long enough or deep enough, and due to drainage issues at the field there is no safe way to keep it active. (Tr. at 6592; *see also* PX-04440.) Without the jump pit, the district resorts to "[c]reative planning" in order to allow its student athletes to practice. (Tr. at 6603.) This includes "simulat[ing]" the motions without equipment as well as arriving at track meets early so that the student athletes can practice on the equipment that other districts have but William Penn does not, which include those for the high jump, pole vault, and shot put. (Tr. at 6603-04.)

*165 1466. To give students an opportunity to use a full weight room, William Penn placed cast-off weights an Ohio school was planning to throw away — which William Penn spray-painted to cover up rust — in a defunct shower room with no air circulation. (Tr. at 6616-19; *see also* PX-04431.) Because of those ventilation issues during COVID, and because of the poor state of the equipment, William Penn was ultimately forced to stop use of that weight room. (Tr. at 6618-19.) On cross-examination, Mr. Curry conceded that Penn Wood High School currently has a newer weight room that existed at the time the Petitioners photographed the shower room. However, Petitioners did not show a picture of the new weight room to Mr. Curry. (Tr. at 6616-20, 6643-45; PX-04431.) As Ms. Harbert explained, the photographer hired

William Penn School District; Panther Valley School..., Not Reported in Atl....

by Petitioners to take pictures of William Penn focused on taking pictures of “things that were detrimental to our students, either in their classrooms or outside of the facilities. So those were the pictures we took.” (Tr. at 7394-95.)

1467. During trial, counsel for Legislative Respondents played nine videos that had been posted to William Penn's website, each of which depicted one of William Penn's school buildings. These videos, which were also admitted into evidence, provided a different view of William Penn's facilities than the photographs taken by Petitioners' photographer for trial purposes and entered into evidence. When Ms. Harbert was shown this video footage, she could not identify anything as being in disrepair. (Tr. at 7332-41; LR-03013; LR-03014; LR-03016; LR-03017; LR-03018; LR-03019; LR-03020; LR-03021; LR-03022.)

1468. To remedy the inadequate facilities, William Penn consulted with KCBA Architects in 2021 to perform a district-wide facilities study to determine the costs of fixing the facilities in the district. (Tr. at 7438-40; PX-04769.) The study found that the estimated cost of improvements for the district would be over \$149.9 million. (PX-04789-0036.) By comparison, the district's total annual expenditures for the 2020 school year were \$101 million. (PX-04651-0019.) Indeed, the expected repairs to air filtration and HVAC alone are expected to cost roughly \$62 million. (Tr. at 7450; PX-04789-0035.)

1469. The district intends to use ESSER funds to remedy some of the needs, but that will only cover about \$16 million of the necessary repairs. (Tr. at 7450-51.)

1470. William Penn used its ESSER funds to purchase Chromebooks for all its students. (Tr. at 7508.) The district considered whether it should buy Apple products but decided against it because Chromebooks are cheaper and “had more adaptability with the curriculum that [William Penn] ... utiliz[ed].” (Tr. at 7509-10.)

1471. Prior to receiving ESSER funds, the available technology in William Penn's elementary schools included “computer carts,” which “house[d] 30 Chromebooks.” At the middle school, there were “computer labs,” which, “at any time” had some computers that were not working. At the high school, there were “computer classrooms,” which were

only accessible to students taking a technology course. (Tr. at 7038-39.)

1472. Ms. Harbert recalled sitting in Zoom meetings with several other superintendents in March 2020, at the start of the pandemic, listening to them talking about their plans to distribute Chromebooks and put virtual learning in place and realizing, “I don't know how I'm going to get a device in every child's hand. I have no idea because I know we don't have enough for 5,000 students.” (Tr. at 7039-40.) By the time Ms. Harbert retired from William Penn, the district still had not placed devices in every student's hand; instead, the district pulled every Chromebook it had and distributed them so that there would be one per family. (Tr. 7040.) This necessitated being “creative” with class scheduling so that all high school courses were taught at one time, middle school courses during another, and elementary classes at a third. (Tr. at 7040-41.)

*166 1473. Dr. Becoats indicated that COVID had a detrimental impact on the district's students, including additional mental health needs and trauma. (Tr. at 7492.) To try to improve the students' outcomes, the district implemented a summer enrichment academy for students in grades kindergarten through 12th, which it offered again in the summer of 2022. The high school students were able to recover credits, and the earlier grades were provided an enrichment camp with low student-to-teacher ratios, such as 12-to-1, which resulted in measurable improvements. (Tr.

at 7492-93.) The district also provided a mental health counselor in each school, which it was able to provide for another school year due to ESSER funding. (Tr. at 7493.) Even with these efforts, Dr. Becoats acknowledged that it was not enough because he knew that the district had not addressed some of the instructional needs that the students still have. (Tr. at 7493.) And, because the ESSER funding was “one-time money,” the district was not investing it in recurring expenses. (Tr. at 7493.)

1474. All the classrooms in William Penn have a classroom set of textbooks. (Tr. at 7175.) However, Ms. Harbert explained there are not enough books to enable a student to take one home, if needed, because there are only enough textbooks for 25-30 students and they must be shared between classes. (Tr. at 7019-20.) According to Ms. Harbert, this “was difficult for teachers to make homework assignments” and they sometimes had to create a study guide for students to

William Penn School District; Panther Valley School..., Not Reported in Atl....

use. (Tr. at 7020.) It also made it impossible for the district to send home textbooks during COVID. (Tr. at 7041.) Another consequence from only having a classroom set of books was significant wear and tear due to multiple students having to share textbooks. (Tr. at 7021.) It also adversely affected parents' ability to be involved and assist with their children's learning since books could not be taken home. (Tr. at 7021.)

1475. At the beginning of the 2019-20 school year, William Penn began the process of purchasing new curricula in ELA, math, and science, including the purchase of new textbooks and online supports at all grade levels. The ELA curriculum was updated through the district's own budget in 2019, while the math and science curricula were updated through ESSER funding in 2020 and 2021. (Tr. at 7566-67; LR-01902-00003-00012.)

1476. In addition to new textbooks, William Penn has implemented a "social-emotional curriculum" at all grade levels. This helps students to understand their experiences outside of school. (Tr. at 7520-21; LR-02330.)

1477. In the 1995-96 school year, William Penn's total revenue was \$42,617,713. In addition, 62.9% of William Penn's revenue (\$26.8 million) came from local sources, and 34.8% (\$14.8 million) came from state sources. (Tr. at 7230-32; LR-00564.) In the 2019-20 school year, William Penn received a nearly equal proportion of its total revenue from state and local sources. At that time, \$51.4 million of William Penn's revenue came from local sources (49.3%) and \$47.9 million came from state sources (45.9%). (Tr. at 7232-34; LR-05082.) Although Ms. Harbert noted that, over that same time period, the district's costs probably tripled, which would have matched the increases in revenue. (Tr. at 7234.)

1478. Between 2014-15 and 2019-20, William Penn's total revenues increased from about \$87.5 million to about \$104.5 million. Over that same time period, its local revenues increased by about \$5.4 million, from approximately \$46 million to approximately \$51.4 million, while its state revenue increased by about \$9.9 million, from about \$38.1 million to about \$48 million. (LR-05081.) In 2019-20, the revenue per ADM was \$18,278.99 while the expenditures per ADM were \$17,921.22. (LR-05081.)

*167 1479. For the 2019-20 school year, William Penn ranked 172 out of 499 districts in current expenditures per ADM at \$17,191.22. (Tr. at 7234-36; PX-04894.) According to a summary exhibit prepared by Petitioners, even after weighing William Penn's expenditures for need, it ranked 222nd in the state in expenditures per ADM. (Tr. at 7236; PX-04894.)

1480. For the 2019-20 school year, William Penn ranked 260th in Local Revenue per ADM at \$8,998.30 and 223rd in State Revenue per ADM at \$8,389.63. (PX-04896.)

1481. As the AFR for the Year Ended June 30, 2020, shows, the total revenues for William Penn in 2019-20 were approximately \$104.2 million. The district's total expenditures for that year were \$100.9 million, resulting in an excess of revenues of \$3,381,008. (Tr. at 7631-32; PX-04651-0019.)

1482. William Penn's projected unassigned fund balance for the 2021-22 school year is \$2.4 million. (Tr. at 7496.) The district's current fund balance was projected to increase by another \$1.3 million after the district's audit is complete, which would give it an unassigned fund balance of approximately \$3.7 million. (Tr. at 7508.)

1483. Ms. Harbert testified that the fund balance was \$7 million when she started at William Penn. (Tr. at 6983.) Yet despite routinely raising taxes and adopting budgets she found insufficient, the district's steady increases in unavoidable costs, such as the need to hire additional special education teachers, "caused our fund balance to deteriorate," and by the time Ms. Harbert retired, the district's fund balance was \$432,121, or about two days of operations. (Tr. 6969-71, 6984-86.)

1484. In 2020-21, the BEF to William Penn was \$23,796,049. In 2021-22, the estimated funding was set to increase to \$25,494,494, which represents an additional \$1,698,445 or 7.1% year-to-year increase in BEF. (Tr. at 7614, 11624; LR-01581-00004.)

1485. Dr. Becoats testified the increase in BEF is the equivalent of 1% of William Penn's operating budget, which helps to meet ongoing increases in recurring costs related to retirement and health insurance and is insufficient to maintain

William Penn School District; Panther Valley School..., Not Reported in Atl....

the district's current programming moving forward. (Tr. at 7497-98.)

1486. Ms. Harbert testified that even though her district received funds through the Fair Funding Formula, it did not solve their problem: “[w]e knew that what we received in increased funding would be overshadowed by our mandated costs. Our mandated costs were going up faster than our revenue.” (Tr. at 6966-67.)

1487. William Penn expects to receive approximately \$27 million total in ESSER relief. In addition to those funds, the district expects to receive a \$2.8 million grant from Delaware County's CARES Act, which it will use to fund technology and infrastructure needs. (Tr. at 7615; LR-01904.) Dr. Becoats testified that William Penn has “applied for grants and will continue to apply for grants ... [to] continue to address the pandemic.” (Tr. at 7426.)

1488. William Penn did not increase taxes for the current year in large part because the community was still experiencing COVID, and the district did not want to increase the burden on its residents. (Tr. at 7641-42.)

9. Philadelphia

1489. Petitioners presented the testimony of Dr. William Hite and Mr. Monson. Dr. Hite is the superintendent of SDP. He has served in that role for 10 years. (Tr. at 7701.) Mr. Monson is SDP's CFO and has served in that role for approximately six years. As SDP's CFO, he is responsible for budgeting, treasury, accounting, payroll, risk management, procurement, and all other financial operations in the district. (Tr. at 10178-79.) The parties submitted the designated deposition of Student Petitioner S.A. The Court credits the testimony of each of these witnesses.

*168 1490. Based on student enrollment, SDP, which encompasses the entire City of Philadelphia, is the largest school district in Pennsylvania by a wide margin and is the 10th largest school district in the United States. (Tr. at 7712; LR-03351-00011.) In the 2019-20 school year, there were 130,617 attending SDP and another 70,000 students attending charter schools. (Tr. at 7711-12; PX-4813.) It is also situated in the “poorest big city in the country,” which Dr. Hite

explained “create[s] multiple barriers that you have to attend to in order to educate young people.” (Tr. at 7707.)

1491. SDP's demographics are as follows:

Tabular or graphical material not displayable at this time.

(PX-04813.)

1492. SDP is a low-wealth, high-need, high-effort, low-spending district:

Tabular or graphical material not displayable at this time.

(PX-04877.)

1493. By the Aid Ratio, SDP is the 68th poorest school district in the Commonwealth. (PX-04877.)

1494. Nearly two-thirds of the students are considered economically disadvantaged, ranking it 47th highest in the state. As recently as 2012-13, that number was 84%. (PX-04813; PX-04815.) Dr. Hite attributed this decrease to the recordkeeping not an increase in student wealth as parents are no longer required to submit forms to have their children qualified for free or reduced-price lunch programs. (Tr. at 7712-14.) Dr. Hite estimates poverty actually increased since he became superintendent 10 years ago. (Tr. at 7714.) Even using the lower poverty rate, SDP district-run schools would enroll approximately 85,000 low-income students. (Tr. at 7713.)

1495. SDP also has a large number of ELL students and enrollment of these students is increasing. Between 2012-13 and 2019-20, the number of ELL students increased from 11,500, or 8% of the SDP student population, to nearly 16,700 students, or approximately 13% of the student body. (Tr. 7716-18; PX-04816.) ELL students in SDP come from more than 150 countries and speak more than 100 languages,

William Penn School District; Panther Valley School..., Not Reported in Atl....

including Spanish, Vietnamese, Khmer, Bengali, and Pashto. (Tr. at 7717-21; PX-04813-00001; PX-04816-00001.)

1496. As of the 2019-20 school year, the percentage of SDP students who were classified as special education students was approximately 2.4% lower than the statewide average. (Tr. at 8043.)

1497. According to the Fair Funding Formula, SDP has the 16th highest need general student population in the Commonwealth. (PX-04877.) Putting its need and wealth together, the district's local capacity per weighted student ranks 457th of 499 districts. (PX-04877.)

1498. By current expenditures per weighted student, SDP ranks 473rd. (PX-04877.) As Mr. Monson explained, “[w]e spend almost the least in the state despite having almost the highest need in the state.” (Tr. 10192-93.) And by the Level Up formula, SDP is the 14th lowest spending district in the Commonwealth. (PX-04778, Tab “Level Up Supplement,” Column G; Tr. at 11733-34.)

1499. Unstable home lives disadvantage children and create educational readiness gaps. (Tr. at 8209.)

1500. In the 2018-19 school year, 75.53% of SDP students regularly attended school. (LR-05043A-00009.) In other words, 24.47% of SDP students were habitually absent.

1501. In SDP, approximately 40% of students attend charter schools and 60% of students attend SDP. The number of SDP students who are enrolled in charter schools alone is nearly four times the size of the next largest school district in Pennsylvania – Pittsburgh Public School District (Pittsburgh). (Tr. at 10319-20; LR-03351-00011.)

1502. SDP has about 80 authorized brick-and-mortar charter schools. Approximately 10% of SDP students attend state-authorized cyber charter schools. (Tr. at 7743-44.)

*169 1503. According to Mr. Monson, the number of charter school students in SDP makes it “a national leader in providing meaningful school choice to parents and students. There are some high-quality charter schools in Philadelphia.” (Tr. at 10320.)

1504. SDP has a Charter School Office, which authorizes and monitors charter schools. (Tr. at 7741-43.)

1505. Unlike the boards of directors for other school districts in Pennsylvania, SDP's school board has no taxing authority. SDP relies on whatever local taxes the City of Philadelphia chooses to impose and collect on its behalf, in addition to state and federal sources of funding. (Tr. at 7755-56, 10189-90.)

1506. SDP's equalized mills for 2019-20 ranked 83rd highest in the Commonwealth. (PX-04877.) By the Local Effort Capacity Index, it ranked 19th. (PX-04877.)

1507. In December 2001, the Secretary declared SDP to be financially distressed and placed the district under the control of a five-member School Reform Commission (SRC). The SRC continued to control SDP until June 2018, when it voted to return the district back to local control. (LR-03351-00012.) “Since the time of its formation, the SRC helped to improve ... the quality of education and the fiscal stability [of SDP].” (LR-03360-00124.)

1508. SDP now has an investment-grade credit rating, which results in significant savings on its bond issues and on its tax and revenue anticipation notes. (Tr. at 10330-31; LR-03351-00013.)

1509. In the 2020-21 school year, SDP reported 10,113 professional personnel, including 415 administrators and 8,438 classroom teachers. Additionally, SDP reported 7,694 full-time support staff and 1,178 part-time support staff. (LR-05043A-00006.) In total, SDP reported having 18,985 full and part-time professional and support personnel.

1510. In the 2018-19 school year, SDP rated 7,946 teachers. Of those teachers, 7,911 of them were rated as satisfactory (99.6%), including 7,019 who were rated proficient and 718 who were rated distinguished. (LR-05043A-00002.)

1511. As of the 2020-21 school year, SDP's average classroom teacher had 13.3 years of overall experience and had been teaching at SDP for an average of 13.3 years. (LR-05043A-00005.)

1512. As of 2018, SDP paid its teachers, on average, a salary of \$70,200. That was about \$3,000 more than the average

William Penn School District; Panther Valley School..., Not Reported in Atl....

teacher salary in Pennsylvania, and \$9,700 more than the average salary for teachers nationally. (LR-03360-00258.)

1513. In the 2020-21 school year, the average SDP teacher received a salary of \$73,138.22. (LR-05043A-00005.)

1514. For the 2021-22 school year, SDP anticipates spending an average of \$75,800 per teacher on salary, plus an equivalent of \$50,200 per teacher on benefits. (PX-03043-0040.)

1515. Under their current contract with the district, SDP's teachers will receive, on average, a 9% raise over the next three years. (Tr. at 10344-45.)

1516. At one point, teachers worked without a contract or any pay or step increases for five years. (Tr. at 7790.)

1517. Dr. Hite testified that in SDP, it is often difficult to fill special education teaching positions because of the district's concentration of high needs students and the challenges involved in supporting these students with too few resources. (Tr. at 7740-41.)

*170 1518. In SDP, over 700 teachers a year must work under emergency certifications, especially for science, math, foreign languages, and special education. (Tr. at 10279-80.)

1519. SDP has to hire approximately 700-1,000 new teachers every year, as many teachers leave the district for better funded districts in the area. (Tr. at 7794, 10278-79.) And, while there are teachers who are committed to working in an urban school district, SDP has to compete with cities like Baltimore, New York, and Trenton, New Jersey, for those teachers. (Tr. at 10279.)

1520. SDP provides each principal with discretionary funds for positions such as reading specialists or math coaches. (Tr. at 7787-88.) However, the district does not have enough funds for all the positions that are ultimately needed at each school, so administrators are forced to make choices based on their needs. (Tr. at 7788.) With the current budget, SDP does not have enough math coaches or reading specialists to assist all those below grade level. (Tr. at 7868.)

1521. As of 2018, SDP had trained each of its teachers for kindergarten through 3rd grade to be expert reading instructors. (Tr. at 7949; LR-03124-00001.)

1522. At Mitchell Elementary, SDP trains its staff on data analysis and specific protocols for improving educational outcomes. The training takes place over 10 days in the summer, and the district pays its staff members, on top of their regular salaries, to attend the training. (Tr. at 7926-28.)

1523. In its budget for the 2021-22 school year, SDP allocated \$7.5 million to professional development. (PX-03074-0023-00024.)

1524. By the start of the 2018-19 school year, SDP had hired additional teachers and filled 99% of all of its teacher vacancies. (LR-03351-00014.)

1525. As of 2018, school nurses and counselors are available in each of SDP's schools. (LR-03124-00002.) However, SDP cannot afford to budget for more than one or two counselors per school. All schools with student enrollment of up to 799 students are only allocated one school counselor; schools with 800 or more students are allocated two school counselors. (Tr. at 7778-79.) These counselors also serve as attendance officers and provide truancy intervention. (Tr. at 7780-82.)

1526. Dr. Hite explained the role of counselors. Counselors in lower grades support students emotionally and socially and support teachers dealing with student behavioral issues. (Tr. at 7780-82.) They also can help students with class enrollment and in navigating the district's high school selection process. (Tr. at 7780-82.) High school counselors assist students with class enrollment, issues that may arise from social or emotional events in students' lives, applying to college and/or employment, and applying for college financial aid. (Tr. at 7780-82.) Counselors at all levels work with students who are experiencing homelessness, are in the foster care system, or have exited the juvenile system, and provide supports for families in crisis. (Tr. at 7781.) Counselors also track student attendance and work with students who are not attending school regularly to come up with strategies to improve their attendance. (Tr. at 7781-82.)

*171 1527. For the 2021-22 school year, SDP identified 38 schools that it will provide with additional funding to hire additional reading specialists. (PX-03043-0027.)

1528. SDP only has certified librarians at six of its schools. Dr. Hite explained that, at the remaining schools, there are

William Penn School District; Panther Valley School..., Not Reported in Atl....

volunteers, typically retired individuals, who volunteer their support. Some schools do not have an operating library. (Tr. at 7951.)

1529. SDP has a Support Team for Education Partnerships (STEP), which is a program through which it provides clinical social workers, case managers, family peer specialists, and school behavioral consultants to schools in need of those services. (Tr. at 7912-14.) Only a small set of SDP schools benefit from the STEP program, which is city-funded. As many as 100 district schools need these resources. but SDP cannot afford to provide them. (Tr. at 7914-15; PX-03043-00013.)

1530. In the 2020-21 school year, SDP had a ratio of 14.7 students per classroom teacher and 6.5 students per reported personnel. By comparison, beforehand, in each year since the 2012-13 school year, SDP's ratio of students to classroom teachers was 15.6 or higher, and its ratio of students to reported personnel was 6.9 or higher. (LR-05043A-00007.)

1531. In its school budget guide for the 2021-22 school year, SDP allocates to schools a general-education teacher budget and does so according to suggested maximum class size. For the current year, SDP's suggested maximum class size is 30 students for kindergarten through 3rd grade, 33 students for 4th through 12th grades, and 24 students for career and technical education schools. (PX-03043-0007.)

1532. SDP has an in-house Office of Research and Evaluation, through which it employs psychometricians, researchers, and evaluators who look at school data and analyze its progress toward its district-wide goals. That office also performs research related to improvement strategies that the district identifies for analysis. (Tr. at 7723-24.)

1533. SDP has instituted special assistance programming and funding for its lowest-performing schools, called the "Acceleration Network," formerly known as the "Turnaround Network." SDP provides the 22 schools in the Acceleration Network with academic coaches in math, ELA, and literature, along with an additional administrator, an additional counselor, a data manager, and a school climate specialist. (Tr. at 7901-02.)

1534. SDP offers students in its high schools 35 rigorous courses and programs, including AP courses, IB diploma

programs, and dual enrollment programs through which students can take college courses and earn college credits while they are still in high school. (Tr. at 7953-54; LR-03124-00001.)

1535. Dr. Hite explained that the availability of AP courses varies widely among schools, and the district cannot provide advanced courses for all interested students. (Tr. at 7887-88; *see also* S.A. Dep. at 23-24.) Even when schools do offer AP courses, some students cannot take them because they have not had access to prerequisite courses at their elementary or middle schools. (Tr. at 7888-89.) For example, if a student's middle school did not offer Algebra, which many SDP district middle schools do not, it is difficult for that student to eventually take AP Calculus in high school, even if it is offered at their particular school. (Tr. at 7888-89.)

*172 1536. In 2015, SDP implemented a strategic vision called "Action Plan 3.0," which outlined various actions that it would take to improve its schools. SDP carried out Action Plan 3.0 until around January 2021, when the district shifted to a new set of goals that its school board adopted. (Tr. at 8091-94.) Under Action Plan 3.0, more than 6,700 students enrolled in AP and dual enrollment courses through which they could earn college credits. (Tr. at 8102; LR-03127.)

1537. SDP has five CTE schools. Additionally, SDP has a subset of high schools where CTE courses are offered. (Tr. at 7890.)

1538. SDP offers programs in more than 40 occupational areas, including:

- a. Business & Finance: accounting and financial services; business administration; and sports marketing and management;
- b. Communications & Graphics: digital medial production; film & video production; and graphic design;
- c. Construction & Manufacturing: architectural drafting; carpentry; computer aided drafting and design; construction technologies; electrical & power transmission installation; electromechanical/mechatronics; electronics technology/ automated systems; engineering technologies; facility & property

William Penn School District; Panther Valley School..., Not Reported in Atl....

maintenance; plumbing technology; precision machine tool technology; welding technology;

- d. Education: Early Childhood Education & Childcare;
- e. Health: dental assisting; emergency medical technician/fire academy; health related records technology; health related technologies; medical/clinical assistant;
- f. Hospitality: baking and pastry arts; culinary arts;
- g. Information Technology: computer supports systems technology; computer systems networking; web design; engineering technologies;
- h. Natural Sciences & Biotechnology: agriculture, food & natural resources; animal sciences; biotechnology; food processing sciences; horticulture; natural resources management; **solar energy**;
- i. Personal Care: barbering; cosmetology; fashion design; and
- j. Transportation: autobody collision repair; automotive technology; logistics, materials & supply chain management.

(Tr. at 8135-36; LR-03144-00001-00005.)

1539. As enrollees in one of the district's CTE programs, students begin their coursework in 10th grade and receive 1,080 hours of specific instruction, involving state-of-the-art equipment, and under the supervision of experienced industry professionals who are trained to teach students in the classroom. (Tr. at 8135; LR-03144-00001.)

1540. SDP provides all its high school students with free access to PSAT and SAT practice tests and individualized college preparatory tools. For example, if an SDP student scores low on a PSAT in a certain subject area, the district enrolls the student in sessions with Kahn Academy for additional instruction in that subject area. (Tr. at 7954-55; LR-03124-00001.)

1541. To date, the U.S. Department of Education has recognized a total of 30 SDP schools as National Blue Ribbon Schools. Schools receive National Blue Ribbon recognition for two reasons: (1) high academic performance over a period of time; and (2) success in closing achievement gaps among

student groups. In 2018, Albert M. Greenfield and William M. Meredith elementary schools were 2 of only 19 schools in Pennsylvania to receive National Blue Ribbon recognition. (Tr. at 7964-65; LR-03124-00002.)

1542. Some SDP schools have academic criteria for admission, *e.g.*, Julia R. Masterman Elementary and High School, both of which have superior scores on standard tests. SDP does not provide increased funding to Masterman to achieve these results. (Tr. at 7945-47.)

*173 1543. The Fox Chase Cancer Center offers select SDP high school students an opportunity to participate in the Teen Research Internship Program (TRIP) Initiative – an intensive 14-week science exploratory program that it offers free of cost. (LR-03141-00001.)

1544. SDP offers students a range of options for school types and settings, including 22 themed magnet schools, virtual schools, and 9 specialty programs, including creative and performing arts, criminal justice, international affairs, human services, and the Peace Academy. (Tr. at 7956-57; LR-03124-00001.)

1545. SDP is the only district in Pennsylvania to offer a “middle college” program. Through this program, students are enrolled in the Community College of Philadelphia and their high schools at the same time so that, after four years, they have earned both a high school diploma and an associate degree in general studies. Students who complete this program generally go on to attend a four-year college or university. (Tr. at 7956-59; LR-03124-00001.)

1546. SDP has approximately 24 community schools. A community school provides students and families with additional services and supports, such as access to a food kitchen or a health and behavioral health facility. (Tr. at 7910-12.)

1547. For the 2021-22 school year, SDP will provide 12 of its high schools with additional funding to establish 9th Grade Academies, which are supposed to “provide a personalized learning environment for students at risk of dropping out who need academic, social, and emotional encouragement from teachers and school staff.” (PX-03043-0027-0028.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1548. SDP operates an in-house cyber school with drop-in centers where students who attend the school can get in-person assistance from certified teachers. (Tr. at 8045-46.)

1549. SDP “provides a comprehensive range of mandated educational services that include general, special, [IB] program, [AP] program and vocational education at the elementary and/or secondary levels, as well as related support and transportation services.” (LR-03351-00012.)

1550. For the 2021-22 school year, SDP has allocated funding to establish full-day kindergarten in all its elementary schools. (PX-03043-0026, -0028.)

1551. As of 2018, all of SDP's kindergarten through 3rd grade classrooms had reading libraries that included books at multiple reading levels to assist students as they learned to read. (Tr. at 7949-50; LR-03124-00001.)

1552. Under Action Plan 3.0, SDP distributed more than one million new books to classrooms for kindergarten through third grade. (Tr. at 8104-05; LR-03128-00001.)

1553. All of SDP's elementary schools offer art and instrumental music education. In 2019, SDP received a Best Communities for Music Education Award from the National Association of Music Merchants Foundation. (Tr. at 7963-64; LR-03124-00002.)

1554. In its budget for the 2021-22 school year, SDP allocated \$8.9 million to itinerant music programming. (PX-03074-0023–0024.) SDP's current and short-term financial position is strong, but “it is important to emphasize that [SDP] has a structural deficit that must be managed before the Federal support ends.” (Tr. at 10355; PX-03074-0018.)

1555. In its budget for the 2021-22 school year, SDP allocated \$9,254,821 to athletics. (PX-03074-0084.)

*174 1556. In its budget for the 2021-22 school year, SDP allocated \$3,308,469 for extracurricular activities and clubs. (PX-03074-0084.)

1557. For the 2021-22 school year, SDP purchased online adaptive learning programs/interventions for schools to support ELA and math interventions. (PX-03043-0029.)

1558. According to a district report, the overall “quality of education in [SDP's] schools was steadily improving each year up to the point of [COVID] pandemic [shutdown]” because the district “instituted reforms that provide for fiscal stability, educational improvement and operational control.” (LR-03351-00012.)

1559. SDP provides free pre-K with unlimited enrollment and, in doing so, serves about 10,000 children. The pre-K program is subsidized by Pre-K Counts funding that the district receives from the Commonwealth. Pennsylvania has designated the program as “high quality.” (Tr. at 7986-87.)

1560. According to SDP, “[m]ore students are graduating and have strong reading skills, more classrooms are led by highly trained educators, more classrooms are healthy and welcoming learning environments and more services are in schools to support students and families.” (LR-03351-00013; Tr. at 10324-25.)

1561. In the 2018-19 school year, SDP increased its graduation rate among district-managed schools by 5% over the previous year. (LR-03351-00014.)

1562. As of the 2018-19 school year, 22% of SDP's 12th-grade students achieved college readiness benchmarks on either the SAT or ACT – an increase of 10% since the 2013-14 school year. (PX-03086-0001.)

1563. In the 2019-20 school year, SDP's four-year cohort graduation rate was 70.12%, its five-year cohort graduation rate was 74.16%, and its six-year cohort graduation rate was 70.19%. (LR-05043A-00003.) With 30% of SDP students not graduating high school, SDP ranks near the bottom of the state. (PX-04855-0001.)

1564. The number of students on track to graduate in four years has increased by 3,000 students. (LR-03351-00014; Tr. at 10328.)

1565. Under Action Plan 3.0, SDP increased its four-year graduation rate by 6%, to 79%. (Tr. at 8100-01; LR-03127.)

1566. In 2018-19, the seventh year of SDP's Action Plan 3.0, SDP doubled the number of its high-performing schools

William Penn School District; Panther Valley School..., Not Reported in Atl....

and reduced its lowest-performing schools by half. (Tr. at 8095-96; LR-03126-00002; LR-03351-00014.)

1567. In 2021, SDP stated that “[t]here were measurable improvements in college and career readiness, early literacy, staffing[,] and fiscal stability over the past four years.” (LR-03351-00013; Tr. at 10323-24.)

1568. Using a scoring metric developed internally for SDP, 75% of the district's schools (156 schools) increased their score on the scoring metric. (LR-03351-00014; Tr. at 10328-29.)

1569. SDP uses internal assessments to measure whether eight-year-olds are reading on grade level. (Tr. at 7883-84.) And for the last six years on record, half were not. (PX-03086.)

1570. According to the ACCESS exam, which the Department requires all districts to administer to ELL students to measure their English language proficiency, less than half of SDP's ELL students in grades 1-5 met their annual growth target, and only 15% of students in grades 6-12 met their growth target for English language development. (Tr. at 7723, 7729-31; PX-03082-0004; PX-03083-0004.)

*175 1571. In the 2018-19 school year, 27% of SDP's 12th-grade students scored a 3 or better on an AP exam, a 4 or better on an IB exam, competent or advanced on a NOCTI exam, or passed a dual enrollment course. By comparison, in the 2013-14 school year, only 9% of the district's 12th-grade students earned these achievements. (Tr. at 7887; PX-03086-0001.)

1572. “In 2018, [SDP] students’ academic progress outpaced the [Pennsylvania] average in every subject and grade [that was] tested.” (Tr. at 7962; LR-03124-00002.)

1573. In 2019, SDP's AGI rating for PSSA ELA was 17.61, which was higher than every other school district in Pennsylvania, and more than 70% higher than the next highest score (Penn Hills Charter School for Entrepreneurship, which scored 10.28). (Tr. at 8205-06; LR-03190-00001.)

1574. In 2019, SDP's AGI rating for PSSA Math was 24.65. Chambersburg Area School District had the next highest rating of this type, at 10.52. (PX-04921.) Between

the 2012-13 and 2015-16 school years, SDP's average growth index score for the math PSSA was 16.48 or less. (PX-03086-0001.)

1575. Yet, almost 50,000 SDP students fail to meet state standards in math, while close to 40,000 SDP students fail to meet state reading standards. (PX-04852; PX-04853.)

1576. In the 2018-19 school year, approximately 7,300 SDP students earned more than 13,400 industry certifications. (LR-03351-00014.)

1577. As of the 2018-19 school year, 40% of SDP students scored proficient or advanced on the science PSSA – the highest percentage going back to the 2012-13 school year. (PX-03086-0001.)

1578. As of the 2018-19 school year, 8% of SDP students scored advanced on the Algebra I Keystone Exam – the highest percentage going back to the 2012-13 school year. (PX- 03086-0001.)

1579. SDP manages more than 300 buildings, including 220 schools, as well as warehouses, garages, and other properties, some of which are vacant. (Tr. at 10182.) Forty-two of the facilities, which are currently in use, are more than 100 years old. (Tr. at 7797.)

1580. According to a facilities assessment commissioned by the district, as of January 2017 there were \$4.5 billion in deferred maintenance costs. (Tr. at 7832-36.) This included 85 facilities that needed major renovations and 21 more facilities — of which 13 were schools — that were in such disrepair that they needed to be closed or replaced. (Tr. at 7832-36.) Of these 13 schools, only 1 has since been closed and 2 others are scheduled to be replaced but are currently still operating. (Tr. at 7832-36.) The two oldest schools in this group were built in 1898. (PX-03055; Tr. at 7832-36.)

1581. It is estimated that the cost today of bringing all district buildings up to code and modernizing spaces is close to \$4.9 billion. (Tr. at 10238.) On top of that amount, the district's annual required repair costs are estimated to be approximately \$333 million, but SDP can only afford to spend less than a third of that annual expense. (Tr. at 10234.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1582. Mr. Monson explained that this has resulted in difficult decisions to prioritize classroom learning over building repairs:

If I don't do that roof, it means I can afford to keep teachers in the school or certain resources or purchase more computers or whatever the — it — you're constantly making choices and trying to get one more year out of that roof, trying to get one more year out of whatever. Eventually that deferred maintenance it [sic] going to catch up to you, especially across a broad array of systems.

*176 (Tr. at 10228-29.)

1583. Leaks and water intrusion are a common condition among the district's aging buildings. A 2019 site visit to Randolph Technical High School showed that a leak in the roof had caused water to pool on the floor of a student lab space that housed electrical equipment and welding and vending machine repair equipment, rendering the space unusable. (Tr. at 7808-13; PX-00774; PX-00776; PX-00777.)

1584. The poor conditions in SDP's buildings can also pose serious health risks to students and staff and serious environmental risks to the community at large, but the district does not have sufficient environmental staff to address them. (Tr. at 7816, 10226-27.) For example, a 2018 site visit to Roosevelt School revealed that water intrusion from the windows had caused lead paint to peel off the walls, plaster to fall, and the floor to rust. (Tr. at 7800-02, 7804; PX-00770; PX-00772.)

1585. Although the Roosevelt School was remediated, there are many other district schools, approximately 75%-80%, or over 100 schools, that require lead paint remediation. (Tr. at 7802.)

1586. Mold is also a serious issue in a number of SDP schools that has required and continues to require remediation. (Tr. at 7806-08.)

1587. Student Petitioner S.A. described the facilities at SDP's Mastbaum. He explained that there was mold in the lunchroom, leaks in the roof, and the paint was old and chipping off the walls. (S.A. Dep. at 28-29.) The water in the water fountains was "super white" and not drinkable. (S.A. Dep. at 30.) In cold months, the heater blew out cold air. (S.A. Dep. at 70.) In warmer months, not all classes had air conditioning, triggering S.A.'s *asthma*, giving him chest pains, and making it hard to breathe. (S.A. Dep. at 29, 69-70.)

1588. Given their age, it is likely 70% or more of SDP's buildings contain asbestos. (Tr. at 7814-15.) In the last three years alone, the district has had to close 12 schools due to concerns about asbestos. (Tr. at 7814-15.) SDP also frequently has to close portions of schools when asbestos-containing material is identified, to investigate and determine how to remove, abate, or repair the material. (Tr. at 7815.)

1589. To help address these issues, SDP develops Capital Improvement Plans in five-year increments but updates each plan yearly to account for new maintenance requests or work orders. (Tr. at 7999.)

1590. SDP is currently undertaking more than \$224 million worth of work on construction and repair projects in its schools. (Tr. at 7998.)

1591. As of the 2018-19 school year, SDP had invested \$50 million in early literacy classroom modernization. (Tr. at 8115; LR-03130-00002.)

1592. As of the 2018-19 school year, SDP had invested \$8 million to repaint more than 824,000 square feet of space. (Tr. at 8115; LR-03130-00002.)

1593. During pandemic-related school closures, SDP completed approximately \$250 million in facility improvements, including increasing the number of its lead-safe schools, removing approximately five acres of asbestos, and modernizing early literacy classrooms. (Tr. at 10354; PX-03074-0017.)

*177 1594. As of the 2018-19 school year, SDP had invested \$45 million in classroom technology and delivered more than 20,000 Chromebooks to schools. (Tr. at 8114; LR-03130-00002.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1595. Since the COVID pandemic, SDP has purchased and distributed Chromebooks to each of its students. At the start of the pandemic, the district initially ordered 40,000 Chromebooks, using donations received from philanthropic organizations in Philadelphia, which were distributed, along with the existing Chromebooks it had on hand, to students, a process that took about two months. (Tr. at 7857-58.) Additional orders followed, and SDP eventually purchased about 100,000 Chromebooks for its students. (Tr. at 7858.) It has also established three drop-in locations where students can bring their Chromebooks that are in need of repair or replacement, which Dr. Hite described as insufficient. (Tr. at 7857-59, 8054-55.)

1596. Through a joint venture between SDP, the City of Philadelphia, charter schools in the city, and some private funders, SDP has provided over 7,000 home internet connections to students. (Tr. at 10352; PX-03074-0017.) The district worked with Philadelphia and other organizations to provide connectivity to its students for two years. (Tr. at 7857-58.) Prior to the COVID pandemic school closures, SDP students who met certain criteria could obtain free internet service. (Tr. at 10353-54.)

1597. Dr. Hite testified that upon learning of the closure of school buildings on March 13, 2020, SDP began with establishing food distribution sites, as many of its students rely on the district for breakfast and lunch. (Tr. at 7855-56.) The district then constructed paper packets for all of its grade levels, which could be picked up at the food distribution sites, because not all of its students had access to either technology or broadband internet. (Tr. at 7856.)

1598. Dr. Hite testified that two groups were particularly challenged by remote learning: ELL students, who could not understand how to use the technologies in English; and students who had special education needs, many of whose educational needs could not be met remotely. (Tr. at 7860-61.) SDP's youngest learners, those in kindergarten through 2nd grade, also were significantly impacted, and SDP saw a drop in their assessment scores from the year prior to the pandemic. (Tr. at 7861, 7864-65.)

1599. Dr. Hite testified that SDP was forced to remain completely virtual for an entire year before any of its students could return in-person because of concerns about ventilation

and adequate access to PPE. (Tr. 7861-62.) SDP remained remote until mid-March 2021, when one-third of the students from 3rd to 8th grade returned two days a week and 9th graders returned two days a week. (Tr. at 7862-63.) SDP installed air purification devices in every learning space, office, and common space, as well as ensured that touchless hydration stations were operable and PPE was available. (Tr. at 7863-64.)

1600. Dr. Hite described the challenges of young people in SDP who “left school as 7th [] graders and did not return to an in-person experience until they were in the 9th grade in a totally different facility.” (Tr. at 7865.) Dr. Hite personally observed students, particularly younger students, experience anxiety, depression, and feelings of isolation, although high school students also suffered the same. (Tr. at 7865.)

*178 1601. SDP has made progress in educating its students since it was declared in financial distress by the Commonwealth in 2001. (LR-03360-00124.)

1602. Since emerging from the SRC's control in 2018, the SDP has maintained and enhanced its financial stability, while further improving its academic programs. SDP's improvements since 2018 have been based on sound financial management and improved administration. (LR-03360-00049.)

1603. In the 2019-20 school year, SDP's revenue per ADM was \$19,442.89. (PX-02135, Tab “2019-20 Rev per ADM,” Row 400.)

1604. For the 2021-22 school year, SDP's budgeted revenues are \$4,020,800,000. Its budgeted expenditures are \$3,911,143,000. The district projects to have a \$169,907,000 ending fund balance. In addition, the district projects to have an operating surplus of \$108,836,000 during the current year. (PX-03074-0018.)

1605. As part of its current budget, SDP projected that its basic education subsidy from the Commonwealth would remain flat from the 2020-21 fiscal year to the 2021-22 fiscal year. Mr. Monson acknowledges that SDP received additional BEF than projected “[b]ecause the legislature and the Governor added funds.” (Tr. at 10358-59; PX-03074-0022.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1606. As part of its budget, SDP projected to receive approximately \$1,096,000,000 in BEF from the Commonwealth. (LR-03354-00007.) The estimated amount of BEF funding projected by the state was \$1,224,128,865, approximately \$128 million more than what SDP projected to receive in BEF in its budget. (Tr. at 10363-64; PX-04778, Tab “2021-22 est BEF June 2021,” Row 400.)

1607. SDP projected to receive \$154 million in special education funding. However, according to the estimated special education funding documents from the Department, SDP is projected to receive \$162,259,354 in special education funding. (LR-03354-00007; PX-04779, Tab “2021-22 est SEF June 2021,” Row 400.) Mr. Monson explained the district prepares its budget “based on what [it] know[s] at the time.” (Tr. at 10365.)

1608. In total, accounting for only BEF and special education funding, SDP is estimated to receive about an additional \$136.4 million from the Commonwealth during the 2021-22 fiscal year than the district initially expected. (PX-04788, Tab “2021-22 est BEF June 2021,” Row 400; PX-04779, Tab “2021-22 est SEF June 2021,” Row 400.)

1609. In the 2021-22 budget, the General Assembly established that SDP would receive an additional \$39 million to top its baseline, “hold harmless” amount of BEF. (Tr. at 8196.) This increased baseline will be used in future allocations under Act 35.

1610. In its budget for the 2021-22 school year, SDP allocated \$15 million for social and emotional supports in its schools. (PX-03074-0023.)

1611. In its budget for 2021-22 school year, SDP increased its discretionary funding by more than \$9 million across all its schools. Depending on their classification by SDP, schools are allocated either \$175 or \$275 per student. Schools can use the discretionary funds for staff, supplies, textbooks, computers, extracurricular activities, and parent outreach, and other purposes. (PX-03043-0005, 0007.)

1612. District-wide, in its budget for the 2021-22 school year, SDP allocated \$525,071,609 for non-instructional expenditures, which is an increase of nearly 5% over the prior year. (PX-03074-0120.)

*179 1613. In its budget for the 2021-22 school year, SDP allocated \$1,445,830 to salaries for research and evaluation positions, such as data analysts, researchers, and statisticians. (PX-03074-0294.)

1614. For fiscal year 2020, SDP maintained a positive budgetary operating fund balance of \$172.8 million. SDP attributed this occurrence to “increased State and Local funding, a strong financial focus resulting in more favorable financing terms and smarter fiscal management[.]” (Tr. at 10332; LR-03351-00015.)

1615. During Dr. Hite's tenure as superintendent, SDP has saved approximately \$15 million annually from having closed underutilized schools. (Tr. at 7983-84.) However, Dr. Hite clarified that some of “those savings are one-time savings, with the exception of the positions that are eliminated ... [b]ecause most of the teaching positions would follow [the] children to whatever schools those children would attend.” (Tr. at 7984.)

1616. From the 2011-12 to the 2018-19 school year, SDP increased the amount of its unassigned fund balance from -\$147,615,522 to \$80,443,233, a positive improvement of \$228,058,755. (Tr. at 10312-13; PX-01823, Tab “2011-12,” Row 400, Column G, Tab “2018-19,” Row 400, Column G.)

1617. In 2012-13, the district took drastic actions to make ends meet — the district closed 24 schools, laid off 20% of the workforce (nearly 4,000 positions), and eliminated numerous programs. (Tr. at 7757-58.) The positions that were eliminated were critical to the administration of schools and the district itself: art and music teachers, assistant principals, facilities workers, custodians, cafeteria workers, secretaries, guidance counselors, and whole divisions in the central district administration. (Tr. at 7758-59.) The district has not been able to return to the levels of staffing they had prior to these cuts, and the needs continue to compound. (Tr. at 7760-61.)

1618. While some districts turned to fund balances during budget impasses, Mr. Monson testified that SDP did not have a fund balance during one budget impasse and was forced to “borrow [] several hundred million dollars just to maintain operations.” (Tr. at 10185.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1619. For the 2019-20 fiscal year, SDP maintained a budgetary operating fund balance of \$172.8 million. (LR-03351-00015; Tr. at 10332.) Mr. Monson testified that during the initial phases of the COVID pandemic, “we used up our fund balance to keep us going.” (Tr. at 10201-02.)

1620. Since 2012, SDP has experienced multiple credit upgrades, allowing it to borrow money at lower interest rates. As of June 2020, for the first time since 1977, Moody's upgraded SDP to an “investment grade” credit rating. (Tr. at 10330-31; LR-03351-00013.) Moody's described SDP's strengths as:

stable charter school enrollment for the past three years; structural balance and operating surpluses for the last three years; experienced management that brings control of finances and detailed management of daily school operations; and the City's willingness to support the School District with permanent new dedicated tax revenue and an increased governance link between the City and the District.

(Tr. at 10342; LR-03360-00049.)

1621. In 2019, Fitch Ratings also upgraded SDP's credit rating to BB+ and maintained the district's outlook as stable. (Tr. at 10333-34; LR-03351-00015.)

*180 1622. Mr. Monson described the impact of charter schools on the district. Because of the way charter school tuition is calculated for special education students, sometimes that rate is inflated. (Tr. at 10260-66.)

1623. In addition, Mr. Monson explained that, unlike the Special Education Funding Formula that determines school districts' special education subsidies, the special education charter tuition calculation does not consider the different levels of student need a charter school actually has, or the varying costs necessary to serve, for example, a student with speech language needs versus a student with multiple severe disabilities. (Tr. at 10261-63.) In other words, districts

must pay charter schools the same special education tuition rate whether a child has low needs or high needs. (Tr. at 10262.) Moreover, charter schools do not need to refund school districts to the extent they receive tuition greater than the special education services they provide. (Tr. at 10263.)

1624. Mr. Monson also explained that there are “stranded costs” that must be taken into account when a student leaves the district for a charter school. Mr. Monson gave an example of a 4th grade classroom in which 2 of 28 students go to a charter school. As he pointed out, “[t]here are still 26 students behind in that classroom, which means they still have a teacher, there's still a counselor ... assistant principal, ... building support those expenses don't go away[.]” (Tr. at 10259-60.) According to Mr. Monson, SDP loses approximately \$4,000 in stranded costs per student. (Tr. at 10260.)

1625. SDP expects to receive approximately \$1.8 billion in emergency federal ESSER funding. (Tr. at 10202.)

1626. SDP is using this federal funding to hire assistant principals, school psychologists, social workers, reading intervention specialists, English language teachers, special education teachers, and general classroom teachers. (Tr. at 10204-05.)

1627. Using ESSER funds, SDP doubled the amounts of its reimbursements for teacher-purchased classroom materials. (Tr. at 10355-56.)

1628. At the time of his deposition, S.A. was a senior in the SDP. Upon graduation, S.A. intended to attend a culinary arts program at a trade school. S.A. had no reason to think he would not graduate from high school on time. (S.A. Dep. at 15.)

1629. S.A. testified that he needs good reading, writing, and math skills to be a chef, which he did not believe SDP provided him. (S.A. Dep. at 72-73.)

1630. Since age 13, S.A. has desired a career as a chef or sous chef. He applied to and was accepted at Mastbaum, a vocational high school within the SDP, to utilize its culinary program. (S.A. Dep. at 8-10, 12, 17.) S.A. liked school, particularly his culinary program at Mastbaum. (S.A. Dep. at

William Penn School District; Panther Valley School..., Not Reported in Atl....

9.) Likewise, he liked some, but not all, of his teachers. (S.A. Dep. at 35.)

1631. In Mastbaum's culinary program, S.A. learned all of the various operations within a restaurant, including basic knife skills, how to work stoves and dishwashers, and how to clean and bake. (S.A. Dep. at 10-11.)

1632. S.A. had an opportunity to study culinary arts for three years from the 2017-18 school year through the 2019-20 school year. (PX-04512-0033–0038 (redacted).)

***181** 1633. As a student in SDP, S.A. took core courses, such as English, algebra, geometry, U.S. history, world history, African American history, biology, chemistry, and environmental science, as well as coursework in health and physical education, college and career readiness, music, and Spanish. (S.A. Dep. at 13-15; PX-04512-0033–0041 (redacted).)

1634. Yet, S.A. did not believe he received a good education at Mastbaum because the school did not have the necessary resources to educate him. (S.A. Dep. at 44-46.)

1635. S.A. described being in large classes of 30 students that made it “hard to learn[,]” and not being able to get enough help from his teachers, who often ran out of time to cover the lesson each day. (S.A. Dep. at 36-37, 45-46, 62, 68-69.) Because S.A. could not bring his textbooks home, he would resort to Google to try to understand the material. (S.A. Dep. at 69.)

1636. S.A. struggled in some of his academic classes but received various remedial supports. For instance, he was placed in smaller English and math proficiency classes comprised of about 10 students from ninth grade through the middle of eleventh grade, when he was taken out of the class. S.A. was not sure why he was dropped from those classes and intended to request to be put back in them in twelfth grade. (S.A. Dep. at 32-33, 67-68, 76.) S.A. found the smaller remedial classes more helpful because the instruction did not feel “rushed” and teachers could provide more one-on-one time with the material. (S.A. Dep. at 67-68.)

1637. S.A. also described that after-school tutoring at his high school was limited and they were not offering the courses he needed help with. (S.A. Dep. at 24-25.)

1638. S.A. also took summer school classes in geometry and algebra. (S.A. Dep. at 16-17, 60-61.) He testified that he was able to meet with teachers during lunch or after school to receive additional help. However, S.A. explained that this was not always helpful because there would be other students who were “play[ing]” and “distracting,” and, so the teachers “would send everybody home.” (S.A. Dep. at 65-67.)

1639. S.A. received regular speech and language support during the 2007-08 school year through the 2012-13 school year. (PX-04512-0067 (redacted).)

1640. S.A. participated in the CSAP Support Program during the 2008-09 and 2011-12 school years. (PX-04512-0067 (redacted).)

1641. S.A. received intervention support in the form of guided reading support and small group instruction in the 2006-07 and 2008-09 school years. (PX-04512-0067 (redacted).)

1642. During high school, S.A. enrolled in math and English intervention and proficiency development courses. (PX-04512-0033–0041 (redacted).)

1643. S.A. testified in his deposition that pre-pandemic at his SDP high school, there were only a few carts of computers to share between classes. (S.A. Dep. at 18-19, 70-71.) There was no computer lab, no class for typing skills, and S.A. never learned how to use Excel. (S.A. Dep. at 19, 70-71.) There also were not Smartboards in every classroom. (S.A. Dep. at 19.)

1644. S.A. frequently was absent or tardy from school. S.A.'s absences and tardiness included the following:

- a. 12th grade (2019-20): absent 12 days and tardy 39 days;
- b. 11th grade (2018-19): absent 15 days and tardy 105 days;
- c. 10th grade (2017-18): absent 10 days and tardy 30 days;
- d. 9th grade (2016-17): absent 29 days and tardy 23 days;
- *182** e. 8th grade (2015-16): absent 10.5 days;
- f. 7th grade (2014-15): absent three days and tardy two days;
- g. 6th grade (2013-14): absent 22 days;

William Penn School District; Panther Valley School..., Not Reported in Atl....

- h. 5th grade (2012-13): absent eight days;
- i. 4th grade (2011-12): absent five days and tardy four days;
- j. 3rd grade (2010-11): absent four days and tardy one day;
- k. 2nd grade (2009-10): absent 9 days and tardy 18 days;
- l. 1st grade (2008-09): absent 17 days and tardy 29 days;
- m. Kindergarten (2007-08): tardy 20 days;
- n. Kindergarten (2006-07): absent 7 days and tardy 19 days.

(PX-04512-0033 (redacted).)

1645. Combining all academic years, S.A. was absent a total of 151.5 days and was tardy a total of 290 days. (PX-04512-0033 (redacted).)

1646. While at Mastbaum, S.A. got a summer job at Sesame Place where he has been able to practice his cooking. (S.A. Dep. at 16.) S.A. learned about the summer job from the principal at Mastbaum. (S.A. Dep. at 17-18.)

1647. The culinary arts program at Mastbaum prepared S.A. to succeed at his job at Sesame Place, and to ultimately go to a culinary trade school and to have a job as a sous chef. (S.A. Dep. at 16, 56-57.)

1648. S.A. is an involved citizen, spending some of his free time away from high school volunteering by feeding the homeless. (S.A. Dep. at 57-58.) He believes that when he has finished school, he will continue to volunteer. (S.A. Dep. at 59.)

1649. S.A. graduated from the SDP, and at the time of his graduation was registered to attend Walnut Hill College. (Sheila Armstrong's Responses and Objections to President Pro Tempore's First Set of Requests for Admission (Redacted version) at RFA No. 1.) While S.A. will be attending a trade school, S.A. felt he was not adequately prepared for the reading and math requirements at college. (S.A. Dep. Tr. at 15, 72-73; Armstrong Responses and Objections to President Pro Tempore's First Set of Requests for Admissions (July 7, 2020), Request No. 3.)

1650. At the time of his deposition, S.A. stated that he believes he will be able to become a sous chef and earn a living doing so. (S.A. Dep. at 58.)

10. Otto-Eldred

1651. Otto-Eldred School District (Otto-Eldred) is one of three non-Petitioner School Districts whose representatives testified for Petitioners. (Tr. at 6275.) Petitioners presented the testimony of Matthew Splain, the Superintendent of Otto-Eldred and the Board President of PARSS. Mr. Splain credibly testified as follows.

1652. In the 2019-20 school year, Otto-Eldred had just under 600 students, 55.11% of which were economically-disadvantaged students, and 19.26% of which required special education services. (Tr. at 6127; PX-04814.)

1653. Otto-Eldred consistently has problems attracting and retaining quality teachers, which Mr. Splain attributed to the inability to offer competitive wages. (Tr. at 6188-89.) As a result of its inability to hire qualified teachers, Otto-Eldred has had to eliminate entire programs, such as driver's education and family and consumer science, and reduce its industrial arts program. (Tr. at 6193.) It also eliminated the in-house foreign language program but offers it to students online. (Tr. at 6191.)

***183** 1654. Otto-Eldred has not had any reading specialists in the district "in a long time." (Tr. at 6190.)

1655. Otto-Eldred also lacks any assistant principals, who could focus on discipline and "tak[e] some of the responsibilities away from the building principal to be an effective instructional leader and focus on improvements in [the] classrooms." (Tr. at 6195-96.)

1656. Otto-Eldred also has an ELA interventionist and a math interventionist. Otto-Eldred's math interventionist splits time between the interventionist position and teaching as a STEM instructor in the district. All elementary school students take a course in STEM on a rotating basis. (Tr. at 6335-37.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1657. Otto-Eldred also hired a social worker and two behavior specialists using ESSER funds. The district now has five behavior specialists in total. (Tr. at 6334-35.)

1658. Mr. Splain agreed that one-time funding, such as ESSER funds, should not be used on “ongoing costs because you’re creating a bigger deficit down the road.” (Tr. at 6246.) He recalled his first year as superintendent when “federal money ran out at the state level that was supplementing shortfalls in revenue. ...” (Tr. at 6246.) A number of funding sources, including BEF, was cut, and Otto-Eldred had to furlough teachers and reduce graduation requirements. (Tr. at 6193, 6246-47.)

1659. When schools were closed due to COVID, Otto-Eldred used ESSER funds to purchase devices and hot spots, and to expand its Wi-Fi around the schools so that students could learn nearby. (Tr. at 6243.) When they returned to in-person learning, the district provided safety gear, and hired additional support staff for the new technology, as well as to address behavioral issues that were appearing upon the students’ return. (Tr. at 6243.) For those students who remained remote, technology was provided to allow teachers to teach synchronously. (Tr. at 6243-44.) The district was able to hire an interventionist at the elementary level to help support the students and close learning gaps that were present when they returned to school. (Tr. at 6243.)

1660. Notwithstanding Otto-Eldred’s challenges, at the time its current district-level plan was developed, the student-to-teacher average was “just above 15[-]to[-]1, which is a favorable level for teachers to meet the individual needs of students.” (Tr. at 6293.) However, Mr. Splain did not know whether that ratio was accurate now. (Tr. at 6294.)

1661. Otto-Eldred’s class sizes range from the “upper teens” to the “lower 20s depending on the grade level.” (Tr. at 6282.)

1662. According to its website, Otto-Eldred’s schools “provide safe, empowering learning environments for preschool through 12th grade students” (LR-00369-00001; Tr. at 6279.)

1663. As Otto-Eldred’s website states: “We have it all: [e]xcellent [a]cademic [s]tandards, [s]mall [c]lass [s]izes, [p]reschool [p]rogram, [d]ual-[c]redit [c]lass

[o]fferings, [i]nnovative [l]eadership, [and a] [w]onderful [c]ommunity.” (LR-00369-00006–00007; Tr. at 6281.)

1664. The district’s website also promises that “[a]ll students who graduate from the Otto-Eldred ... will be college or career ready, possessing the literacy skills they need to be an effective member of our society.” (LR-00369-00004; Tr. at 6283.)

*184 1665. According to its elementary school website, “technology is integrated into every classroom.” (LR-03244; Tr. at 6487.)

1666. Mr. Splain testified that Otto-Eldred still uses desks and textbooks from when he was a student at the district. (Tr. at 6121.) In fact, he testified that there is at least one high school grammar textbook still in use that has his name in it. (Tr. at 6121, 6411.) The district has had to rebind books “quite often.” (Tr. at 6460.)

1667. Using ESSER funds, Otto-Eldred recently purchased a new elementary ELA curriculum and associated materials. (Tr. at 6334.)

1668. Otto-Eldred also participates in a CTC that is co-sponsored by 10 districts in its IU. It is located half an hour away from its high school. (Tr. at 6218.)

1669. Otto-Eldred runs an agricultural education program within the district. (Tr. at 6222.)

1670. Through its dual enrollment program, 58.5% of Otto-Eldred’s high school students, during the 2019-20 school year, participated in college course enrollment. (Tr. at 6258-59; PX-02848-0009.) The courses offered as part of the district’s dual-enrollment program include English, history, civics, human biology, calculus, chemistry, environmental science, and psychology. (Tr. at 6468-69.) Mr. Splain testified that not all courses are offered every year. (Tr. at 6468-69.)

1671. As the Future Ready PA Index for the 2019-20 school year also shows, 73.6% of Otto-Eldred Junior-Senior High School students participated in “rigorous courses of study,” which was higher than the state average of 57.5%. (Tr. at 6257-58; PX-02848-0009.) Mr. Splain attributes this higher than average rate to development and promotion of the dual enrollment program. (Tr. at 6258.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1672. Otto-Eldred also offers an after-school tutoring program a couple days per week. (Tr. at 6287.)
1673. In addition, Otto-Eldred offers summer school to any students who choose to attend. (Tr. at 6290-91; LR-02325-00022.)
1674. Otto-Eldred offers a National Honor Society. (Tr. at 6478; LR-03240-00005.) Otto-Eldred's student handbook also lists other extracurricular activities, such as junior/senior band, junior/senior choir, theatre arts, student council, peer helpers/mediators, musicals, quiz team, marching band, show choir, and jazz band. (LR-03240-00014.)
1675. In addition, Otto-Eldred offers a number of sports, including baseball, basketball, cross country, cheerleading, football, golf, softball, track and field, volleyball, wrestling, swimming and diving, and trap team (which refers to competitive clay pigeon shooting). (Tr. at 6481; LR-03240-00015.)
1676. Overall, Mr. Splain believes that the quality of the programs that Otto-Eldred offers are "fairly good," and that the parents of students in Otto-Eldred are "fairly happy." (Tr. at 6280-81.)
1677. Otto-Eldred's student handbook states that "[r]egular school attendance is essential for successful student achievement. ... Prospective employers are often as interested in attendance data as they are in the grades of those they are about to hire. Regular attendance certainly relates to the students' reliability and dependability, two important traits." (LR-03240-00007; Tr. at 6479.)
- *185 1678. Otto-Eldred offers all students a preschool program, which it refers to as four-year-old kindergarten. After completing the four-year-old kindergarten program, students typically attend the regular kindergarten class. (Tr. at 6279-80.) Approximately 25 students were enrolled in the program at the time of trial. (Tr. at 6280.)
1679. To graduate, Otto-Eldred high school students must pass 4 credits in English, 4 credits in history, 8 credits in STEM, 6.2 credits in electives, and health/physical education. (Tr. at 6475; LR-03240-00004.) In addition, Otto-Eldred students must complete a graduation project. The project is a combination of activities such as preparing a resume and cover letter, participating in a mock interview, and some community service. (Tr. at 6492.)
1680. Otto-Eldred's graduation rate for the 2019-20 school year was higher than the state average. (Tr. at 6256; PX-02848-0007.) Otto-Eldred's typical graduation rate is about 90%. (Tr. at 6285.)
1681. As the Future Ready PA Index for 2019-20 indicates, 84.1% of Otto-Eldred high school graduates transitioned to school, military, or work, which exceeded the statewide average of 81.1%. (Tr. at 6308; PX-02848-0010.)
1682. Nevertheless, Mr. Splain observed that even when students graduate and plan to attend college, they either do not go or go but leave early. (Tr. at 6256-57.)
1683. Mr. Splain testified that students have to have "a basic set of knowledge" so they can choose a career and change that career if they desire. (Tr. at 6514.)
1684. On the 2019 Keystone Exams, the percentage of Otto-Eldred students scoring proficient or advanced was 55.8% for math, 64.4% for ELA, and 68.2% for biology. (PX-04857; Tr. at 6251-52.) The eighth grade PSSA scores for Otto-Eldred students were "just above the state average" in math, "a bit below average" in ELA and "a bit below average" in science. (Tr. at 6252.) Mr. Splain testified it is "very difficult" to achieve 100% proficiency on the PSSAs and Keystone Exams. (Tr. at 6370.) He also acknowledged that even with his "dream list" of personnel, he could not guarantee that Otto-Eldred students would score proficient or better on standardized exams because more than "just personnel" would be needed to achieve that result. (Tr. at 6460.)
1685. In the Future Ready PA Index for the 2019-20 school year, Otto-Eldred's junior-senior high school students scored higher than the statewide growth standard on math and algebra, ELA, science, and biology. (Tr. at 6305-06; PX-02848-0002-0003.)
1686. Otto-Eldred recently issued a \$3.6 million bond. It plans to use the proceeds to address a variety of facility issues, including upgraded lighting, roof repairs in its elementary school, and updating its boiler and improving the HVAC system in its high school building. (Tr. at 6339-40.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1687. Otto-Eldred typically receives about 75%-80% of its funding from the Commonwealth and generates about 10-15% of its funding from local sources. (Tr. at 6317.) For instance, in the 2019-20 school year, Otto-Eldred had total revenue per ADM of \$18,707.29 per student, ranking it 237th in the Commonwealth. Of that amount, state revenue per ADM to Otto-Eldred was \$14,561.07, while \$3,402.67 per ADM was generated locally. (Tr. at 6318-19; LR-01642, Tab “2019-20 Rev per ADM,” Row 339.) In that same school year, Otto-Eldred ranked 15th in the Commonwealth for state revenue per ADM. (Tr. at 6319; PX-02135, Tab “2019-20 Rev per ADM,” Row 339.)

*186 1688. By the Aid Ratio, Otto-Eldred is the 13th poorest district in the Commonwealth. (PX-04837.)

1689. Moreover, its students rank as having the 80th highest needs of 499 districts, and the district ranks 485th in local capacity per weighted student. (PX-04837.)

1690. Mr. Splain agreed that every school district in the Commonwealth has its own unique set of circumstances. (Tr. at 6274.) Although Mr. Splain is the PARSS board president, his primary responsibility pertains to Otto-Eldred and he does not know the financial circumstances or educational offerings of other PARSS member districts as he would for his own. (Tr. at 6273-75.) Mr. Splain conceded when asked whether Otto-Eldred had any resources that allowed it to perform better than some other PARSS member districts: “I don’t have specific knowledge of the needs of other districts to be able to give an assessment of what they’ve been provided to be able to evaluate a comparison between the two.” (Tr. at 6342.)

11. PARSS

1691. One of the two Organizational Petitioners, PARSS, “is a statewide membership organization composed of approximately 178 second-, third-, and fourth-class public school districts and 18 IUs in Pennsylvania. PARSS is described as an advocacy and service organization dedicated to ensuring that the Commonwealth’s rural school students have access to a quality education.” (Stip. ¶ 15.) Any school district that has a small student count or is considered rural based on a sparsity calculation can become a member

of PARSS. (Tr. at 6136.) Overall, PARSS districts serve approximately 300,000 students across the Commonwealth. (Tr. at 6138.)

1692. As part of its mission, PARSS regularly engages in legislative advocacy, provides professional development and one-on-one supports for educators and administrators, posts job boards for schools to advertise needs, and has created a grant program for teachers to obtain supplies for their classrooms. (Tr. at 6135.)

1693. Mr. Splain was the only PARSS representative to testify at trial. At the time he testified, Mr. Splain had been board president of PARSS for 3 years, and prior thereto, he had been a PARSS board member for almost 10 years. (Tr. at 6119.) Mr. Splain opined that the issue of greatest concern for PARSS is the adequacy of funding for schools in Pennsylvania. (Tr. at 6152.)

1694. Nearly one-third of the Level Up school districts, identified by the Commonwealth as the most underfunded school districts across the Commonwealth, were PARSS districts. (Tr. at 6159, 6161, 6313-15; PD-00009-0029.)

1695. PARSS supported the creation of the Fair Funding Formula. (Tr. at 6231.) In fact, Mr. Splain personally advocated for the passage of Act 35. (Tr. at 6523-24.)

1696. PARSS initially supported the hold harmless clause in the Act 35 funding formula. (Tr. at 6418-20.) According to the BEF Commission Report and Recommendations, Joseph Bard, then-Executive Director of PARSS, testified before the BEF Commission “that hold harmless has provided districts an amount of predictability to an otherwise unpredictable situation, with regard to state funding.” (LR-00509-00039.)

*187 1697. Mr. Splain acknowledged that some proponents of hold harmless, at the time it was first being considered, believed that if the hold harmless provision were eliminated, without increasing the total amount of BEF, it would have a “devastating” impact on many PARSS member districts. (Tr. at 6328; LR-00509-00039.)

1698. However, Mr. Splain also explained that even districts that benefit from hold harmless are struggling as a result of inadequate funding. (Tr. at 6113.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1699. Mr. Splain explained that PARSS does not believe that hold harmless is the answer to the school funding problems rural schools face, and that he would be “ecstatic” if the Commonwealth replaced it with a system that instead ensured adequate funding for all districts based on need. (Tr. at 6241.)

1700. According to Mr. Splain, hold harmless is:

sort of like rearranging ... the deck chairs on the Titanic. We're all going in the wrong direction. We can change things around; but if we're not changing the direction with the funding that's available, we're headed in the wrong path when it comes to meeting the needs of our students and of our schools to support those students.

(Tr. at 6241.)

1701. PARSS does not endorse putting all BEF dollars through the Fair Funding Formula, which would cause many PARSS member districts to lose funding. (Tr. at 6324-25.) For instance, Otto-Eldred would lose \$3 million out of a \$12 million budget. (Tr. at 6242.)

1702. The Fair Funding Formula did not solve PARSS members' concerns related to school funding, according to Mr. Splain, because “the formula provided the blueprint for distributing it more equitably, but it never dealt with what was adequate for our students to meet the needs they have.” (Tr. at 6235.)

1703. A substantial majority of PARSS member school districts have higher graduation rates than other districts in the Commonwealth. In 2019-20, 157 out of 177 PARSS member districts (88.7%) had a higher four-year cohort graduation rate than the Commonwealth as a whole. In fact, in 2019-20, 69.5% of PARSS member districts had a four-year cohort graduation rate that was over 90%. In 2019-20, the median four-year cohort graduation rate among PARSS member school districts was 92.3%. Between 2016-17 and 2019-20, PARSS member school districts' four-year cohort graduation

rates have been consistently higher than the graduation rate for the Commonwealth as a whole. (LR-05037.)

1704. The five-year and six-year cohort graduation rates for PARSS member school districts also have been higher than the graduation rates for those cohorts across the Commonwealth. In 2019-20, 155 out of 177 PARSS member districts (87.6%) had a higher five-year cohort graduation rate than the Commonwealth as a whole. Also, in 2019-20, 70.1% of PARSS member districts had a five-year cohort graduation rate that was over 92%. In 2019-20, the median five-year cohort graduation rate among PARSS member school districts was 94.1%. (LR-05037.)

12. Springfield Township

1705. Petitioners presented the testimony of Dr. Nancy M. Hacker, a retired, former superintendent of the School District of Springfield Township (Springfield Township), which is not a party to this action. (Tr. at 10420-21.) Dr. Hacker's testimony was intended to provide information regarding the educational opportunities available in an illustrative, higher-wealth school district. Dr. Hacker credibly testified as follows.

*188 1706. Dr. Hacker testified that Springfield Township, which ranks 22nd in the Commonwealth in current revenue per weighted student, does not typically have to triage student needs because of limited resources. (Tr. at 10449; PX-04898.)

1707. For the 2020-21 school year, Springfield Township classroom teachers had an average of 13.3 years of experience. (Tr. at 10594-95; LR-01969, Tab “LEA Averages,” Row 657, Column AA.) This is less than the average experience of classroom teachers in Wilkes-Barre (17.6 years); Greater Johnstown (15.7); Panther Valley (15.2 years); and Shenandoah Valley (15.0 years). (LR-01969, Tab “LEA Averages,” Lines 758, 275, 513, and 621, Column AA.)

1708. Unlike Petitioner Districts, Springfield Township had about one reading specialist for every 200 students and a math specialist at the elementary school level. (Tr. at 10452-53, 10462.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1709. Springfield Township had an assistant principal in every building and two assistant principals in the high school. (Tr. at 10431.)

1710. Springfield Township also had an assistant superintendent for curriculum and instruction, whose primary responsibility was to oversee the curriculum review and curriculum development process. (Tr. at 10492-93.)

1711. Springfield Township's class sizes average 20 to 21 students in kindergarten, 21 to 22 students in first and second grade, 24 to 25 students in third through fifth grade, and 25 to 26 students in sixth through twelfth grade. (Tr. at 10592-93.) This is larger than the class size in some of Petitioner Districts and smaller than the class size in others.

1712. According to the Future Ready PA Index, 74.4% of economically-disadvantaged students who attend Springfield Township High School scored proficient or advanced on the state assessments in ELA/literature compared to a statewide average of 62.1%. In math/algebra, 60.5% of Springfield Township High School students scored proficient or advanced compared to the statewide average of 45.2%. (Tr. at 10544-45; PD-00006-0013-0014.)

1713. However, as Dr. Hacker testified, despite it being sufficiently funded, not all students in Springfield Township experience the same outcomes. For instance, not all students at Springfield Township are proficient or advanced on the PSSA or Keystone Exams; about 40% of 12th grade students at Springfield Township never have taken a rigorous course of study; not all students who attend Springfield Township graduate; and some students who graduate from Springfield Township attend four-year colleges, while others attend community colleges, and some do not attend any postsecondary institution. (Tr. at 10560-61, 10569.)

1714. About 37.5% of Springfield Township Middle School students in the 2018-19 school year scored lower than proficient on the math/algebra state assessments, nearly 25% of Springfield Township Middle School students scored lower than proficient on the ELA/literature state assessments, and nearly 25% of Springfield Township Middle School students scored lower than proficient on the science/biology state assessments, according to its Future Ready PA Index. (Tr. at 10562-63; PD-00006-0003-0004.)

1715. Springfield Township has a significant proficiency gap on middle school state assessment scores between economically-disadvantaged and non-economically-disadvantaged students. For science, there is an approximately 45% gap in PSSA results between economically-disadvantaged students and the all-students group. For ELA, the gap is approximately 33%, and for math, the gap is approximately 34%. (Tr. at 10563-65; PD-00006-0003-0004.)

*189 1716. At the high school, while the gap between economically-disadvantaged students and the all-students group narrows, it remains at approximately 10 percentage points in ELA/literature, 9 percentage points in math/algebra, and 13 percentage points in science/biology for the 2018-19 school year. (PD-00006-0013-0014.)

1717. Likewise, at Springfield Township High School, for the 2018-19 school year, there is nearly a 25% gap between the Black student group and the White student group on both the ELA/literature state assessments and the mathematics/algebra state assessments. (PD-00006-0013.)

1718. Dr. Hacker agreed that the performance gap between Black students and other students at Springfield Township High School on the Keystone Exams is not explained by Springfield Township devoting more resources to White students than Black students. (Tr. at 10565-66.) Similarly, the gap in performance scores between economically-disadvantaged students and all other students is not explained by Springfield Township spending fewer resources on economically-disadvantaged students. (Tr. at 10567.)

1719. About 61% of 12th grade students at Springfield Township have taken at least one rigorous course of study. (Tr. at 10569; PD-00006-0021.) Only 40% of Black students and 42.6% of economically-disadvantaged students at Springfield Township have taken at least one rigorous course of study. (Tr. at 10569-70; PD-00006-0021.)

1720. Dr. Hacker explained that preparing students to become college and career ready is not preparing them to succeed in one "type of career," but rather "ensur[ing] that if that child has the opportunity or desires to make that choice for themselves, they will be able to go on to whatever career they want or to attend college." (Tr. at 10549.) She further stated:

William Penn School District; Panther Valley School..., Not Reported in Atl....

I can tell you that having learned logic through the processes and the algorithms that are involved in learning algebra has served me well, even though I don't use mathematics from algebra on a day-to-day basis.

[I]t's the science of learning, it's the discipline of learning that is learned, whether it's algebra or biology or any other content area that helps children later on in life after they graduate to be able to make better choices for themselves, to evaluate the information that they are hearing[.]

(Tr. at 10550.)

1721. In its own internal ranking of students for class ranking purposes, while Dr. Hacker was superintendent Springfield Township measured students according to their GPA and the weight of the courses they took. The district did not factor in PSSA or Keystone Exam scores when ranking students. (Tr. at 10612.) As Dr. Hacker agreed, standardized test scores do not provide a complete picture of a student's achievement. (Tr. at 10626-27.)

1722. Springfield Township does not require a proficient or advanced score on Keystone Exams as a graduation requirement. Some students at Springfield Township have graduated and earned a diploma without achieving proficiency on the algebra Keystone Exam, and those students were able to demonstrate proficiency in other ways. (Tr. at 10572-73.)

1723. In 2019-20, Springfield Township had revenues of \$22,874 per ADM, which included \$4,289 per ADM in state revenue and \$18,158 in local revenue. This ranked Springfield Township 453rd in state revenue per ADM and 20th in local revenue. (PX-02135, Tab 3, Row 374.)

*190 1724. Dr. Hacker stated that because it had sufficient funds, Springfield Township was able to provide the tools necessary to adequately educate its students, such as providing appropriate supports for academic remediation and addressing mental health issues, social and emotional needs, and behavioral problems. (Tr. at 10555-56, 10559.)

1725. Dr. Hacker explained that during her time as superintendent, Springfield Township had been able to provide all the recommended supports and interventions

that students needed. (Tr. at 10456-57.) For example, when the district identified that it could benefit from having a math interventionist, "there was no hesitation in hiring someone." (Tr. at 10465-66.) If there was a need for an additional teacher, Springfield Township would always hire for the position, and it never had to re-task a staff member, such as a reading specialist, to fill that role. (Tr. at 10473.) When the number of economically-disadvantaged students in Springfield Township began increasing significantly, Dr. Hacker hired increasing numbers of teachers and non-classroom teaching staff, such as psychologists, social workers, ELL teachers, and guidance counselors. (Tr. at 10438-39.)

1726. Similarly, when facilities issues arose, such as a leaky roof, or a concern about lead levels in water, Springfield Township had the resources it needed to move quickly to remediate issues. (Tr. at 10525-27, 10529; *see also* Tr. at 10534-35.)

1727. Respondents posited, during Mr. Przywara's testimony, that it was inappropriate for Lancaster to spend \$250 in additional funds per student to purchase iPads instead of Chromebooks. (*See* Tr. at 5949-50.) Yet Mr. Przywara explained that Lancaster did so because they found that it was in the educational interest of their students. (Tr. at 5949-51.) Dr. Hacker described that, after doing a "significant amount of research," Springfield Township reached the same conclusion, particularly for younger students. (Tr. at 10501-02.) For older students, Springfield Township opted to use Chromebooks rather than iPads because Chromebooks were easier to replace and more cost-effective. (Tr. at 10589.) She further explained, "for years now, having adequate technology for student learning has been a critical need in school districts." (Tr. at 10506.)

1728. Dr. Hacker agreed that it is difficult to parse out the impact of individual educational resources or initiatives on student achievement. (Tr. at 10567-68.) In this regard, Springfield Township does not offer a number of programs or services that are provided by one or more of the Petitioner Districts. For instance, Springfield Township does not offer an IB program, a STEM academy or an academy for the performing arts, a preschool program or a 4-K program, or a JROTC program. (Tr. at 10585-89.) Dr. Hacker explained that Springfield Township does not offer the IB program because, among other reasons, of its low student population and a

William Penn School District; Panther Valley School..., Not Reported in Atl....

concern that it would draw students away from the AP courses already being offered. (Tr. at 10585-87.)

1729. Dr. Hacker also agreed that there are resources other than money that contribute to the district's success. For instance, Springfield Township is successful because the district has "a very well-qualified," committed group of staff members who are trained and equipped with the resources they need. (Tr. at 10574-75.) Dr. Hacker indicated that their class sizes reflect a "ratio of human resources support that [the district] has for students ... [which] is extraordinarily beneficial." (Tr. at 10574.) Dr. Hacker also testified that parental support is an important component of a student's ability to succeed in school. (Tr. at 10575-76, 10580-81.) Furthermore, Dr. Hacker agreed that a student's motivation to do well in school factors into whether the student performs well in school and every school has students who are not motivated to perform well, despite efforts of the school and the students' parents. (Tr. at 10582-84.)

*191 1730. Dr. Hacker's testimony demonstrates that even higher wealth school districts must make choices about how to spend their money, although they may not have to make the more difficult choices faced by low-wealth school districts. Dr. Hacker agreed that if Springfield Township had additional funding, it could always do more. (Tr. at 10559.)

13. Charter Schools

1731. Legislative Respondents presented the testimony of Dr. Maurice Flurie, the former Chief Executive Officer (CEO) of Commonwealth Charter Academy (CCA), and Brian Cote, the Director of Curriculum Instruction and Assessment at 21st Century Cyber Charter School (21st Century). Both CCA and 21st Century are cyber charter schools that operate in Pennsylvania. (Tr. at 12272-74, 13876.)

a. Commonwealth Charter Academy

1732. The following findings reflect Dr. Flurie's testimony. CCA was one of Pennsylvania's first public cyber charter schools and became operational in 2003. (Tr. at 12279-80.)

1733. Any student who is a resident of Pennsylvania is eligible to enroll at CCA. (Tr. at 12303.) Students who enroll at CCA do not have to pay an additional fee to enroll there. (Tr. at 12304.)

1734. CCA has a present enrollment of about 21,000 students, from kindergarten through 12th grade. (Tr. at 12282.) CCA students reside in virtually every county and school district in Pennsylvania. (Tr. at 12289.)

1735. During Dr. Flurie's tenure with CCA, the school's total enrollment increased from 1,200 to 1,500 up to 21,000. Dr. Flurie testified that the COVID pandemic accelerated this growth because, during the pandemic, families wanted a more consistent school environment than what traditional public schools could offer. (Tr. at 12285-87.)

1736. CCA serves underserved students, *i.e.*, students who are living in poverty, not performing well, or just not thriving in the traditional public school classroom setting. (Tr. at 12275.)

1737. Traditionally, about 60% to 70% of CCA's student body is classified as economically-disadvantaged, which is defined as students who qualify for free and reduced-price lunch. (Tr. at 12282-83.)

1738. Generally, about 20% to 25% of CCA's student body is classified as special education. (Tr. at 12283.)

1739. About 30% of CCA's student body identifies as African-American. (Tr. at 12283.)

1740. The percentage of Hispanic students who attend CCA is growing. Dr. Flurie estimates that Hispanic students may account for up to 10% of the school's student body. (Tr. at 12283.)

1741. Fifty to 60% of CCA's student body identifies as White. (Tr. at 12284.)

1742. Traditionally, about 70% of CCA students were at least 1 grade level behind academically at the time of their enrollment in the school; about 40% were 2 or more years behind academically. (Tr. at 12287-88.)

1743. Based on feedback that it received from its students' parents, CCA's understanding was that many of the students

William Penn School District; Panther Valley School..., Not Reported in Atl....

came to it after leaving their local traditional school district because they and their families were dissatisfied with the school district. (Tr. at 12402-03.)

1744. Dr. Flurie estimates that, at the time of his retirement from the school in 2021, CCA employed about 600 teachers and 100 to 125 other staff. All CCA's teachers were certified to teach in Pennsylvania. (Tr. at 12362.)

1745. CCA evaluates its teachers in two ways. First, principals observe classes. Second, the school submits surveys to families to solicit feedback. Based on these evaluations, Dr. Flurie testified that CCA had a high-quality teaching staff. (Tr. at 12363-64.)

*192 1746. Dr. Flurie testified that, on average, during his tenure, teachers at CCA had about seven years of experience teaching. (Tr. at 12368-69.)

1747. At the time of Dr. Flurie's retirement, CCA started entry-level teachers at a salary of about \$45,000 or \$47,000 per year. The top of the teacher salary scale was approximately \$80,000 to \$85,000 per year. (Tr. at 12364.)

1748. CCA has provided an in-depth teacher induction program for new teachers, not only to help them adjust to teaching in a virtual environment, but also to help them become more engaged and involved with their students' families. (Tr. at 12367-68.) CCA has designated experienced teachers as master teachers who mentor newer, less experienced teachers. (Tr. at 12365.)

1749. Teachers at CCA are generally available from 7 a.m. until 4 p.m. to assist their students with questions. CCA also has an Evening Support Program. As part of that program, certified staff are available for questions from 4 p.m. to 8 p.m. Also, the school keeps virtual classrooms open until 6:30 p.m., and students can log into those classrooms for help. (Tr. at 12300-02.)

1750. CCA provides students with virtual office time, which consists of office hours during which teachers are available to students who are seeking help. The virtual office time is scheduled throughout the day, but the focus is on times when students would be likely to seek help. (Tr. at 12349-51.)

1751. CCA assigns an academic advisor to each of its students. Academic advisors ensure that students are on track academically. Students can meet with their academic advisors on an as-needed basis. (Tr. at 12349.)

1752. CCA modifies instruction for ELL students by combining instruction in their native language through translation with resources to help students become more skilled in English. During Dr. Flurie's tenure as CEO, CCA employed about six ELL teachers. It also contracted with additional ELL teachers. CCA provided translation services to its students throughout their tenure at the school. (Tr. at 12356-58.)

1753. CCA employs remedial teachers whose job is to provide additional assistance to students, as needed, in all of the core subject areas. Dr. Flurie believes that, during his tenure as CEO, CCA had sufficient teachers and resources to serve the remedial education needs of its students. (Tr. at 12358-60.)

1754. During Dr. Flurie's tenure as CEO, CCA employed about 12 school counselors. The counselors were assigned by grade levels. (Tr. at 12370-72.)

1755. During Dr. Flurie's tenure as CEO, CCA provided students and families with psychology services. The school had agreements with private providers and IUs to provide those services. The school also employed one to three school psychologists on its staff. (Tr. at 12373-74.)

1756. During Dr. Flurie's tenure as CEO, CCA provided its students with tutoring services. To receive this tutoring, students could meet with primary or support teachers, drop into a support facility, or log in for after-hours tutoring that ran until 8 p.m. Students could also participate in the school's Learner-to-Learner Support Program, which is a kind of student-tutor network, where students with aptitude or expertise can help other students who are struggling. (Tr. at 12376-77.)

*193 1757. CCA has employed teaching assistants. In some instances, the teaching assistants have been certified teachers who joined the school when a teaching position was not yet open. In other cases, the teaching assistants have been individuals with a non-teaching degree who support students academically. (Tr. at 12369-70.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1758. CCA provides its elementary school students (grades K-5) with opportunities to receive instruction in core subjects, including math, ELA, science, social studies, art and music, health and physical education. (LR-00049-00013.) In addition, CCA offers its elementary school students opportunities to take honors classes. (LR-00049-00013; Tr. at 12309-10.)

1759. CCA provides its middle school students (grades 6-8) with opportunities to receive instruction in core subjects, including math, ELA, science, social studies, art and music, health and physical education. (LR-00049-00013.) In addition, CCA offers its middle school students opportunities to take honors classes. (LR-00049-00013; Tr. at 12314-15.)

1760. CCA provides its middle school students with opportunities to take a career readiness course that coaches the students in gaining employment and developing employment skills. (Tr. at 12310-11.) CCA also provides its middle school students with opportunities to take electives in journalism, digital art and photography, and world languages including Arabic, Chinese, French, German, Japanese, and Spanish. (Tr. at 12312; LR-00049-00013.)

1761. CCA provides its high school students (grades 9-12) with opportunities to receive instruction in core subjects, including math, ELA, science, social studies, art and music, health and physical education. (LR-00049-00014.) In addition, CCA offers its high school students opportunities to take honors, AP, and dual enrollment courses. (Tr. at 12317-21; LR-00049-00010, 00014.) CCA also provides its high school students with opportunities to take classes in career readiness. (Tr. at 12318; LR-00049-00014.)

1762. Dr. Flurie testified that CCA provides its high school students with the opportunity to take a wide variety of elective courses, including courses in world languages (including Spanish, French, Japanese, Chinese, Latin, German, Arabic, and Sign Language), English electives (including journalism, speech and debate, and others), science electives (including astronomy, anatomy and physiology, health sciences, and aquaponics), social studies electives (including economics, geography, psychology, sociology, criminal justice, and African American history), business electives (including entrepreneurship, intro to business, hospitality and tourism, marketing, and others), educational technology electives (including game design, web design, computer science,

coding, cyber security, and others), physical education and health, arts and humanities (including 3D art, drawing studio, digital art, music theory, and others), family and consumer science electives (including parenting, counseling and mental health, cosmetology, and others), and college prep SAT and ACT courses. (Tr. at 12318-29; LR-00049-00014.)

1763. CCA offers a program called Career Pathways, which allows students to conduct self-assessments, guided by a counselor, in order to identify their interests and aptitudes. The program helps students to identify potential career pathways, which could include mathematics and engineering, construction trades, or education, for example. Each pathway is associated with course recommendations. (Tr. at 12334-36.)

***194** 1764. CCA has programs and facilities that are focused on agriculture, called AgWorks, and technology, called TechWorks. CCA is also developing a program and facility that will be focused on the medical industry, from radiology techs to doctors and nurses, which will be referred to as MedWorks. CCA chose to create these programs and facilities because they represent the three largest sectors of employment in Pennsylvania. (Tr. at 12345.)

1765. CCA's AgWorks program includes the aquaponics courses that the school offers at the AgWorks facility. This facility includes a 6,000-square-foot aquaponics research and drawing facility and CRISPR genetics lab. The courses involve instruction in farming or industrial processes that are associated with aquaponics-growing, farming, and research. The genetics lab with CRISPR technology allows for gene manipulation and gene splicing. (Tr. at 12324-26.)

1766. CCA's TechWorks facility is located in the Pittsburgh region. TechWorks focuses on modern technology, from robotics to cybersecurity to computer-assisted drafting to programming. (Tr. at 12342-43.)

1767. During Dr. Flurie's tenure as CEO, CCA was developing a facility for MedWorks, at a location close to SDP. The intent is to incorporate MedWorks into the coursework that the school offers to students. (Tr. at 12343-45, 12348.)

1768. CCA offers a College and High School Program, which allows students to take college-level courses to satisfy certain graduation requirements. During Dr. Flurie's tenure,

William Penn School District; Panther Valley School..., Not Reported in Atl....

Harrisburg University and Central Penn College participated in the program. The participating colleges provided course content to CCA or awarded college credit for the successful completion of certain courses that the school's teachers taught to its students. Students needed to be ready for college-level work to be eligible to participate in the program. (Tr. at 12336-38.)

1769. CCA offers students internship opportunities in traditional trades. The school's students can also develop their own internship, if they find a mentor or a business willing to accommodate the internship that they develop. (Tr. at 12338-39.)

1770. CCA students can also take advantage of work-based learning programs of their own design by finding a business entity or mentor that will support them in that endeavor. (Tr. at 12339.)

1771. CCA enters into articulation agreements with workplaces to facilitate internships and work-based learning opportunities. (Tr. at 12339-40.)

1772. CCA offers students after-school club opportunities, with topics such as debate club, fly fishing clubs, robotics, and drone flying. During Dr. Flurie's tenure, the school's Family Services Department supervised the clubs. (Tr. at 12377-78.)

1773. CCA offers summer school options for both remedial work and enrichment classes for students who want to stay engaged academically. The school's regular certified teaching staff teach the summer school courses. (Tr. at 12379.)

1774. In Dr. Flurie's opinion, CCA provides its students with an adequate education and an opportunity to become college-and-career ready. (Tr. at 12403.)

1775. Dr. Flurie testified at CCA only 40.7% of students scored proficient or advanced on the ELA PSSA in 2019. (Tr. at 12447; PX-08117, Row 16687.) In math, 11.5% of CCA students scored proficient or advanced on the 2019 PSSA. (Tr. at 12449; PX-08117, Row 16701.) In science, 50.5% of CCA students scored proficient or advanced on the 2019 PSSA. (PX-08117, Row 16711.) Dr. Flurie testified that student performance on the 2019 PSSAs did not "fluctuate dramatically" from prior years. (Tr. at 12449-50.)

***195** 1776. On the 2016 Keystone Exams, 39.8% of CCA students scored proficient or advanced in algebra I, 37.6% in biology, and 57.1% in literature. (Tr. at 12467; PX-08120, lines 1590, 1592, 1594.) In 2017, on the Keystone Exams, 34.1% of CCA students scored proficient or advanced in algebra I, 31.3% in biology, and 51.9% in literature. (Tr. at 12468; PX-08121, lines 1470, 1472, 1474.) On the 2019 Keystone Exams, 28.6% of CCA students scored proficient or advanced in algebra, 28.1% in biology, and 48% in literature. (Tr. at 12453; LR-04233, Rows 1616, 1618, 1620.)

1777. The Department designated CCA a CSI school, which is the lowest 5% of Title I schools. (Tr. at 12423-24.) For all but possibly one year of its existence, CCA has been designated as needing improvement in academic achievement. (Tr. at 12424-25.)

1778. The four-year cohort graduation rate for CCA was 56.1%, which is more than 30 percentage points lower than the statewide average. As a corollary, CCA also has a higher dropout rate than the statewide average. (Tr. at 12470.) For the 2018-19 school year, the dropout rate at CCA is 10.67%. (Tr. at 12473; PX-01918, Tab "Summary by LEA 6," Row 242.) The dropout rate for charter schools in general is 5.09%, compared to 1.73% overall for all public school types. (Tr. at 12472; PX-01918, Tab "Summary by LEA Type 2.")

1779. CCA supplies its students with the hardware that they need to attend the school. This hardware includes a laptop and monitor, along with textbooks and manipulatives that are needed for lessons. The school also provides its students' families with a subsidy for their internet connectivity. (Tr. at 12303-04.)

1780. CCA has 17 facilities, called Family Service Centers, where teachers and administrators work. They provide a place for students to socialize and meet for academic field trips. Students can also visit a Family Service Center for academic support. In establishing these facilities, the school's goal was to have a physical facility within a one-hour drive from any student. CCA owns the vast majority of its facilities. (Tr. at 12289-93.)

1781. CCA teachers can teach out of the Family Service Centers, from home, or a mixture of both. The Family Service Centers provide teachers with a cubicle with technology to conduct classes, as well as production studios that teachers

William Penn School District; Panther Valley School..., Not Reported in Atl....

can use if they need more camera angles or need to use demonstratives or manipulatives. (Tr. at 12291-92.)

1782. Counsel for President Pro Tempore objected numerous times during the cross-examination of Dr. Flurie, asserting that he was not offered to testify on direct examination about, and therefore should not be required to testify during cross-examination on, “national metrics or standards for educational quality,” (Tr. at 12581), or “Pennsylvania’s funding system,” (Tr. at 12596). Counsel stated that Dr. Flurie was being offered only to “testify about his school, the situations they confront, the things they do and the education they provide.” (Tr. at 12599.) While the Court finds Dr. Flurie’s testimony generally credible, given the limitations counsel imposed on his testimony by restricting the scope of direct examination, thereby limiting the scope of cross examination, the Court does not find Dr. Flurie’s testimony very helpful at establishing CCA’s role in the system of public education, or addressing the issues before the Court, particularly given the lack of evidence about CCA’s finances and funding.

b. 21st Century Academy

1783. Approximately 1,600 students currently attend 21st Century. (Tr. at 13884.)

*196 1784. All Pennsylvania sixth through twelfth grade students are eligible to attend 21st Century, as long as they can provide the school with proof that they reside in the Commonwealth. (Tr. at 13891.)

1785. Enrollment at 21st Century has been steadily increasing, with a spike during the COVID pandemic. The enrollment nearly doubled during the pandemic, but as bricks-and-mortar schools have transitioned back into in-person instruction, 21st Century’s enrollment has returned to its pre-pandemic levels. (Tr. at 13886.)

1786. Students who attend 21st Century do not pay tuition or fees to attend the school. (Tr. at 13892.) Their home school districts pay “tuition” for them to attend 21st Century. (Tr. at 14043-44.)

1787. 21st Century operates out of two primary locations, one in West Chester and one in Murrysville. (Tr. at 13935.)

1788. Mr. Cote testified that he believes 21st Century provides its students with an adequate education and is doing a very good job with providing opportunities to students. (Tr. at 13962.)

1789. 21st Century is an Apple Distinguished School, awarded in recognition of the school’s commitment to high-quality technological education. (Tr. at 13955-56.)

1790. 21st Century employs approximately 84 teachers. During the pandemic, it hired 56 additional temporary staff members to help with increased enrollment. (Tr. at 14033-34.)

1791. 21st Century’s teaching staff is adequate to provide for student learning opportunities. (Tr. at 13936-37.)

1792. 21st Century provides academic support services like counselors and nurses. Mr. Cote believes that 21st Century has adequate support staff to meet the needs of its students. (Tr. at 13940-41.)

1793. The school has a designated “learning coach,” who supports teachers and students who have technological needs, for example, a need for instruction on how to use certain educational apps. (Tr. at 13892-93.)

1794. 21st Century provides its students with academic instruction in a variety of subject areas. For example, sixth grade students take language arts, math, science, ancient history, physical education, and health. Sixth grade students can also choose electives in family consumer science, art, study skills, music, technology, or middle school seminar. (Tr. at 13897; LR-00004-00006.) Seventh and eighth grade students also take courses in math, language arts, science, social studies, physical education, and health, and they choose from various electives. (LR-00004-00006.)

1795. Additionally, 21st Century’s middle school students can take computer science and coding classes through Apple’s Learn to Code Adventures course. As the course description explains: “Students learn more advanced coding concepts, such as event handling, advanced arrays, and component-based design as they scope and build their own projects.” (Tr. at 13901-02; LR-00004-00013.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1796. Mr. Cote testified that 21st Century classes engage students through rigorous education and innovative techniques. The course description for the school's sixth grade ancient history course explains that it:
- gives students the opportunity to explore history's beginnings, world religions and how civilizations impacted not only other civilizations in the ancient world, but the modern world today. Ancient Rome, Greece, India, Africa, and China are explored. This will occur through activities, forum discussions, geography studies, webcasts, and real-world connections to today's current events.
- *197 (Tr. at 13901; LR-00004-00009.)
1797. 21st Century offers study skills classes to middle school students. In those classes, the students receive individualized academic support and learn techniques for engaging in rigorous courses. (Tr. at 13899.)
1798. 21st Century aligns its high school curriculum to the state academic standards. (Tr. at 13921-22.)
1799. 21st Century provides its high school students with the option to take electives, including business law and drama and theater. (Tr. at 13918-19.)
1800. 21st Century offers independent study programs that enable students to study topics that its courses do not cover. The school also offers honor societies for high-achieving students. (Tr. at 13927-28.)
1801. For struggling students, 21st Century offers credit recovery courses, which help students catch up to their grade level. (Tr. at 13928.)
1802. 21st Century actively engages with students' families. The school provides outreach opportunities, community events, and schoolwork sessions in community venues like libraries, zoos, and parks. (Tr. at 13894.)
1803. 21st Century assigns an academic advisor to each of its students. These advisors establish relationships with students and their families. (Tr. at 13895.)
1804. 21st Century's middle school students take guidance courses. In these courses, counselors discuss career options with students and provide the students with academic and social-emotional support. (Tr. at 13898.)
1805. 21st Century conducts a mandatory orientation program to acclimate its new students to online learning and provides 9th-grade transition programs. (Tr. at 13924-26.)
1806. 21st Century offers a variety of extracurricular activities, including a gaming club, fishing club, and book club. Additionally, 21st Century partners with its students' home school districts to enable and encourage its students to participate in local athletic activities. (Tr. at 13952-54.)
1807. Mr. Cote believes that 21st Century has adequate educational facilities. (Tr. at 13936.)
1808. 21st Century connects with students through various digital platforms, including Moodle, where students receive synchronous and asynchronous instruction, and Jigsaw, which provides an interactive platform for teachers and students to engage in live instruction. (Tr. at 13931-32.)
1809. In addition to providing students with flexibility through asynchronous learning, 21st Century has taken steps to increase student-teacher engagement by encouraging teachers to develop instructional videos for difficult concepts, community work sessions, day-long virtual office hours, and tutoring sessions. (Tr. at 13923-24.)
1810. 21st Century supplies its students with a MacBook and an iPad free of charge when they enroll in the school. (Tr. at 13891-92.)
1811. 21st Century students and families can be reimbursed for the cost of internet connectivity. (Tr. at 13892.)
1812. Mr. Cote testified that for the 2019-20 school year, the combined graduation rate – including four- and five-

William Penn School District; Panther Valley School..., Not Reported in Atl....

year cohorts, students with disabilities, and economically-disadvantaged students – for 21st Century students is 65.94%. For 21st Century students with disabilities the graduation rate is 50.9%, and for economically-disadvantaged students the graduation rate is 42.6% (Tr. at 14067-68.) Based on 21st Century's graduation rate for economically-disadvantaged students, the Department designated it as an ATSI school. (Tr. at 13994.) Mr. Cote explained that a school can be designated ATSI in several ways, one way being when the four- and - five-year cohort graduation rate is below 67%. (Tr. at 14078.)

***198** 1813. Similar to Dr. Flurie's testimony, counsel for President Pro Tempore objected to the cross-examination of Mr. Cote, asserting that he did not testify on direct examination about, and therefore should not be permitted to testify during cross-examination on, “whether students in any given level of poverty ... need or don't need supports,” (Tr. at 13975), or how a “cyber charter school is financed or funded.” (Tr. at 14039.) Counsel specifically asserted that President Pro Tempore was not asking the Court to infer from Mr. Cote's testimony anything “to do with whether any other school can or cannot provide an adequate education” but rather that Mr. Cote was “here only to testify about the relative quality of the education” at his school, 21st Century. (Tr. at 14047-48.) Given the limitations counsel imposed on this testimony by restricting the scope of direct examination, thereby limiting the scope of cross examination, the Court does not find Mr. Cote's testimony very helpful at establishing its role in the system of public education, or addressing the issues before the Court, particularly given the absence of evidence about 21st Century's finances and funding.

14. Logos Academy

1814. Legislative Respondents presented the testimony of Aaron Anderson (Rev. Anderson), the CEO and Head of School of Logos Academy, a faith-based private K-12 school, located in York, Pennsylvania, that primarily serves students who live in poverty. Rev. Anderson has held that position since 2014. (Tr. at 11350, 11353, 11359.)

1815. Logos Academy primarily serves students who live in poverty. Under the Logos Academy bylaws, two-thirds of the school's student base must live in poverty. (Tr. at 11353-54.)

Enrollment at Logos Academy fluctuates from 225 to 300 students a year. (Tr. at 11387-88.)

1816. Logos Academy is a Middle States Accredited school. (Tr. at 11403.)

1817. Logos Academy teaches students from 12 school districts, but 70% to 80% of its student body comes from the York City School District. (Tr. at 11357.)

1818. Thirty-seven percent of Logos Academy families self-identify as White; 28% consider themselves Hispanic; 23% self-identify as Black or African American; and 12% consider themselves multi-ethnic or mixed-race. Although these numbers fluctuate year-to-year, they are representative of the racial and ethnic diversity in the student body. (Tr. at 11385-86; LR-00152.)

1819. Of the Logos Academy student body, 59% live at or below the federal poverty line, 22% are working class, and 19% are middle or upper income. Although these numbers fluctuate year-to-year, they are generally representative of the socioeconomic makeup of the student body. (Tr. at 11386-87; LR-00152.)

1820. All students at Logos Academy receive free breakfast and lunch through the National School Lunch Program. (Tr. at 11419-20.)

1821. Logos Academy employs more than 20 part-time and full-time teachers. (Tr. at 11402-03.)

1822. Logos Academy evaluates its teachers through classroom visits and surveys to families. According to Rev. Anderson, that data, along with test data, provides a holistic view of how its teachers are performing as educators. (Tr. at 11403-04.)

1823. On average, Logos Academy's teachers spent about 7 years at the school, but some of them have been there for more than 20 years. (Tr. at 11404.)

1824. Logos Academy pays its teachers an average salary in the \$40,000 range. Logos Academy has tried to increase the salaries that it can offer, but it recognizes that it is on the lower end of the pay scale when compared to public schools. (Tr. at 11405-06.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1825. Logos Academy also offers health benefits, retirement benefits, and a generous paid-time-off policy. (Tr. at 11406-07.)

1826. Logos Academy provides its teachers with professional development opportunities through conferences or presentations by individuals who are experts in curriculum or certain subject matters. (Tr. at 11407.)

1827. Logos Academy caps class size at 18 students, but the average class size is 15 students. (Tr. at 11387; LR-00152.)

1828. Logos Academy is a classical school. It offers a core curriculum in math, reading, science, and history. The school also provides its students with opportunities to take character-formation classes and Bible classes and participate in community service activities. At the middle school level, the school instructs its students in Latin, and at the high school level, it teaches them rhetoric. (Tr. at 11355, 11397-98.)

***199** 1829. Logos Academy teaches its students by using a Socratic dialogue approach, which involves students sitting in a circle and discussing material. Rev. Anderson testified that this style of teaching develops effective communication skills in the students and helps them to build independent thought and empathy. It also helps students to understand that, for a given issue, there can be a variety of viewpoints and all of those viewpoints can be reasonable. (Tr. at 11399-401.)

1830. Logos Academy offers its student support services through the Lincoln IU in York County. Those services include academic and emotional support, counseling, and remediation. Additionally, through the Lincoln IU, Logos Academy has daily access to a social worker. (Tr. at 11407-08, 11410.)

1831. Logos Academy also offers in-house support services to students, such as academic, emotional, and spiritual support services. Logos Academy, in addition, employs a director of cultural inclusion and community engagement, who works to ensure that the school is adequately supporting and representing the cultures of its students. (Tr. at 11408-10.)

1832. Logos Academy has been able to make connections with local business partners to create internship opportunities for its students. (Tr. at 11401.)

1833. Logos Academy provides its students with some after-school programming such as community-based programs (e.g., Boy Scouts or Girl Scouts), robotics, volleyball, cross country, and tutoring. Logos Academy has partnered with area schools to allow its students to participate in those schools' athletic activities, such as cheerleading and football. (Tr. at 11411-13.)

1834. Logos Academy has a school building in York. Logos Academy is also expanding its facilities to better accommodate its high school students, and it plans to add athletic facilities. The expansion project will allow Logos Academy to increase its enrollment capacity to 450 or more students. Logos Academy also built a playground for its students. (Tr. at 11394-96.)

1835. Logos Academy provides its students with access to textbooks, desks, classroom furniture, science equipment, and technology resources, including Chromebooks. Every student at Logos Academy has a Chromebook. (Tr. at 11396-97.)

1836. Logos Academy students are not required to take the State Assessments. Instead, Logos Academy uses Northwest Evaluation Association's (NWEA) Measures for Academic Progress (MAP) testing and tracks how well its students perform in comparison to the national percentile. According to a document that Logos Academy prepares annually, for 2018-19, grammar school students at Logos Academy tested at the 51st national percentile in math, 50th national percentile for reading, and 42nd national percentile in language use. Middle school students tested in the 60th national percentile for math, 57th national percentile for reading, and 57th national percentile for language use. At the high school level, students tested at the 72nd national percentile in math, and 71st national percentile in both reading and language use. (Tr. at 11388-90; LR-00152-00002.)

1837. Logos Academy also tracks how its students perform on the SAT compared to the national average. For 2018-19, Logos Academy students scored an average of 1140 on the SAT, whereas the national average for the same time period was 1068. (Tr. at 11390-91; LR-00152-00002.)

1838. When it comes to academic achievement, students at Logos Academy tend to perform at similar levels regardless of their ethnic or socioeconomic backgrounds. In 2018-19,

William Penn School District; Panther Valley School..., Not Reported in Atl....

for example, students who lived below the federal poverty level tested in the 67th percentile on the MAP, while students who lived above the federal poverty level tested in the 69th percentile on the MAP. The narrowness of this gap tends to exist year after year. (Tr. at 11391-93; LR-00152-00002.) Nearly 100% of Logos Academy graduates go on to attend and succeed in college. The graduates who have chosen not to attend college have opted for a trade program or the military. (Tr. at 11414, 11416-17.)

*200 1839. Almost 100% of students at Logos Academy receive tuition assistance to attend the school. Only about 12% to 15% of the school's annual operating budget is covered by tuition. (Tr. at 11364-65.)

1840. A significant portion of Logos Academy's annual budget is funded through the EITC program and the OSTC program. (Tr. at 11365-67.)

1841. For the fiscal year ending on June 30, 2019, Logos Academy received \$1,739,670 from the EITC and OSTC programs, and this money was placed into the school's tuition assistance scholarship fund. The school's total revenue for the same year amounted to \$4,626,215. In addition to EITC and OSTC program contributions, approximately \$860,000 in other contributions was placed into the tuition assistance scholarship fund. (Tr. at 11373-76; LR-00151-00006.)

1842. Without funding from the EITC and OSTC programs, Logos Academy would need to operate a much smaller school and probably could not offer a K-12 education. (Tr. at 11378-79.)

1843. Logos Academy uses a sliding scale to determine the amount of tuition for its students. The lowest tuition rate is charged to the students who live at or below the federal poverty line. (Tr. at 11379-80.)

1844. At the Logos Academy, the tuition cost is not the same as the cost to educate. For the 2021-22 school year, the cost to educate was about \$13,000 per student. However, the average tuition revenue was \$2,000 per student. Logos Academy uses the scholarship fund to make up the difference. (Tr. at 11380-81.)

1845. Logos Academy emphasizes the value of family engagement. Logos Academy views school as a tool to help

parents shape their children and, over the years, has hosted activities and community events to encourage families to become involved with the school and their children. Logos Academy also provides families with support so that, at home, they can better help students with schoolwork. (Tr. at 11417-19.)

1846. According to Rev. Anderson, the culture in a school is one of the most important factors in students' ability to succeed – whether teachers and staff believe students can succeed and create a supportive culture for students. (Tr. at 11502.)

1847. The Court finds Rev. Anderson's testimony credible.

15. NAACP-PA

1848. One of the two Organizational Petitioners herein, NAACP-PA is a nonprofit organization operating in Pennsylvania. NAACP-PA is a unit of the NAACP, described as the nation's oldest and largest nonpartisan civil rights organization. (Stip. ¶ 16.) The NAACP has a set of bylaws that establish rules for the State Conferences and for the other units of the organization. There are 46 NAACP chapters within Pennsylvania that cover the whole state. (Tr. at 8912.) State units do not have any independent existence separate from the national organization. (Tr. at 8910.)

1849. Gregg Zeff, an attorney licensed in both Pennsylvania and New Jersey who serves as the State Conference Legal Redress Chair (Legal Redress Chair) for the Commonwealth, was the only NAACP-PA representative to testify at trial. (Tr. at 8907-09.) Mr. Zeff became involved in the Philadelphia branch of the NAACP while working as a civil rights attorney and formed an organization called the Social Justice Law Project, which collaborated with the NAACP-PA in handling complaints of all kinds. (Tr. at 8919.) The Court finds Mr. Zeff credibly testified as follows.

*201 1850. As Mr. Zeff noted, “[o]ne of the problems is the NAACP has got a big name and is known to help people, and so every kind of complaint imaginable [is covered], from people who needed a criminal lawyer to people who needed help with social services, and, of course, to people who

William Penn School District; Panther Valley School..., Not Reported in Atl....

needed educational help in any kind of [sic] – and, of course, discrimination complaints.” (Tr. at 8919-20.)

1851. A primary purpose and aim of the NAACP-PA is to improve the political, educational, social, and economic status of African Americans and other racial and ethnic minorities. Mr. Zeff described the primary mission of both the NAACP and the NAACP-PA as the “eradication of discrimination at all levels.” (Tr. at 8913-14.) He explained that the NAACP-PA is particularly concerned with the areas of “[e]ducation, employment, any area where there could be any kind of discrimination or social justice issue” and that housing and voting rights are also important to the organization. (Tr. at 8914.)

1852. Mr. Zeff indicated that the NAACP-PA includes members whose children and grandchildren attend public schools in Pennsylvania. (Tr. at 8918-19.) Members are in 46 branches or chapters across the state, including in Darby and Yeadon, which are part of William Penn, as well as in Lancaster, Philadelphia, Wilkes-Barre, and many other low-income communities throughout the Commonwealth. (Tr. at 8914-16; PX-00781.)

1853. Mr. Zeff testified that as the Legal Redress Chair for the NAACP-PA, he receives complaints from its members and branch leaders throughout the state that their children's schools lack resources to meet their needs. (Tr. at 8924-25.) Mr. Zeff had a “clearinghouse role” to review the type of matter involved and “send the complaint where it needed to go.” (Tr. at 8932.) Mr. Zeff explained that during his time as Legal Redress Chair, education concerns took up 20%-25% of his time and during his time working with the Philadelphia chapter, “never a week would go by where there ... wouldn't be some kind of education complaint.” (Tr. at 8935.) His testimony in this regard was not offered for the truth of the complaints themselves, but rather to describe how the organization investigates the complaints. Mr. Zeff described the complaints in general terms and did not describe the results of any investigation that the NAACP-PA conducted in response to any particular complaint. (Tr. at 8923-24, 8930-32.)

1854. Mr. Zeff stated that the NAACP-PA believes “there's a direct correlation” between school funding and the complaints NAACP-PA receives about education quality. (Tr. at 8937-38.) Mr. Zeff explained that “most of these complaints

come from areas where there is poverty. Most of these complaints relating to quality have to do with money.” (Tr. at 8938.) These complaints include “the quality of education ... how old some of the material was ... about buildings ... falling apart, leaks; ... heat; ... there were complaints about all kinds of issues all over the state.” (Tr. at 8928-30.) More specifically, Mr. Zeff testified, regarding education, the types of complaints received by the Philadelphia branch of NAACP-PA “[r]eally ranged the gamut from my kid got a bad grade to there's no hot water in the school, the teacher hasn't been here, we can't get the services we require, kids that couldn't get their ... special needs complaints met; to disputes with a principal, disputes with a teacher, just about every kind of complaint you could imagine.” (Tr. at 8923.) When he became Legal Redress Chair, “[i]t was a little more refined with the State than it was with Philadelphia, but it was the gamut of the same thing.” (Tr. at 8929.)

*202 1855. When the COVID pandemic shut down schools, NAACP-PA also received a series of complaints from families across the state that districts were not receiving computers and access to remote instruction as quickly as other districts were. (Tr. at 8930, 8932-33.)

1856. When the NAACP-PA receives complaints, it conducts investigations, which include interviews of parents and students, and then it refers the concerns to the organization's education specialists. (Tr. at 8925-26, 8932.) The NAACP-PA then undertakes a wide range of actions, all of which take time and effort, including meeting with teachers, principals, and school districts; advocating on behalf of students and families to legislators and testifying at legislative hearings; and raising issues with the State Board and the Department. (Tr. at 8933-37.)

1857. Mr. Zeff confirmed, however, he did not personally visit schools or school districts to observe firsthand the subject matter of the complaints. Rather, as he admitted, he “heard from other folks.” (Tr. at 8951.) Although Mr. Zeff testified that the NAACP-PA investigated some complaints that had been received, he did not share the results of any of those investigations. Mr. Zeff acknowledged he does not have any personal knowledge about school funding in Pennsylvania and does not have any expertise about education policy concerning ways to improve educational outcomes for either students of color or students living in poverty. (Tr. at 8938.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1858. Mr. Zeff agreed that it is “true” that “nationally there have been questions about standardized testing” and the NAACP historically has noted that standardized tests, generally, have involved language, concepts and examples that are not as familiar to minority and low-income children, which can make them discriminatory in nature. (Tr. at 8939-40, 8944.) Moreover, NAACP-PA receives complaints from members across the state regarding the quality of education provided to children of color, mostly in areas of poverty. (Tr. at 8929-30.) No party argues that such disparities are acceptable in a modern society. For example, Speaker has declared that education is “the civil rights issue of our day.” (PX-03215, Resp. No. 106 (Speaker's Resp. to RFAs).) And the Department agrees that there is an urgent need to address the conditions of learning that Black and Hispanic children experience. (Tr. at 1805-06.)

G. Expert Witnesses

1. Petitioners

a. Derek Black

1859. Professor Black testified for Petitioners as an expert in the history of education law with a specialty in the history of state constitutional education clauses. (Tr. at 918-19.) He was asked by Petitioners to “explore the history and development of the Education Clause across time in the State of Pennsylvania to get a better sense of ... what the motivations and factual predicates were to those changes.” (Tr. at 915-16.)

1860. To reach his conclusions, Professor Black researched Pennsylvania's constitutions, analyzed constitutional convention debates about the Education Clause, and reviewed a range of secondary sources, including newspapers and history books. (Tr. at 921-22.)

1861. Professor Black testified that in 1872, a constitutional convention “was called for the specific purpose of solving perceived problems in the Commonwealth at the time[.]” including concerns about the provision of public education, and delegates from across the state were elected to represent their local communities' views about how to best amend the Constitution. (Tr. at 924-28.)

*203 1862. Professor Black testified that, in his opinion, the 1873 Convention resulted in “quite an incredible number of important changes” to the Constitution related to education, including a substantively revised Education Clause. (Tr. at 931-35.) He further testified that although some of the Education Clause's language was subsequently updated in the 1968 Constitution, the fundamental components of the 1874 Education Clause remained in place. (Tr. at 935-38.)

1863. Professor Black described that the delegates placed significant importance on education. (Tr. at 919-20.) The delegates believed, according to Professor Black, that education was important for the success of government. (Tr. at 940-43.) He also testified that the delegates believed education was necessary for children to grow up and “participate in ... a civic way in society, and also ... be self-sufficient.” (Tr. at 942-43.)

1864. According to Professor Black, the delegates sought to establish a single system of public education that served “all children.” (Tr. at 932-33.) Prior to 1874, the Education Clause only referenced providing education to the poor. (Tr. at 1027.) Prior to the Constitutional Convention, public schools, however, had not gained traction in the poor and more remote areas of Pennsylvania and a significant portion of rural Pennsylvania did not have any schools. (Tr. at 1027-28.)

1865. Professor Black testified that the inclusion of the word “shall” in the Education Clause reflected a mandate on the General Assembly to maintain and support a statewide system. (Tr. at 931-32.)

1866. Professor Black further testified that the delegates elevated the Superintendent of Public Instruction, the equivalent of today's Secretary of Education, to the status of a constitutional officer, (Tr. at 934-35), and placed education “on the same plane as the other basic functions of government” by including it alongside the three branches of government in the general appropriation bill, (Tr. at 933-34, 944-45).

1867. Based on his review of the debates, Professor Black opined that the delegates wanted to ensure that the new system of education would provide “a high quality of education.” (Tr. at 969-73.) Professor Black based this opinion on his review of other state constitutions that also used the term “thorough

William Penn School District; Panther Valley School..., Not Reported in Atl....

and efficient.” He explained that the term “thorough and efficient” signifies “a good quality education.” (Tr. at 969-70, 1040-41.) Professor Black viewed this qualitative standard as “mandating a floor below which no school can fall.” (Tr. at 950, 972, 1045, 1080.)

1868. When the 1967 Constitution amended the Education Clause, Professor Black viewed it as a “language change” to “clean[] up ... historical outdated aspects” of the Education Clause. (Tr. at 935-36.) They were not substantive changes, in Professor Black's view, but were more “a drafting change.” (Tr. at 937, 963.) For example, the removal of the \$1 million figure was because it was “antiquated.” (Tr. at 936.) In addition, Professor Black explained that the reference to children was removed in the 1967 Constitution because it was no longer necessary to specify that the education system would benefit “all children.” He explained that while educating “all children” had been “quite [a] radical concept in 1868 ... by the time you get into the 1960s, there's no serious conversation that somehow or another that when we say that we're going to have a system of common schools, that not all children are going to get to go.” (Tr. at 968.)

*204 1869. Professor Black further opined that nothing in the historical record suggests the addition of the phrase “to serve the needs of the Commonwealth” was intended to “subtract[] or detract[] from anything that occurred in the previous version of the Constitution.” (Tr. at 1079.) Rather, including that statement confirmed what delegates already expressed in 1873, that the system of public education should “prepare citizens for [] citizenship and democratic participation in the function of the government.” (Tr. at 1074-75, 1078-79.)

1870. The Court finds Professor Black's testimony summarized herein as to the facts of the Education Clause credible.

b. Matthew G. Kelly

1871. Dr. Kelly, an assistant professor at Penn State University, was qualified as an expert for Petitioners in the field of educational finance. (Tr. at 1140.) Dr. Kelly received his Ph.D. from Stanford University in 2018. Most of his academic writing has been on the history of education, and

when he submitted his expert report in August 2020, he had been a professor for approximately two years. (Tr. at 14580-85.) At Penn State, Dr. Kelly teaches courses on school finance and data informed decision-making for school leaders. (Tr. at 1134.) Dr. Kelly used Pennsylvania-specific measures and Pennsylvania-specific data to analyze and make conclusions about the adequacy and equity of Pennsylvania's school funding system.

1872. Dr. Kelly testified that “researchers for many years have agreed that some school districts will need additional funding because they have higher costs related to either the characteristics of the district[] itself, or the students they educate.” (Tr. at 1164, 1771.) In the face of claims about significant increases in state funding, Dr. Kelly explained that after considering inflation and mandated costs, school districts are in fact generally falling further behind. (Tr. at 14494, 14497-98.)

1873. Dr. Kelly testified the BEF Commission's work was limited to determining the process for distributing school funding; however, it was left to the General Assembly to determine the level of state funding for basic education. Dr. Kelly explained that Act 35 provides for the Fair Funding Formula that accounts for district specific factors. It starts with a raw count of students for whom a school district is fiscally responsible, the ADM. After adding in the student weights from the Fair Funding Formula to its ADM count, a school district receives a weighted student headcount. Like the Fair Funding Formula, the Special Education Fair Funding Formula creates a weighted student count by counting the number of students with disabilities in a district and assigning them into three tiers, from least costly to most costly. (Tr. at 1190-91, 1255-56.) Dr. Kelly credibly testified that, generally, the weighted student headcount, rather than the raw ADM count, is a way to quantify the relative need of a school district. (Tr. at 1165-70.)

1874. Dr. Kelly testified that when the funds currently distributed pursuant to the student-weighted Fair Funding Formula are combined with the \$100 million in Level Up funding, approximately \$1 billion in state funding now passes through the Fair Funding Formula. (Tr. at 1433-35.) He further credibly testified that based upon current trends and historical practices, the amount of money passing through the Fair Funding Formula is increasing and can be expected to increase in future years. For instance, in the 2018-19 fiscal

William Penn School District; Panther Valley School..., Not Reported in Atl....

year, approximately 8.4% of BEF was distributed according to the Fair Funding Formula. For the 2021-22 fiscal year, approximately 15% of BEF funds passed through the formula. (Tr. at 1431-32, 1434-35.)

***205** 1875. Dr. Kelly noted that Pennsylvania, like other states, funds its public education system through a partnership of federal, state, and local governments. (Tr. at 1144-45.) In 2018-19, 3.22% of revenue came from federal sources, 37.32% came from state sources, and 57.70% came from local sources. (Tr. at 1145, 1163-64.) Dr. Kelly testified that taxes derived from the income and real estate values of a school district account for 97% of all local revenue. (Tr. at 14504-05.) According to Dr. Kelly, Pennsylvania ranked 45th out of 50 states in the proportion of its funding that comes from local governments. (Tr. at 1145-46.) Dr. Kelly concluded that the Pennsylvania school funding system is “irrational and anachronistic” because it is disconnected from the need of school districts and the students they educate, and it is insufficient to give students in the Commonwealth an opportunity to meet the standards the State has set for them. (Tr. at 1292, 1294.)

1876. To look for patterns and to draw conclusions regarding Pennsylvania school funding, Dr. Kelly used the Market Value-Personal Income Aid Ratio (Aid Ratio), which measures the relative wealth of a district and is comprised of the taxable real estate wealth in a district and personal income of residents, on a per pupil basis. (Tr. at 1187, 1148.)

1877. Using the Aid Ratio, Dr. Kelly ordered the Commonwealth's school districts from wealthiest to poorest and divided them into 5 quintiles with approximately an equal number of students (350,000) in each quintile. Because school districts vary considerably in size, Dr. Kelly's five wealth quintiles do not contain the same number of districts. (Tr. at 1485-86.) As Dr. Kelly acknowledged, SDP has about 140,000 students, thereby accounting for approximately 40% of the students in quintile 5, which is the poorest quintile. (Tr. at 1488-89, 1494-95.) Dr. Kelly admitted that because students attending SDP comprised 40% of the poorest quintile, the results for that quintile could be skewed. For instance, without SDP being included in quintile 5, the graduation rates for the quintile would likely be higher. (Tr. at 1488-89, 1494.)

1878. Dr. Kelly also checked his calculations by using an alternative wealth measure embedded in the Fair Funding Formula: local capacity per weighted student. In doing so, he found no discernible change in the patterns he had observed using the Aid Ratio. (Tr. at 1186-90, 1192-93.)

1879. Based upon his analysis of the five quintiles into which he grouped students, Dr. Kelly credibly opined there is substantial consensus that increased school funding has a positive causal impact on student outcomes. (Tr. at 1142-43, 1224-25, 1219-20.)

1880. Dr. Kelly also examined the funding in relation to the relative need of school districts and explained it is important to adjust for student and district characteristics when comparing funding figures, which the Court credits. (Tr. at 1163-65.)

1881. To examine relative student need, Dr. Kelly used the weighted student calculations from the Fair Funding Formula. Dr. Kelly testified these need-adjusted pupil counts are reported regularly by the state as “weighted students,” including in a figure published each year termed “current expenditures per weighted student.” (Tr. at 1196-97.)

1882. Because the Commonwealth measures a district's tax effort through what is known as an equalized mill, which measures the local taxes paid on \$1,000 of market variation, Dr. Kelly primarily used equalized mills to study the relative tax efforts of each school district. This was done to account for variations in assessment practices between counties. (Tr. at 1158-59.)

1883. Dr. Kelly found a substantial variation in both components of the Aid Ratio: property wealth and income wealth. Using the Reading School District (Reading) and Lower Merion School District (Lower Merion) to illustrate, Dr. Kelly credibly explained that districts across the Commonwealth, which tax their residents at the same equalized millage rate, can generate significantly different amounts of revenue on a per pupil basis. (Tr. at 1153-54, 1156-57, 1159, 14504-05.) By comparing North Penn School District with Williams Valley School District, Dr. Kelly showed that even using a lower level of tax effort, some school districts can raise significantly higher local revenues than other districts. (Tr. at 1159.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

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1884. Examining Petitioner Shenandoah Valley and the New Hope-Solebury School District, a high-wealth school district, Dr. Kelly showed that if both districts taxed their residents at 19.1 equalized mills (the state mean for 2018-19), Shenandoah would generate \$3,396 per Weighted Average Daily Membership (WADM),⁶³ while New Hope-Solebury would generate 6 times more, at \$20,851 per WADM. Dr. Kelly testified that the disparity in wealth between the districts is so great that even if Shenandoah Valley taxed its residents at the highest millage rate in the state, and New Hope-Solebury taxed itself at the lowest, New Hope-Solebury would still generate about three times more revenue per WADM. (Tr. at 1163.)

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(PD-00003-0010.)

1885. Moreover, Dr. Kelly credibly testified that when measured by equalized mills, low-wealth Pennsylvania districts have substantially higher tax rates than high-wealth Pennsylvania school districts even though the poorest Pennsylvania school districts also have the greatest percentage of high-need students. (Tr. at 1195-96, 1249.)

1886. Dr. Kelly explained that according to the need metrics embedded in the Fair Funding Formula, the student body of the poorest quintile of Pennsylvania districts has a need for 38% additional funding, while the student body of the wealthiest quintile of districts has a need for only 11% additional funding. Dr. Kelly stated this pattern is consistent across wealth quintiles. (Tr. at 1195-96.)

1887. Dr. Kelly credibly testified Pennsylvania has one of the largest gaps of any state in the country in per

child spending between the Commonwealth's poorest and wealthiest districts. (Tr. at 1147.) For example, Dr. Kelly opined that the poorest quintile of school districts has approximately \$7,800 less per need-adjusted student. That is, the poorest quintile of districts has a revenue of \$12,118 per weighted student, while the wealthiest quintile has a revenue of \$19,985 per weighed student. (Tr. at 1196, 1198.)

1888. Dr. Kelly further opined the poorest quintiles spend the least per need adjusted pupil even when cost of living adjustments are made among different regions and even though, as was demonstrated with a comparison of Lower Merion and Reading, low wealth communities tax themselves at higher rates than high wealth communities. (Tr. at 1198, 1203.)

1889. Thus, Dr. Kelly credibly explained that for low-wealth districts in Pennsylvania, local fiscal control is largely an illusion because these districts generally have substantially higher tax rates than high-wealth districts. (Tr. at 1249.)

*207 1890. Dr. Kelly emphasized that failing to take weight-adjusted need into account provides an incomplete picture of school funding, which the Court credits. For instance, Marple Newtown School District (Marple Newtown), a high wealth district in the same county as William Penn, generates \$10,000 more revenue per need-adjusted pupil, even though William Penn's equalized millage rate is more than double Marple Newtown's, as illustrated by the table below. (Tr. at 1200-01, 1204-06.)

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(PD-00003-0027.)

1891. Even when student need is not considered and a non-need adjusted student count is used, Dr. Kelly testified the same patterns emerge, with the highest wealth districts receiving more revenues and making greater expenditures. Dr. Kelly testified that the wealthiest districts (\$21,803) had approximately \$4,850 more in per-student funding than the poorest districts (\$16,955). (PD-00003-0025; Tr. at 1200-02.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1892. Dr. Kelly also testified about the Costing Out Study conducted by APA. Pursuant to the requirements of the State Board, APA's stated goal was for all Pennsylvania's schools to reach 100% proficiency on state standards by 2014; however, Dr. Kelly could not identify a specific state in which 100% of students achieved proficiency on standardized tests. Dr. Kelly further explained that APA did not calculate its base per-pupil cost for providing students with an adequate education based on school districts who were achieving 100% proficiency. (Tr. at 1315.) Dr. Kelly also testified that the Commonwealth adopted much of the Costing Out Study when it enacted Section 2502.48 of the School Code, including several of the calculations generated by the Costing Out Study and the methodology for setting adequacy targets for each district. (Tr. at 1174.) According to Dr. Kelly, the adequacy target used the Costing Out Study's \$8,003 base amount, adjusted for inflation using the Act 1 Base Index, a Pennsylvania-specific inflation index related to educational costs in the Commonwealth. (Tr. at 1182-83, 14496-97.)

1893. In addition, Dr. Kelly testified that Section 2502.48 of the School Code also required the Commonwealth to compare that adequacy target with the amount of actual spending in a district to generate a number known as the "adequacy shortfall," or how much less school districts have than they need. (Tr. at 1174.) While the Costing Out Study recommended that if additional revenues were needed to improve student performance those funds should be collected at the state level and allocated by the state through a formula that is sensitive to the needs and wealth of school districts, Dr. Kelly testified that the General Assembly did not follow this recommendation. Instead, Dr. Kelly explained the General Assembly established state targets equaling approximately 50% of a district's funding shortfall, without determining whether districts could raise the remaining funds. (Tr. at 1178.)

1894. According to Dr. Kelly, in 2010-11, when the Department calculated this adequacy shortfall for the final time, school districts had a collective adequacy shortfall of \$4.5 billion, with an outstanding state target of \$2.4 billion. (Tr. at 1176-78.)

1895. Because the Department has not published adequacy shortfalls since 2010-11, Dr. Kelly testified that he updated Section 2502.48's adequacy calculations with the most currently available data—the 2018-19 school year (when his

initial report was authored) and the 2019-20 school year (when his report was updated prior to trial). (Tr. at 1176, 1179.) For 2018-19, those calculations demonstrate that 428 of the Commonwealth's school districts, representing 86% of the Commonwealth's students, have an adequacy shortfall, and this shortfall totals \$4.6 billion. (Tr. at 1177-79.)

***208** 1896. Dr. Kelly acknowledged his adequacy shortfall calculations were computed with respect to all sources of revenue for public schools. For instance, with respect to his primary opinion of a \$4.6 billion per year adequacy shortfall, Dr. Kelly assessed the Commonwealth's share of that shortfall as \$2.6 billion in 2018-19. As Dr. Kelly admitted, however, even if Pennsylvania were to contribute an additional \$2.6 billion per year, his own calculations would still leave a \$2 billion annual shortfall that would need to come from other sources, such as the federal government or local school districts. (Tr. at 1321-22.)

1897. Dr. Kelly's adequacy target and adequacy shortfall calculations were derived by updating the calculations under Section 2502.48 of the School Code, which emanate from the Costing Out Study. (Tr. at 1308-09.) Dr. Kelly testified that he did not attempt to independently assess the accuracy or validity of the numbers or calculations that were used in the Costing Out Study. As he acknowledged, he did not have access to the kind of research team and resources that he would need to conduct a costing out study. (Tr. at 1310-11.) Nor has Dr. Kelly performed a costing out study or been engaged by a state to examine or make recommendations with respect to their school finance systems. (Tr. at 1311.)

1898. Dr. Kelly's total shortfall calculation was derived from adding the alleged adequacy shortfalls that he had computed for each school district in Pennsylvania. (Tr. at 1176-78.) In reaching his shortfall figures for each school district, Dr. Kelly: (1) did not speak to school district officials in the state to determine the resources that those officials think they need or want; (2) did not conduct an individualized analysis of the educational opportunities that exist in each district; and (3) did not investigate the educational results in any of the state's school districts. (Tr. at 1343, 1360.) Dr. Kelly testified that, pursuant to Section 2502.48, the Department used the Act 1 Base Index to adjust the base cost for inflation when it made adequacy calculations and, therefore, he followed the same procedure in his calculations. (Tr. at 1182-83.) Dr. Kelly posited the state's Act 1 Base Index was the appropriate

William Penn School District; Panther Valley School..., Not Reported in Atl....

measure of inflation. (Tr. at 14494, 14497-98.) He explained that unlike an alternative inflation adjustment measure like the Consumer Price Index-Urban (CPI-U), which measures the rising costs of things such as alcohol and cigarettes, the Act 1 Base Index looks at the inflation of two specific factors related to the wages of school district employees. (Tr. at 14494, 14497-98.) For this reason, Dr. Kelly testified the Act 1 Base Index constitutes a measure of inflation specific to education in the Commonwealth. (Tr. at 14493-95.) However, Dr. Kelly found that even when using the CPI-U, which is favored by Legislative Respondents, the adequacy shortfall remained over \$4 billion, with over 400 school districts not receiving adequate funding. (Tr. at 1182.) When asked about the CPI-U's effect on the calculation of Pennsylvania's overall education funding between 2012 and 2022, Dr. Kelly acknowledged that using the CPI-U index, rather than the Act 1 Base Index, would result in a greater inflation-adjusted increase in state funding. (Tr. at 14542.)

1899. Moreover, Dr. Kelly explained that like Section 2502.48, the Fair Funding Formula has its own weights accounting for poverty and ELL students. (Tr. at 1166-68.) Dr. Kelly, therefore, ran the analysis in a third manner, by replacing Section 2502.48's weights with the weights from the Fair Funding Formula and found generally consistent results, in which the adequacy shortfall increased to \$4.8 billion, and 413 school districts did not receive adequate funding. (PD-00003-0018.) In sum, Dr. Kelly testified that each of his methods found shortfalls exceeding \$4 billion. (Tr. at 1180.)

*209 1900. Dr. Kelly testified the \$4 billion shortfall may underestimate what constitutes sufficient funding for schools for three reasons. First, the School Code's calculation does not take into account increases in mandated costs that school districts have become responsible for bearing since the Costing Out Study was completed. (Tr. at 1183-84.) By way of one example, pension expenses increased from approximately 2% of districts' total expenses in 2008-09 to 14% in 2018-19. (Tr. at 1184.) In real dollars, this means school districts themselves are responsible for an additional \$1.1 billion in unreimbursed pension costs compared to when the Costing Out Study was conducted. (Tr. at 1268.) Second, Dr. Kelly explained the School Code's calculation does not factor in a district's needs in areas such as special education, facilities, or transportation. (Tr. at 1184-85.) Third, Dr. Kelly testified the School Code's calculation reflects the costs necessary to meet an earlier state standard—high school graduation—whereas

the Commonwealth's stated goal is now college and career readiness, with more rigorous standards and assessments. (Tr. at 1185-86.)

1901. Dr. Kelly updated his report with his 2019-20 data, and the numbers remained consistent. In his opinion, school districts are in the aggregate underfunded by \$4.6 billion. (PD-00003-0100.)

1902. Dr. Kelly opined that the inadequacy and inequity of Pennsylvania's funding system is not felt evenly as low-wealth districts disproportionately suffer from both adequacy and equity shortfalls. (Tr. at 1186, 1261-62.) Dr. Kelly explained his analysis, as the below table illustrates, that as of 2019-20, the poorest quintile districts lose \$772 million a year as a result of the BEF hold harmless provision, and \$105 million as a result of the Special Education Funding hold harmless provision, shortfalls that are multiple times greater than any other wealth quintile. (Tr. at 1261-62; PD-00003-0100.) Dr. Kelly further opined the adequacy shortfall in the poorest quintile of districts is over \$2.04 billion, or more than 11 times the adequacy shortfall in the wealthiest quintile, and those adequacy shortfalls are consistent over time.

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1903. Dr. Kelly also produced district-by-district shortfalls for the entire Commonwealth. (See PD-00003-0107-0128.) Given the above, including the state's own adoption of adequacy targets and calculations of those targets for three years, Dr. Kelly testified that his estimates of adequacy shortfalls in PD-00003-0107 through PD-00003-0128—based exclusively on the Commonwealth's only attempt to measure adequate funding—are a reasonable, if conservative, estimation of the minimum amount of additional general education funds school districts need to provide all their students a meaningful opportunity to meet state standards, become college and career ready, and succeed as productive citizens. According to Dr. Kelly's analysis, Petitioner Districts and SDP suffer from adequacy and equity shortfalls. In

William Penn School District; Panther Valley School..., Not Reported in Atl....

nominal dollars, he finds only Lancaster's shortfall — which remains at \$48 million — has lessened. According to Dr. Kelly, Greater Johnstown's shortfall has largely remained constant, while SDP's and every other Petitioner District's has grown, as illustrated below. (Tr. at 1261-62.)

2019-20 Adequacy School District (2502.48 calculated by PDE)	Adequacy Shortfall	2010-11 Shortfall (2502.48 calculated by Kelly)
Greater Johnstown SD	\$14,578,342.01	\$14,940,834.00
Panther Valley SD	\$10,054,053.02	\$15,880,744.00
William Penn SD	\$21,836,792.06	\$38,840,685.00
Lancaster SD	\$47,775,097.00	\$53,331,324.25
Wilkes-Barre Area SD	\$21,870,970.77	\$33,586,603.00
Shenandoah Valley SD	\$8,207,953.00	\$7,069,556.60
Philadelphia City SD	\$943,541,462.95	\$1,142,556,189.00

(PX-01904, Column N; *see* PD-00003-0045.)

1904. Most of Dr. Kelly's analyses did not look at actual school district revenues and expenditures, but rather focused on needs-adjusted revenues and expenditures. In conducting his needs-adjusted revenue and expenditures analyses, Dr. Kelly employed a variety of formulas, which produced varied results, to ensure that the patterns were consistent, which they were. (Tr. at 1419-20.) Only one of Dr. Kelly's calculations examined the relationship between school district wealth and non-adjusted revenues or expenditures. Dr. Kelly acknowledged that when looking at spending quintiles by actual—as opposed to adjusted—spending, there are significant differences with regard to which districts would be in the lowest versus highest quintiles, although he clarified that the quintiles were also weighted by enrollment, so that each quintile had roughly the same number of students, to prevent comparing districts with 200,000 students with 200 students. (Tr. at 1477-78.) Dr. Kelly also acknowledged that his report did not identify all of the school districts and which were in each of the quintiles that he created and analyzed, under either the adjusted or non-adjusted approach, although

he did include where Petitioner Districts fell. (Tr. at 1489-91.) Dr. Kelly acknowledged that school districts with higher needs receive more state funds than school districts with lower needs, but he cautioned that there is “broader context in terms of adequacy.” (Tr. at 1440–41.) However, he conducted no analysis to demonstrate the extent to which Pennsylvania's funding formula has benefited lower wealth districts.

*210 1905. A primary purpose of Dr. Kelly's expert analysis was to calculate what he characterized as the Commonwealth's “Adequacy Target, Adequacy Shortfall, and State Funding Target.” Dr. Kelly opined that the adequacy shortfall to Pennsylvania's school districts is approximately \$4.6 billion per year. (Tr. at 1177-78.) However, his adequacy shortfall calculations varied significantly, depending on which of his alternate measurements and data he used. Indeed, as Dr. Kelly acknowledged, his alternative calculations of the purported adequacy shortfall varied by as much as \$1.6 billion per school year. (Tr. at 1321.) Dr. Kelly stated that the reason he replicated and updated the adequacy target, state funding target, and shortfall calculations set forth in Section 2502.48 is that he believed those calculations are legally required, and he further opined that the level of education funding is inadequate under state law. (Tr. at 1177-78, 1299-1300.) However, as he admitted, he “is not a legal scholar.” (Tr. at 1300.)

1906. While this Court agrees with the salient concept Dr. Kelly espoused, that school districts need more resources, and that the inadequacy and inequity of Pennsylvania's funding system is not felt evenly as low-wealth districts disproportionately suffer from both adequacy and equity shortfalls, the Court is not convinced that the adequacy shortfalls derived from the Costing Out Study definitively measure the amount of revenue districts throughout the Commonwealth will need in the future to provide each student a thorough and efficient education.

1907. Dr. Kelly also determined the methodology of “hold harmless” leads to irrational results because only the additional money distributed since Act 35 was passed is distributed through the weights of the Fair Funding Formula. (Tr. at 1191-92.) Practically speaking, Dr. Kelly explained this means that the vast majority of BEF is not distributed according to the relative needs identified by the Fair Funding Formula. (Tr. at 1191.) Absent a change in law, hold harmless is permanent. While other states may have a phase-in

William Penn School District; Panther Valley School..., Not Reported in Atl....

provision for a new funding allocation, Dr. Kelly opined that the use of a hold harmless which keeps the vast majority of funds from changing hands in perpetuity makes Pennsylvania “quite unusual” and “an outlier.” (Tr. at 1252-53, 1539-40.)

1908. In practical terms, Dr. Kelly stated that hold harmless means most funding distributed by the state is not distributed based on current school district or student factors, but instead on the past demographics of a school district. (LR-00509-00068; Tr. at 1191-92.) The result is that school districts with the same needs receive greatly different amounts of funding. To illustrate the point, Dr. Kelly identified districts that are similar under the Fair Funding Formula, but whose allocations of BEF differed by millions of dollars. For example, Dr. Kelly opined that the Laurel Highlands School District and Aliquippa School District should receive funding within approximately \$1,200 of each other. However, because of hold harmless, the difference in BEF received between those two districts is more than \$5 million dollars. (Tr. at 1251-52.) As a result, Dr. Kelly opined those districts with higher student needs today are surely negatively impacted by keeping hold harmless in place. (Tr. at 1261-62.)

1909. If the hold harmless principle were no longer applied and all the money were allocated pursuant to the Fair Funding Formula, Dr. Kelly opined that about a billion dollars of funding would transfer from district to district. (Tr. at 1250-51.) As Dr. Kelly testified, however, ending hold harmless “harms” districts in this manner only because Pennsylvania inadequately funds its schools in the first instance, forcing them to compete with each other for a finite and insufficient amount of funding: “The issue is that the pie is too small for adequacy. If the funding was adequate, it wouldn't be this zero sum ga[me].” (Tr. at 1538-39.)

*211 1910. Dr. Kelly testified extensively regarding the impact of charter schools on funding. Dr. Kelly credibly explained there is not a one-for-one tradeoff in costs when a student enrolls in a charter school because not all the district's expenses associated with educating a student are erased when a student attends a charter school. (Tr. at 1268-69.)

1911. Dr. Kelly also credibly explained the effect pension costs have had on educational spending in the Commonwealth. On a statewide basis, pension increases greatly outstripped any increases to BEF and nearly equaled every inflation-adjusted dollar appropriated to the state's

education line item (including things such as public libraries) over similar periods of time. (Tr. at 1267-68, 1275.) On cross-examination, Dr. Kelly agreed these costs were a necessary expense and that between the 2008-09 school year and the 2018-19 school year, retirement costs have increased by \$3.3 billion in real dollars, of which the State's share has increased by \$1.9 billion, which is more than 50% of the increased cost. (Tr. at 1501-04.) Dr. Kelly did not analyze the percentage increase of state teacher retirement funding that the Petitioner Districts received during that same time frame. (Tr. at 1503-04.)

1912. Over Respondents' objection on the basis that “this is a case about wealth and not a case about race or ethnicity discrimination,” which was overruled,⁶⁴ Dr. Kelly credibly testified regarding the extent to which Black and Hispanic children are impacted by underfunding. Dr. Kelly explained that almost 1 in every 2 Black students attends a school in the poorest quintile of districts, while 14% attend schools in the highest quintile districts. Similarly, 40% of Hispanic students attend school in the poorest quintile of districts, while only 11% attend schools in the wealthiest quintile. (Tr. at 1288-89.)

1913. As he did with wealth, Dr. Kelly organized school districts into quintiles to compare districts based on their percentage of Black and Hispanic students. He found that across each measure of inadequacy or inequity, Black and Hispanic students were disproportionately impacted. (Tr. at 1290-91.) Dr. Kelly found that Black and Hispanic students are disproportionately impacted by the BEF hold harmless: 80% of Black and Hispanic students are educated in a district that suffers from a BEF equity shortfall. (Tr. at 1289-91.) Moreover, according to Dr. Kelly, the districts educating the highest percentages of Black and Hispanic students have an aggregate equity shortfall that is \$805 million larger than the districts educating the fewest Black and Hispanic students. (Tr. at 1291.)

1914. Dr. Kelly also found that Black and Hispanic students are disproportionately impacted by Special Education Funding hold harmless, with 74% of Black and Hispanic students attending school in a district that suffers from a Special Education Funding equity shortfall. (Tr. at 1289-90.) Moreover, the special education funding shortfall for districts educating the highest percentages of Black and Hispanic students is \$106 million higher than the shortfall for the

William Penn School District; Panther Valley School..., Not Reported in Atl....

districts educating the fewest Black and Hispanic students. (Tr. at 1291.)

*212 1915. Finally, Dr. Kelly found that the schools educating more Black and Hispanic students are far more underfunded than other schools. Specifically, Dr. Kelly opined the adequacy shortfall for districts in the quintile with the highest percentage of Black and Hispanic students is \$1.4 billion higher than the shortfall for the quintile with the fewest Black and Hispanic students. (Tr. at 1291.) Similar to Dr. Kelly's opinion about adequacy shortfalls in general, (*see* FOF ¶ 1906), the Court agrees with the overarching principle that such shortfalls exist but is not convinced of the specific amounts to which he testified.

1916. As set forth in the following findings, when questioned about which students are best meeting state standards, Dr. Kelly credibly testified the students in the poorest quintile districts, as well as subgroups of those students, are meeting state standards at a lower rate across a range of different measures (*e.g.*, proficiency, graduation, postsecondary attainment, college-and-career readiness, etc.) than their peers in higher wealth districts, which are able to spend more per student. For example, Dr. Kelly testified that students in the lowest wealth districts score on average 31 percentage points lower on the mathematics and algebra portion of the state's PSSA and Keystone Exams than students in the highest wealth districts, 24 percentage points lower in science and biology, and 28 percentage points lower in ELA and literature. This pattern remains consistent for five-year graduation rates. (Tr. at 1240.) He testified that students who drop out of school are disproportionately concentrated in the lowest wealth districts. (Tr. at 1245.)

1917. Dr. Kelly further testified that economically-disadvantaged students in the highest wealth quintile districts perform better than economically-disadvantaged students in the lowest wealth quintiles. In other words, a student from a low-income family in Pennsylvania who attends school in one of the wealthiest districts is, on average, able to reach state standards at a higher rate than low-income students attending school in one of the poorest quintile districts, which are also those with the greatest need and the least amount of funding. Dr. Kelly found the differences are significant: 62% of economically-disadvantaged students meet state ELA/literature standards in the wealthiest quintile compared to only 42.6% in the poorest, 43.1% meet math/

algebra standards in the wealthiest quintile compared to only 24.5% in the poorest, and 67.2% meet science/biology standards in the wealthiest compared to only 51% in the poorest. (Tr. at 1227.) Dr. Kelly testified that this holds true across quintiles, with economically-disadvantaged students performing better on state standardized tests in schools that fall into wealthier quintiles: essentially, the performance of economically-disadvantaged students improves at every wealth quintile. (Tr. at 1228.)

1918. Dr. Kelly found that economically-disadvantaged students in districts in the highest need-adjusted expenditure quintile (*i.e.*, those spending the most relative to their needs) perform substantially better on Commonwealth standardized tests than economically-disadvantaged students attending schools in the lowest need-adjusted expenditure quintile. (Tr. at 1230-31.)

1919. The same pattern holds true for the Petitioner Districts. Dr. Kelly testified that, based on 2018-19 data, when compared to economically-disadvantaged students in the wealthiest quintile districts, economically-disadvantaged students in Petitioner Districts have between 21%-32% worse performance rates in mathematics and algebra, 16%-34% worse in science and biology, and 18%-31% worse in ELA and literature. (Tr. at 1228-30.)

*213 1920. Dr. Kelly also found historically underperforming students⁶⁵ attending schools in low-wealth districts meet state standards at a substantially lower rate than historically underperforming students who attend schools in wealthier districts, which spend more. (Tr. at 1231-33.)

1921. On cross-examination, Dr. Kelly testified that in reaching his opinions, he did not attempt to determine whether there were low spending, high performing districts that were meeting the state's proficiency standards. (Tr. at 1320.) Similarly, Dr. Kelly did not estimate the dollar amount that it would take any particular school district to raise its students' performance on standardized tests to specific levels of proficiency. (Tr. at 1378-79.)

1922. Dr. Kelly testified that the effects of economic disadvantage in Commonwealth schools extend beyond high school graduation. He found economically-disadvantaged students who graduate school in a wealthier quintile district

William Penn School District; Panther Valley School..., Not Reported in Atl....

go on to graduate college within six years at substantially higher rates than economically-disadvantaged students who attend the poorest quintile districts. (Tr. at 1243-44.)

1923. In addition to assessment results, high school graduation results, and postsecondary outcomes, the Future Ready PA Index includes other measures, such as the rate at which students who are designated ELL are making progress. (Tr. at 1233-35.) Dr. Kelly again found “large and substantial gaps” in the rate of success on these measures between high-wealth and low-wealth districts. (Tr. at 1235.)

1924. According to Dr. Kelly's analysis, five-year high school graduation rates ranged from 88.2% in quintile 5, the poorest districts, to 96.0% in quintile 1, the wealthiest districts. (PD-00003-0040.)

1925. According to Dr. Kelly's analysis, in the poorest quintile, the “Postsecondary Transition to School, Military, or Work” indicator is approximately 77.6%. The percentage of students making a postsecondary transition to school, work or the military was 88.8% for quintile 1. (PD-00003-0040.)

1926. The college and career standard with the most pronounced correlation to wealth, according to Dr. Kelly's analysis, is transition to postsecondary education, in which 78.4% of students in quintile 1 transitioned to postsecondary education, compared to 52.1% in quintile 5. (PD-00003-0040.)

1927. Also, according to Dr. Kelly, lower wealth school districts have lower levels of regular attendance by 13 to 16 percentage points. (PD-00003-0072, 0089.)

1928. According to Dr. Kelly's analysis, there is also a gap between students enrolled in rigorous courses of study in the poorest quintile compared to those in the wealthiest quintile. (Tr. at 1237.)

1929. Dr. Kelly credibly testified that funding affects students who attend charter schools as well, noting that, by some broad measures, charter schools and district schools do not perform substantially differently on state outcomes. (Tr. at 1269-70.) By other measures, however, Dr. Kelly found charter schools perform much worse. For example, when looking specifically at the performance of economically-disadvantaged students, Dr. Kelly testified that charter schools, especially cyber

charter schools, perform significantly worse than traditional public schools. (Tr. at 1270-71.) Dr. Kelly explained that charter schools are more heavily concentrated in poor communities; yet, even when comparing charter performance to districts with concentrated poverty — those districts with 30% or more economically-disadvantaged students — public school districts outperform both brick-and-mortar and cyber charter schools. (Tr. at 1271.)

*214 1930. In his rebuttal report and testimony, when questioned regarding the findings of Legislative Respondents' witness Mr. Willis, comparing the Pennsylvania education system to “peer states” positively, Dr. Kelly explained he did not find the states Mr. Willis had used as peers for comparison with Pennsylvania to be appropriate because New Jersey, which shares a border and labor markets with Pennsylvania and has teachers commuting on both sides of the border, was absent from his list. Dr. Kelly testified that even the regional measure of inflation that Mr. Willis used was shared between New Jersey and Pennsylvania. (Tr. at 14502.) Mr. Willis stated that, using an “inclusion/exclusion criteria,” he had excluded New Jersey because its percentage of population living in urban areas differed significantly from that of Pennsylvania; however, Dr. Kelly opined that this was not a credible justification because Pennsylvania and New Jersey were closer by that measure than Pennsylvania and Arkansas, and yet Arkansas was included in Mr. Willis's analysis. (Tr. at 14502-03.) Dr. Kelly testified that Mr. Willis's peer selection lacked a systematic rationale, such that if one consistently applied his three-step process to each state, every single “peer” would be eliminated. In other words, states were included in one step, despite the fact that they should have been excluded in another. Dr. Kelly opined that, “it was not systematic and it was contradictory.” (Tr. at 14499-500.)

1931. Dr. Kelly further testified that Mr. Willis also erred in his “vertical equity analysis,” which resulted in Mr. Willis finding that the highest need schools in Pennsylvania spent more than its lowest need schools, because Mr. Willis left charter school students, but not the funds paid to charter schools for those students, out of the calculation. Dr. Kelly found Mr. Willis's error did not simply shift relative spending upward across the board — it disproportionately inflated the per student numbers for the highest need districts. (Tr. at 14483-84.) Dr. Kelly testified that poor districts in Pennsylvania have far more charter students and, therefore, failing to account for charter school students does not inflate

William Penn School District; Panther Valley School..., Not Reported in Atl....

per-pupil revenues evenly, because high-poverty schools are disproportionately responsible for charter school students. (Tr. at 14479, 14490.) Instead, it will in particular “make high-poverty, high-need districts appear like they have more funding per-pupil than they actually do.” (Tr. at 14490-91.) This Court finds Dr. Kelly's opinion credible that Mr. Willis's error “cause[d] him to misrepresent the funding levels for high-need districts and essentially invert patterns that we can see clearly in AFR data.” (Tr. at 14486-87.)

1932. Dr. Kelly also found flaws in the methodology of Legislative Respondents' expert, Dr. Abel Koury. Dr. Kelly opined that Dr. Koury's report rested upon a fundamental flaw:

Dr. Koury, in examining this relationship between AGI and a school district's funding, assumed that AGI, itself, represents growth, and that differences between districts would be representing differences in growth that he would then examine relative to funding to draw conclusions about the relationship between student growth and education funding in the Commonwealth.

The problem is that AGI is not a measure of growth, and so ... the premise, the assumption of the analysis is that this is a growth measure. It's not, so it's not valid.

(Tr. at 14523-24.)

1933. In Dr. Kelly's opinion, this reveals that Dr. Koury was attempting to find a relationship that the very model he relies upon should be eliminating:

[Y]ou're trying to essentially isolate and examine just the impact of a teacher's effectiveness in a given year. And you've essentially taken out of what you come up with all the other factors, right, that would impact a student's achievement, except for the effectiveness of that teacher.

And so if a student is in a chronically underfunded district and that's where these models are taking that out, and so if you're looking at the results and underfunding has already been taken out, you wouldn't expect to see it.

(Tr. at 14530-31.)

1934. Dr. Kelly testified that those districts that have the highest need level have the largest weighted adjustment and so they would be impacted at the highest rate. (Tr. at 14529.)

1935. Dr. Kelly explained, at its core, the PVAAS model is “trying to essentially isolate and examine just the impact of a teacher's effectiveness in a given year.” (Tr. at 14530.) Yet, Dr. Kelly opined that PVAAS scores show something different altogether: “extreme swings in the results.” Dr. Kelly explained that the AGI values, themselves, are very volatile and will differ from district to district and year to year in ways that raise very important questions about the reliability of those measures for an analysis of funding and its impact on student growth. (Tr. at 14519-20, 14517.) Dr. Kelly testified that the American Education Research Association, the American Statistical Association, and the American Association of Secondary School Principals expressed a similar concern regarding the volatility of PVAAS. (Tr. at 14522-23.)

*215 1936. Dr. Kelly illustrated his concerns with PVAAS further by breaking the Commonwealth's districts into quintiles by AGI scores and tracking their relative placement in those quintiles year after year. What he found was that school districts repeatedly changed whether they were among Pennsylvania's “best” or “worst” performing districts by AGI. (Tr. at 14520-22.)

1937. When Dr. Kelly examined districts that were in the bottom quintile one year, and the percentage of those districts that are in the bottom quintile again the following year, he found that the majority were no longer there. (Tr. at 14521.) When Dr. Kelly examined the AGI colors that districts had been assigned, he found they repeatedly changed from year to year. (Tr. at 14522.) Over the course of the time he studied, Dr. Kelly found 96% of districts changed their AGI color at least once in math, while 98% of districts changed their AGI color in ELA. (Tr. at 14522.)

1938. On cross-examination, Dr. Kelly admitted that he is not an expert in the field of value-added academic growth metrics, such as PVAAS. (Tr. at 14592.) Dr. Kelly also acknowledged that in his scholarly works, he does not discuss, or even mention, value-added growth metrics and outside of his rebuttal expert report in this case, Dr. Kelly had never previously researched value-added metrics. (Tr. at 14598, 14590.) Dr. Kelly admitted that when he conducted research

William Penn School District; Panther Valley School..., Not Reported in Atl....

for his rebuttal expert report in this case, he only reviewed articles in which the authors criticized the use of value-added metrics. (Tr. at 14606.) However, Dr. Kelly clarified that he considers himself “an expert in the organization of the state school funding system.” (Tr. at 14592.)

1939. In general, this Court finds Dr. Kelly's concerns with reliance on PVAAS and AGI in comparisons between districts and as correlated with funding valid, as they are supported by the testimony of former Deputy Secretary Stem and documentation by PVAAS. (See FOF ¶¶ 446-449.)

1940. Dr. Kelly also addressed the Census data upon which Legislative Respondents sought to rely on for their per-pupil expenditures and revenue for Pennsylvania students.⁶⁶ According to Dr. Kelly, the Census information is not reliable because it reports far higher per-student levels of expenditures and revenues for Pennsylvania than Pennsylvania itself reports. (Tr. at 14475.) For example, Dr. Kelly testified the Census reports that Pennsylvania's per-pupil revenue is \$20,434 for the 2017-18 fiscal year. (Tr. at 14466-67 (discussing U.S. Census Bureau, Summary Tables: Public Elementary-Secondary Education Finances: Fiscal Year 2018).) Yet, Dr. Kelly explained the Department reports per-ADM revenue for the same time period is \$17,622.37, a difference of roughly \$3,000 per student. (PX-02133; Tr. at 14475.)

1941. This Court finds Dr. Kelly's explanation as to why these differences exist to be credible. (Tr. at 14465-84.) First, Dr. Kelly testified the Census double-counts revenues that flow to charter schools, counting them once as they go to school districts and then again as they are passed through to charter schools, which results in the Census over-reporting Pennsylvania's total revenues. (Tr. at 14465-66.) Second, Dr. Kelly explained the Census undercounts the total number of students for whom those funds are paid, by leaving charter students out of its denominator. (Tr. at 14478.) Because Pennsylvania school districts are fiscally responsible for the charter school students who reside in their districts, the funds school districts receive and expend are for both the students in their own schools, and also for those students residing in their districts who attend charter schools. (Tr. at 14468-69, 14474.)

*216 1942. By way of example, Dr. Kelly explained that the Census data used to calculate per-pupil revenue

for 2017-18 reflected that there were 1,570,061 students enrolled in Pennsylvania public schools, when there were over 1.7 million students. (Tr. at 14470-71.) Dr. Kelly further explained that in the denominator of its per-pupil figure, the Census leaves out the charter school students that state funds are paying to educate, and this artificially inflates the figure. (Tr. 14477-78.) For instance, according to Dr. Kelly, in the 2017-18 school year, SDP was fiscally responsible for 203,016 students. (Tr. at 14480.) Rather than dividing SDP's revenues by 203,016 students to determine the district's per-student revenue, Dr. Kelly explained the Census divided by only 131,238, which represents just the students enrolled in district-run schools. (Tr. at 14881-82.) Accordingly, because the Census was missing in its denominator one-third of the students SDP pays to educate, while including the funding for the charter schools in its numerator, Dr. Kelly testified the Census calculated per-student funding in SDP as over \$26,000, when in actuality, on a per-student basis, SDP's revenues were only \$16,385 in 2017-18. (Tr. at 14880-84.) This Court finds Dr. Kelly credibly testified that these errors, combined, explain nearly all of the discrepancies between the Department's per-pupil revenue numbers and the Census numbers. (Tr. at 14555-56.)

1943. Although Petitioners identified inaccuracies in Census tables concerning per-student revenue, which result from failing to accurately account for charter students, Dr. Kelly testified that issue does not bear upon the overall distribution of state versus local funds on a non-per-student basis. (See Tr. at 1317-19.) Dr. Kelly explained that even if the per-student Census data offered by Legislative Respondents was accurate, it would be of limited value in evaluating Petitioners' claims because the Census has no adjustments for labor market costs or other data, and it is an aggregate figure, which does not reveal whether low-wealth districts are adequately or equitably funded. (Tr. at 1541.)

1944. Dr. Kelly acknowledged that even if Pennsylvania's per pupil spending numbers were revised downward to account for the alleged double counting, and the spending figures for every other state were left the same, Pennsylvania would still rank as the 15th highest spending state in the country in per-pupil spending on K-12 education. (Tr. at 14579.)

1945. Dr. Kelly also agreed that data from the National Center for Education Statistics (NCES), which is federal data coming from the Census of Government Finances, uses the correct

William Penn School District; Panther Valley School..., Not Reported in Atl....

Pennsylvania pupil enrollment count (*i.e.*, it appropriately accounts for charter school students) and indicates that, as of 2017-18, Pennsylvania's per-student expenditure on public education was about \$4,000 per student higher than the national average. (Tr. at 14557-60, 14478.) However, Dr. Kelly clarified that these comparisons were being made “without labor market adjustments, aggregates, and averages” and credibly explained that they “tell us nothing about how funds are distributed equitably or adequately across districts.” (Tr. at 14560.)

c. Steven Barnett

1946. Dr. Steven Barnett is the senior and founding codirector of the National Institute for Early Education Research and Board of Governors Professor of Education in the Graduate School of Education at Rutgers University. (Tr. at 4479, *see also* PX-04795-0032–0111.) Dr. Barnett holds a Ph.D. in field and labor economics and has been awarded grants and contracts totaling over \$100 million in his area of educational research. (Tr. at 4490, 4492.) Petitioners presented Dr. Barnett as an expert witness on the positive impact of high-quality, pre-K education on student achievement, as well as on college and career readiness.

1947. The Court finds Dr. Barnett credibly testified that Pennsylvania could improve the number of students who are college and career ready by improving the quality of, and expanding the availability to, its pre-K programs, particularly for disadvantaged children, including children “who are from low-income families, whose parents have more limited educations, who have been subject to – to social discrimination, who have [a] home language other than English[.], . . . children who've suffered trauma and stress – emotional distress . . . , and . . . children who have developmental delays and disabilities,” and that such improvements would be cost-effective for Pennsylvania. (Tr. at 4498-99.)

*217 1948. Dr. Barnett stated that in the 2019-20 school year, Pennsylvania provided approximately \$333 million in funding for pre-K programs, which represents a 12% increase from the previous year and ranks Pennsylvania 13th in the country in state spending per student on preschool programs. (Tr. at 4695-96.)

1949. Dr. Barnett spoke about pre-K opportunities in Pennsylvania, including Pre-K Counts. (*See* FOF ¶¶ 110-111.) He also testified specifically concerning Petitioner Districts. According to Dr. Barnett, as of the 2016-17 school year, 42% of 3-and 4-year-olds in the Greater Johnstown were enrolled in either Pre-K Counts or Head Start. (Tr. at 4698.) Other Petitioner Districts have similar percentages of participation: 31% at Lancaster, 37% at Panther Valley, 36% at Wilkes-Barre, and 43% at William Penn. (Tr. at 4698-99.) Dr. Barnett was unable to verify the percentage of those participating in Head Start or Pre-K Counts for Shenandoah Valley because the district sponsors its own preschool program for 4-year-olds living in the district. (Tr. at 4699.)

1950. In 2018, total government spending nationally, when combining Head Start and state-funded pre-K programs, was about \$20 billion. Nearly 3 million children were enrolled in these programs. (Tr. at 4680.)

1951. Dr. Barnett stressed that high-quality early education is critical because “the first five years of life are a time of rapid learning and development where children acquire foundational skills that help them succeed in kindergarten and the early grades but also provide a foundation for lifelong success in school and beyond.” (Tr. at 4510.) These foundational skills include language skills, cognitive skills, executive functions, emotional self-regulation, social-emotional skills, and physical development, which together create the “foundation for future learning and development.” (Tr. at 4510-11.)

1952. Dr. Barnett explained research demonstrates that access to high-quality preschool can have long-term benefits for children, including “very large cognitive gains prior to school entry, substantial achievement advantages . . . sustained throughout their educational career, increased high school graduation,” and higher rates of college attainment, in addition to higher career earnings, decreases in abuse and neglect, and decreased involvement in the criminal and juvenile justice systems. (Tr. at 4522-27.)

1953. Dr. Barnett testified there is nothing immutable “about a child being born into poverty that condemns that child to low achievement.” (Tr. at 4726.) He opined that “it's much easier to prevent and more cost-effective to prevent the children from falling far behind than it is to remediate the problem

William Penn School District; Panther Valley School..., Not Reported in Atl....

later.” (Tr. at 4514.) Dr. Barnett further testified research shows that the benefit-to-cost ratio of providing preschool programming is 10-to-1: meaning that every dollar invested yields \$10 in benefits. (Tr. at 4527-28.)

1954. Dr. Barnett asserted that early childhood education is also important for children living in poverty because it leads to significant and persistent increases in student achievement. For example, students in poverty generally have less exposure to “rich language interaction” in the home and fewer opportunities to develop fundamental verbal skills, necessitating assistance in school to close the “word gap in terms of children's own vocabulary.” (Tr. at 4605.)

*218 1955. From an outcomes perspective, by the time students in poverty enter kindergarten, they can be 12 to 18 months behind the average child. Achievement rankings by student income tend to change little between the ages of 5 and 18. Dr. Barnett acknowledged these effects are observed nationwide, not just in Pennsylvania. (Tr. at 4693-94.)

1956. Dr. Barnett testified that there are “very strong patterns by social and economic status, particularly for low-income children — but also, for example, children whose home language is not English ... where there are very large delays” in skills, learning, and knowledge levels by the time a child reaches kindergarten. He also acknowledged that “there's not one single path that every child is on, and some children move faster in some areas and slower in others so there's considerable variation.” (Tr. at 4512; *see also* Tr. at 4514-15.)

1957. Dr. Barnett stressed that high quality, early childhood education is key: “Substantial research [] shows that if we provide rich, early learning opportunities to children who otherwise would not have them in those first five years, we can substantially alter that pattern of beginning school far behind and staying behind.” (Tr. at 4513.) This research demonstrates that “even if we don't alleviate poverty directly ... preschool programs and other early interventions can increase achievement [and] decrease the relationship between poverty and achievement.” (Tr. at 4724.) Dr. Barnett further testified that the impacts of high-quality programs are long-reaching. For example, in New Jersey, a study of the effects of a two-year preschool program found that it cut the achievement gap on state assessment tests in 10th grade by between 30%–40%. (Tr. at 4534-36.) According to Dr. Barnett:

One of the primary reasons that researchers find that sometimes effects are not sustained is that the quality of education that children who attend preschool programs intended to address their disadvantages is too low – that their subsequent education quality is too low to support the gains.

So – strong educational programs are required in order to sustain the progress that children made closing those gaps.

(Tr. at 4565.)

1958. In 2021, Dr. Barnett co-authored a report studying the effects of New Jersey's Abbott preschool program on children's achievement, grade retention, and special education through 10th grade. (Tr. at 4594.) Dr. Barnett acknowledged that, in that report, he wrote “[a]lthough public investment in preschool programs has expanded for more than a half century, important questions remain about the long-term effects of large-scale public programs.” (Tr. at 4595.) Specifically, Dr. Barnett noted that researchers knew that “some programs produce long-term substantive effects on disadvantaged students and some programs produce long-term persistent effects for all children regardless of background,” and that there were “strong findings that the size of the persistent effects” are “associated with the dosage of the program,” but there was a question of how “low we can go” meaning “[i]s there a limit on how intensive a program it can be and still be cost effective.” (Tr. at 4595-96.)

1959. With respect to studies of large-scale public programs such as the Abbott program, Dr. Barnett agreed on cross-examination that he had written that “rigorous evaluations of large-scale public programs often find more modest initial effects, and sometimes, but not always, find little or no lasting effect.” (Tr. at 4599-600.) Dr. Barnett acknowledged on cross-examination that research studies on large-scale public pre-K programs have concluded that these programs often “have produced only weak and superficial initial effects on learning that do not lead to substantive long-term gains in achievement.” (Tr. at 4575-76.) However, Dr. Barnett clarified that results depended on the depth of the programs and whether they addressed the core competencies of the child, rather than just, for example, teaching simple literacy or numeracy skills; thus, the need for high-quality programs, rather than “poor quality childcare.” (Tr. at 4577-79.)

*219 1960. This is true of both state-funded pre-K programs and Head Start. With respect to Head Start, Dr. Barnett acknowledged on cross-examination that a study by the U.S. Department of Health indicated that the program did not “generate substantial persistent improvements in educational outcomes.” (Tr. at 4574-75.) Dr. Barnett clarified that he did not believe that this study found a “fade-out” of benefits, but that there “certainly [is] a catch-up with the control group with the children from preschool from the Head Start Program.” (Tr. at 4575.)

1961. As stated by Dr. Barnett in an article that he co-authored related to Head Start and the Tennessee pre-K program: “These two studies are far from alone, with other rigorous but non-experimental studies producing similarly disappointing results for the persistence of effects of public preschool programs on achievement.” (Tr. at 4625-26.) As Dr. Barnett explained in addressing a pre-K program in Boston, a lottery-based study found that the effects of the program for 4-year-olds “largely disappeared in follow up.” (Tr. at 4626.) However, Dr. Barnett clarified that when the average treatment effect for all of the children who participated is analyzed “there are, in fact, some modest long-term effects of the program” and stressed that “you can't just take this one sentence and understand the – Boston study.” (Tr. at 4627-29.) As he further stated:

I mean, part of the issue with taking these sentence by sentence out of context is, of course, science doesn't work that way. You have to look at the entire body of evidence together and -- and weigh how it fits. As -- you know, otherwise, you're looking at individual stones rather than, for example, a house. ... I'm saying you have to be specific about what it is you think, right, what it is you believe that you have proved has persistent effects, not a “this” or a preschool program, but specific kinds of programs for specific kinds of children in specific types of circumstances, which is what my entire report is about if you take it

together and not pull sentences out of context.

(Tr. at 4634-35.)

1962. Dr. Barnett indicated, on cross-examination, that student outcomes are also impacted by many personal, family, and community factors. (Tr. at 4693-94.) Dr. Barnett testified “both biological and environmental mechanisms can explain the erosion of initial gains, including the efforts and expenses of schools to remediate low levels of achievement.” (Tr. at 4576.) Moreover:

[E]arly differences in cognitive, academic, and social skills emerge from a complex set of family circumstances related to family income that include not only financial circumstances but parental education, family structure, and the conditions of the neighborhood. All of these contribute to learning and development with the parental capacity to combine their own time with resources to provide home experiences that support early learning, one particularly important aspect.

(Tr. at 4694.)

1963. Dr. Barnett found that early experiences and traumas can become embedded in children and set them on a certain trajectory of cognitive development. (Tr. at 4577-78.) Some examples of circumstances that can negatively impact children and student outcomes include a death in the family, incarceration of a parent, or loss of a parent's job. (Tr. at 4589-90.) In addition to parenting, neighborhood influences that can matter include exposure to environmental toxins, danger, violence, and emotional stress. (Tr. at 4694.) However, Dr. Barnett stressed that:

***220** Preschool can build resiliency in children even when they're experiencing adversity outside of the preschool. But too many of our children do not attend high-quality preschool and instead they're in poor-quality child care that itself may do damage to the child biologically. And if that becomes imbedded in the child's biology, then it has persistent outcomes.

Providing them high quality programs instead of the poor quality childcare can alter that dramatically.

(Tr. at 4580.)

1964. Dr. Barnett explained that a study of Pennsylvania's Pre-K Counts program, found that the program was associated with positive outcomes through the end of kindergarten in language and mathematics, the two "most important" domains, but that the program did not result in "positive effects on literacy, social-emotional development and self-regulation or executive function." (Tr. at 4550.) Dr. Barnett also testified the study found there was not an additional benefit for children who attend Pre-K Counts for two years starting at the age of three, versus students who attend the program for one year starting at the age of four. (Tr. at 4550.) However, Dr. Barnett pointed out that this was a shorter term study, focused only on the impacts of the program through kindergarten, and that the lack of positive outcomes for three-year-olds could be attributed to the implementation of the program because other studies revealed that two years of pre-K nearly doubled the effects of the program. (Tr. at 4550-51.) Dr. Barnett also discussed a study conducted by the National Institute for Child Health and Human Development, which analyzed the effects of pre-K on a broad selection of children across the country that was representative of the diversity of children in the United States. He stated this study found that pre-K could produce "positive benefits or even some negative effects, mostly very mild in either direction, depending on the quality; but that the sustained experience of high-quality early childhood care and education in the first five years for children in low-income families" was important. (Tr. at 4531.)

1965. Additionally, he explained that a study by the UpJohn Employment Institute found that the effectiveness of

most state-funded preschool programs on 4th grade NAEP scores is about zero; however, [the author of the study Tim Bartik] also finds that programs that were pre-identified as higher quality have substantial positive effects on 4th grade NAEP scores. He also finds that programs, generally, have positive effects on the 4th grade NAEP scores of African-American students and that these effects are even larger in the states identified as having higher-quality preschool programs.

(Tr. at 4530.) Dr. Barnett also agreed that Tennessee has a state-funded, voluntary, preschool program for 4-year-old children, which "offers a warning that positive effects cannot be presumed to persist in every case, as positive initial effects fade to zero and transition to small negative effects in follow-up through 3rd grade," which, he stated, was "an accurate representation of the results in Tennessee." (Tr. at 4574.)

1966. Dr. Barnett agreed that there is ongoing debate among experts "regarding the necessary characteristics of preschool programs and the additional conditions and context for persistent improvements in learning and development beyond kindergarten and the early grades." (Tr. at 4690.) Dr. Barnett agreed that additional research is required before any guarantees regarding a pre-K program's effectiveness may be made, and a program that was effective previously may not be successful going forward. (Tr. at 4687.) He clarified the preschool programs that have proved to be ineffective are "weak and superficial programs" which he does not recommend. (Tr. at 4688.)

***221** 1967. Dr. Barnett maintains that the large-scale, high-quality preschool programs he recommends that Pennsylvania adopt would be cost-effective. Because he does not know exactly what such programs would cost, he recommends a costing-out study. (Tr. at 4683.) Dr. Barnett has made recommendations about the types of preschool programs Pennsylvania should implement, and he disagreed

William Penn School District; Panther Valley School..., Not Reported in Atl....

that his opinions about the impact of those programs are based on “an educated guess;” his opinions are an “educated prediction” because it is known what type of programs succeed. (Tr. at 4683-84.)

1968. Dr. Barnett concluded that “there are policies that the State can implement both at the preschool and at the K-to-12 level that will make sure – that will decrease the impact of poverty on achievement.” (Tr. at 4726.) He further testified that he has recommended policies “to the State at both the preschool and elementary level [that] will reduce the relationship between poverty and achievement and educational attainment.” (Tr. at 4726.) The Court credits Dr. Barnett’s testimony.

d. Pedro Noguera

1969. Dr. Pedro Antonio Noguera testified as an expert witness for Petitioners. Dr. Noguera has over 30 years of teaching and research experience nationwide in the area of the sociology of education in school districts. He has written extensively on this topic in academic research articles and in several books. Having initially taught at the University of California Berkley, Dr. Noguera went on to teach at Harvard and New York Universities and UCLA. At the time of trial, Dr. Noguera was employed by the University of Southern California as the Dean of the Rossier School of Education and was qualified as an expert on education policy relating to the impact of poverty on learning and on strategies and interventions to improve educational outcomes for children experiencing poverty. He also was familiar with the literature in those fields and its applicability to the unique circumstances presented in Pennsylvania. (Tr. at 8219, 8245-46.) The Court credits Dr. Noguera’s testimony.

1970. Dr. Noguera testified that economically-disadvantaged students need additional supports and services to meet academic standards and become college and career ready, including ELL students, who are among the students more likely to live in poverty. (Tr. at 8261-62, 8379.)

1971. Dr. Noguera opined that children from impoverished households or those living in rural areas may need additional supports and services because they lack many necessary resources at home. (Tr. at 8247, 8265-66, 8378.) For example,

Dr. Noguera explained children living in poverty tend to have parents with lower education levels, making it more difficult to get help with homework or navigating educational systems, and rendering those children “more dependent upon their schools for those kinds of academic supports.” (Tr. at 8427.) He added that there may be fewer books in the home, which has an impact on reading and the development of literacy skills and makes it critical to have “well-stocked libraries and reading specialists” and “intensive support early on in a child’s education.” (Tr. at 8251, 8285-86, 8270-71.)

1972. Dr. Noguera opined that economically-disadvantaged students also may need social and emotional support in school as a result of trauma related to living in poverty. (Tr. at 8246, 8251.) Accordingly, Dr. Noguera asserted schools need to be able to provide resources such as well-trained counselors, school psychologists, and social workers in order to begin addressing these students’ learning needs. (Tr. at 8247, 8269-70.) Dr. Noguera testified there is broad consensus among educators, policymakers, and researchers that addressing students’ social, emotional, and psychological needs is vital to their success. (*See, e.g.*, Tr. at 8363-64, 8373-74.)

*222 1973. Dr. Noguera testified the evidence demonstrates that additional school resources can dramatically reduce disparities between low-income children and their more affluent peers. (Tr. at 8633, 8305-06.) Dr. Noguera explained it is well accepted in the field of educational policy that “with the right supports, schools can do a great deal to compensate for the effects of poverty” and in doing so, impact academic outcomes for economically-disadvantaged children. (Tr. at 8219, 8285-86, 8269-70.) Dr. Noguera stated that there may be different strategies needed between elementary and secondary schools, and particular strategies needed to serve large populations of immigrants or the unique challenges in rural districts. (Tr. at 8377-78.) For this reason, because underfunded schools often lack “the essential ingredients that are needed to promote student success, such as access to qualified teachers, the ability to introduce interventions that would address learning needs of students, ... counselors, ... early education” and other strategies that facilitate student achievement, Dr. Noguera explained that inadequate and inequitable school funding can negatively impact nearly every aspect of a student’s ability to succeed in life. (Tr. at 8307.) Dr. Noguera agreed with numerous other experts that “because of the cumulative nature of learning,

William Penn School District; Panther Valley School..., Not Reported in Atl....

investments need to be sustained throughout a student's education.” (Tr. at 8375-77.) Notwithstanding, Dr. Noguera also acknowledged “there are important questions that remain unanswered about the wisdom of large-scale investments in early childhood education,” but he indicated that these questions revolved around what constituted “high quality early childhood education” rather than the effects of such education. (Tr. at 8502.)

1974. Dr. Noguera's findings were in accord with several of Respondents' experts. For instance, Dr. Noguera agreed with President Pro Tempore's expert Dr. Hanushek that standardized test scores diagnose the strengths and weaknesses of students. (Tr. at 8605-06.) Dr. Noguera explained that test scores:

should be treated as indicators and in the same way we might treat blood pressure as an indicator of health; if we see the blood pressure is too high, too low, then a doctor should be prompted to further diagnosis to understand why. And I would say similarly, if the state is seeing scores low in a district, that should trigger a response from the state to inquire about why and what should be done to address the problem.

(Tr. at 8548-49.)

1975. To provide students with a quality education, Dr. Noguera said it is important for districts to retain their teaching staff. (Tr. at 8337.) Dr. Noguera explained that turnover negatively impacts students and undermines school performance because when districts invest resources into teachers, and then lose them, those resources become wasted. (Tr. at 8337.)

1976. Dr. Noguera also testified regarding the importance of having qualified teachers in every school district because a teacher's subject matter expertise is correlated with greater student success. (Tr. at 8334.) Dr. Noguera described how low-wealth schools cannot attract or afford qualified teachers and are forced to waive credentialing requirements and

provide teachers with emergency certifications just to ensure that there are individuals in the classroom. (Tr. at 8339-40.) However, while Dr. Noguera stated in his expert opinion that there are “a number of teachers in high poverty districts who are not certified in the subject that they are teaching,” he could not offer a “precise number” of improperly certified teachers in Pennsylvania, and he did not attempt to analyze the number of classes taught by uncertified teachers when preparing his expert opinion in this case. (Tr. at 8483-84.)

1977. Dr. Noguera stated professional development is important because “what the research shows ... [is] that when the skills of the teachers match the needs of the students they serve, outcomes increase. And bringing about that kind of alignment, I can say that other studies have shown us that this works; it's the best way to reduce disparities of student achievement.” (Tr. at 8336.) For example, Dr. Noguera stated that teachers working with students living in poverty need to be well trained in how to build strong, positive relationships with students and need to be equipped with a variety of pedagogical skills to meet the different learning skills of students. (Tr. at 8335-36.) However, Dr. Noguera acknowledged he had “not conducted research” into whether such relationships exist in Petitioner districts. (Tr. at 8486.) Similarly, Dr. Noguera did not analyze whether any of the Petitioner districts may already be employing some or all of the teaching strategies he endorsed. (Tr. at 8487.)

*223 1978. Dr. Noguera testified that social and emotional support services, which include access to psychologists and social workers, have a vital role in improving the academic outcomes of children living in poverty. Dr. Noguera stated that “[t]here are several studies that have shown that when school districts are able to provide access to social workers, that train professionals who are skilled at meeting the social and emotional needs of kids, that kids are more likely to attend school and their academic performance will improve.” (Tr. at 8363-64, 8373-74.) Dr. Noguera explained that the Department has acknowledged it is particularly important for schools serving students from low-income households, where each student often requires more support, to have an adequate number of counselors. According to Dr. Noguera, the recommended student-counselor ratio is 250:1, although many affluent districts have even lower ratios of 100:1. (Tr. at 8266-68.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1979. Dr. Noguera testified chronic absenteeism and other attendance problems also adversely affect educational outcomes. He explained that the Department has identified certain interventions to help in this regard, and research has demonstrated that when districts have professionals that can work with chronically absent students, they are able to increase attendance, especially in schools that serve high concentrations of students in poverty where attendance issues are more common. (Tr. at 8350-51.)

1980. Dr. Noguera opined that student achievement is closely aligned with appropriate class size. Dr. Noguera testified that reducing class size is generally recognized in the education policy field as a strategy to improve academic outcomes. (Tr. at 8344-45.) He noted that numerous studies show “particularly in critical subjects like reading and math, ... high class sizes result in lower achievement, and conversely, lower class sizes can raise student achievement.” (Tr. at 8345, 8572.) Dr. Noguera explained the individualized support that small classes make possible is particularly important for younger students adjusting to an academic setting and for students in poverty who have increased educational needs. (Tr. at 8345-46, 8627-28.) He added that research specifically demonstrates that reducing class sizes can strongly benefit economically-disadvantaged and minority students who are more likely to need individualized support. (Tr. at 8569-70, 8627-28.) In this regard, he testified that one of the most well-known studies on class size demonstrates months of student gain as a result of reducing class sizes from 22 students to 15 students. (Tr. at 8570-72.)

1981. Dr. Noguera agreed that there is no consensus as to whether class size can have a material impact on student learning. (Tr. at 8573.) However, he clarified:

[t]here's no consensus, but I would say that there are many variables that confirm findings, such as teacher quality. So if you lower class size, but there's no consistency in teacher efficacy, then that's obviously an important variable that I discuss in the report. So that's the reason why class size studies that only look at

the number of students in the class ultimately have mixed results.

(Tr. at 8574.) Dr. Noguera admitted that allocating resources to reduce class size is “very expensive and that you have to weigh the actions available to a school system or to a State for how to use resources,” and that it may be more economically efficient to target schools that have a high population of disadvantaged students for reduction in class sizes. (Tr. at 8574-76, 8630.) He also acknowledged that some research shows “class size reduction can have negative unintended consequences.” (Tr. at 8498-99, 8584.)

1982. Dr. Noguera stressed the importance of the physical condition of school facilities and availability of technology for student achievement. He explained that quality and cleanliness of school facilities, as well as the ability of the facilities to provide and accommodate educational resources, such as libraries and laboratories, are all part of creating the conditions for student learning. (Tr. at 8374.) He also stated that higher quality facilities tend to be correlated with better student outcomes. (Tr. at 8374.) According to Dr. Noguera, technology can be used to reinforce education, personalize learning for students utilizing software, allow students to learn how to conduct research, and play a critical role in ensuring access to learning. (Tr. at 8351.) Further, he testified effective technology for students includes not just access to devices, such as Chromebooks or iPads for every student, but also computers, WiFi, software and digital learning resources, classroom technology such as Smartboards, and training for teachers and students on how to use the technology. (Tr. at 8357.) Dr. Noguera testified that significant gaps in internet access existing in both rural and poor urban communities across Pennsylvania present a barrier to student learning. (Tr. at 8362-63, 8356.) However, Dr. Noguera conceded he would not be offering any opinion regarding the condition of the facilities at any particular Pennsylvania school or district or the climate created therein. (Tr. at 8489.)

*224 1983. Dr. Noguera agreed it was fair to characterize him as a longtime “policy advocate attempting to win public support for what [he] deem[s] to be a progressive education agenda.” (Tr. at 8393.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1984. Dr. Noguera testified that student outcomes are affected by numerous personal, family, and community factors. (Tr. at 8524-25.) Dr. Noguera, like Petitioners' other experts, also credibly explained that if given the proper support, all children, including those from low income or impoverished households, can perform at high levels in school. However, for them to do so, key strategies, supports, and services must be employed, and, due to the characteristics of the district itself or those of its students, some school districts will require additional funding to offset the resultant higher costs. (Tr. at 8274, 8280; *see also* Tr. at 8283-86, 8305-06, 8380-81, 9538-39, 8218-19, 8375.)

1985. Dr. Noguera stated that "poverty has a profound influence on child development and student achievement." (Tr. at 8403.) Similarly, related social conditions (such as food and home insecurity, family illness, and others) contribute to lower rates of achievement and educational attainment. Such societal conditions are problems that generally are not created by the public school system. (Tr. at 8524-25.) However, Dr. Noguera testified that the consequences of these conditions manifest within school as well. (Tr. at 8540.) Research suggests that approximately two-thirds of the variation in student achievement can be explained by out-of-school factors, per Dr. Noguera. (Tr. at 8408.)

1986. Dr. Noguera testified that students raised in poverty are at increased risk for negative outcomes compared to more affluent children across a number of factors, including: academic difficulties; high school dropout rates; health differences, including childhood **obesity**, **asthma** and overall poor health; and greater behavioral and emotional problems. (Tr. at 8403.) In addition, Dr. Noguera explained that children living in poverty are more likely to be exposed to violence, crime, abuse or psychological trauma outside of the school building, and adolescents living in poverty are more likely to engage in risk-taking and antisocial behaviors that negatively impact academic achievement. (Tr. at 8404.)

1987. Dr. Noguera explained on cross-examination that a high poverty district is not the same as a low revenue district. There are some high poverty districts in Pennsylvania that are well above the state average in revenue per student. (Tr. at 8410.) He agreed that Pittsburgh and Lancaster can both be classified as high poverty districts that also have high revenues per ADM. (Tr. at 8410-11.)

1988. Dr. Noguera's research supported the conclusion reached by Professor Ladd in a 2012 article upon which Dr. Noguera relied in his report that even in countries viewed as having high performing systems of education, students from lower income households are less successful academically than their more advantaged peers. (Tr. at 8492-93.) Notwithstanding, Dr. Noguera noted, it would "be difficult, if not impossible" for the United States to replicate the success of these countries by focusing on school reform alone. (Tr. at 8493.) However, Dr. Noguera explained that there has been great progress in dramatically reducing educational disparities caused by poverty, even if those disparities cannot be eliminated entirely. (Tr. at 8632-33.)

***225** 1989. Dr. Noguera also agreed:

Though understandable and also commendable in some ways, this reluctance even to suggest that some children face educational challenges that schools alone may not be able to address signifies a denial of the basic correlations between family background and student achievement. Simply wanting something to be true does not make it so.

(Tr. at 8495.) Dr. Noguera further acknowledged that "even if we set aside the role of family background, the goal of 100 percent proficiency is absurd unless the proficiency levels are set so low as to be meaningless." (Tr. at 8495.) Although Dr. Noguera said that working toward 100 percent proficient is "absolutely" a goal to have. (Tr. at 8634.)

1990. While Dr. Noguera identified after-school programs and summer school programs as evidence-based strategies or interventions that might have a positive impact on achievement, he testified "[t]he evidence on the effectiveness of after-school programs and summer schools is somewhat mixed." (Tr. at 8496-97.) Dr. Noguera indicated that the mixed results for some of the interventions or strategies are due to how those interventions or strategies are implemented, rather than the strategies or interventions themselves. (Tr.

William Penn School District; Panther Valley School..., Not Reported in Atl....

at 8495-96, 8617.) If they are implemented well, research shows, per Dr. Noguera, that the program will be effective in improving student outcomes. (Tr. at 8617.)

1991. Dr. Noguera indicated, on cross-examination, that while he believed there is an overreliance today upon standardized test results as a measure of quality education, ESSA had reformed this by providing states greater flexibility in how to implement the tests. (Tr. at 8396-97.) Dr. Noguera agreed that students may have high quality opportunities but perform poorly on standardized tests. (Tr. at 8550.) Dr. Noguera opined that the results of standardized test scores may be affected by how a child was feeling on a given day or the seriousness with which he or she had taken the test, but he agreed on redirect that a single student being sick or tired on the day of a test would not render all of the state test results unreliable. (Tr. at 8552-53, 8611-12.) Dr. Noguera posited the concept of student achievement also includes growth, graduation rates, grades that students earn in their courses, promotion rates, and postsecondary school attendance rates. (Tr. at 8555-57.) Dr. Noguera agreed with the statement: “[E]ducational outcomes alone – even far richer and more comprehensive measures than the student test scores now being used in the United States – cannot serve as an appropriate proxy for school quality.” (Tr. at 8494.)

1992. Dr. Noguera felt it was a fair assessment of his view of cyber charter schools to characterize them as educational interventions in which certain states, including Pennsylvania, have invested significant financial resources but that have not demonstrated success in improving achievement. (Tr. at 8505.) In his article entitled “It’s Time to Develop a Progressive Education Agenda,” Dr. Noguera wrote: “For almost 20 years, reformers have had their chance to demonstrate what their vision for education could achieve and they failed to deliver the improvement they promised.” (Tr. at 8397.) Dr. Noguera clarified that he “would say there have been many reforms implemented. We often don’t sustain them long enough to know if they would work, and we don’t evaluate them to know how they must be modified to achieve better results. So I would say it’s more nuance[d] than that.” (Tr. at 8398.)

*226 1993. Dr. Noguera further agreed that any academic benefit of equitable funding is unlikely to occur immediately and that he was aware that, in its ESSA Plan, the Department anticipates in 2030 there will still be achievement gaps

between all student groups in general and the economically-disadvantaged groups in particular. (Tr. at 8462-63.)

1994. Dr. Noguera believed it is appropriate for state policymakers and local school officials to consider the cost of programs and interventions in determining which to support. (Tr. at 8504.) He conceded it is possible that Pennsylvania could spend significant sums to implement one or more of his recommended evidence-based strategies only to have other educational researchers in the future find that his results were disappointing and that those strategies have limited effect on educational achievement. (Tr. at 8508.) However, Dr. Noguera did not specifically calculate what the costs to taxpayers in the Commonwealth might be if the evidence-based strategies he highlighted in his expert report were to be implemented, nor did he analyze whether any school districts within Pennsylvania have implemented some of the educational strategies and interventions he endorses. (Tr. at 8488-89, 8503-04.) Dr. Noguera testified there are other strategies and interventions that could mitigate the impact of student poverty, including effective leadership, high expectations for students, and “teachers who are efficacious in promoting mastery in learning.” (Tr. at 8488.) He confirmed that he was not opining any Petitioner Districts lacked those characteristics. (Tr. at 8489-90.)

1995. Dr. Noguera also agreed on cross-examination, based on his limited knowledge because he had not analyzed the issue, that in Pennsylvania, low achievement on standardized tests is more strongly correlated with districts serving a high percentage of students in poverty than it is with the district’s level of revenue. (Tr. at 8411-12.)

1996. Dr. Noguera characterized Pennsylvania as being among the worst states in the nation in quality of educational opportunity. (Tr. at 8419.) However, he agreed on cross-examination the underlying sources he cited as a basis for that opinion concluded that Pennsylvania’s high schools rank 15th out of 50 states in “average opportunity score” for all students and ranked 23rd out of 50 states in average opportunity score for lower income students (as measured by eligibility for free or reduced price lunch), but that underlying source did not consider the PSSA or Keystone Exam results in its analysis. (Tr. at 8428-30.) Dr. Noguera further testified he had “no reason not to agree” that, for high school students overall, Pennsylvania schools provide high access to educational opportunity compared to most other states. (Tr. at 8544.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

1997. Notwithstanding any shortcomings that he believes exist in the public school system, Dr. Noguera agreed with the statement that “most people recognize that public schools are still among the most accessible and democratic institutions in American society” and that this statement applies to Pennsylvania’s public schools. (Tr. at 8399.) Dr. Noguera believes that schools should attempt to address out-of-school factors that constitute barriers to learning for their students but acknowledged that others would contend that the other “institutions in society that exist for the very purpose of addressing outside-of-school factors should take the lead on that effort perhaps in a community schools model, and that schools, for their part, should focus on delivering educational content” to students. (Tr. at 8534-35.) However, Dr. Noguera testified that if schools do not intervene and compensate for the effects of poverty and mitigate those effects, the disparities will continue to persist and large numbers of students will not get what they need, leading to damaging, long-term consequences for the state. (Tr. at 8648.)

e. Clive Belfield

*227 1998. Dr. Clive Belfield is the principal economist at the Center for Cost-Benefit Studies in Education at the University of Pennsylvania and a professor of economics at the Queens College City University of New York. (Tr. at 8958, 9068-69.) His primary area of research is the economics of education with a concentration in benefit cost analysis of educational interventions. (Tr. at 8959.) Over his career, Dr. Belfield has served as an expert witness on behalf of plaintiffs in numerous cases involving school funding. (Tr. at 9070-71.) At trial, Dr. Belfield was qualified as an expert in the economics of education. (Tr. at 8966.) Dr. Belfield’s opinions are based on his expertise in evaluating the economic outcomes from education and various education interventions. (Tr. at 9069.)

1999. Dr. Belfield testified there is “a robust, large, significant ... positive relationship between education and adult outcomes -- lifetime outcomes[,]” with the biggest benefit inuring to those that have the lowest initial baselines of schooling. (Tr. at 8971-72, 8975-76, 8995.) He also explained that there is a positive causal relationship between increased educational attainment and higher earnings, and the impact

on increased education on wages is consistent across gender and race. (Tr. at 8994-9000; PD-00014-0002.) According to Dr. Belfield, there is also a “sizable, robust relationship” between education and individual health outcomes because people with increased education make behavioral choices that improve health status, such as exercising more and smoking less. (Tr. at 9009-10.)

2000. Dr. Belfield opined that Pennsylvania and its citizens economically benefit from increases in educational attainment. (Tr. at 8967.) As Dr. Belfield explained, educational attainment has significant economic benefits because increased education is the “primary way” that individuals acquire higher levels of knowledge, skills, and experience, also referred to as “human capital.” (Tr. at 8974-75.) Dr. Belfield testified that “the more human capital a worker has, the more productive that worker can be,” which in turn increases economic growth. (Tr. at 8974.) In addition, there are “spill-over productivity gains” that result from having a highly educated workforce. (Tr. at 9028.) Dr. Belfield opined this is partly because “[w]orking with coworkers who are more productive makes one more productive oneself” and partly because high-skill communities attract business investments that spur further economic growth. (Tr. at 9028-29; PD-00014-0006.)

2001. Dr. Belfield testified that a large body of literature demonstrates that there is also a “strong, robust relationship” between education and tax contributions, including federal, state and local income tax payments, and consumption taxes like sales taxes. (Tr. at 9000-02; PD-00014-0003.) Dr. Belfield explained that increased tax contributions benefit society in multiple ways because “as individuals earn more ... they pay more in taxes, so that makes it easier to collect taxes. And they reduce pressure on government services, so that makes it easier to provide government services for a given tax rate.” (Tr. at 9031-32; *see also* Tr. at 9003.) Dr. Belfield also stated that lowering tax rates decreases the negative impact taxation can have on individuals’ tendency to behave in economically inefficient ways, known as the “marginal excess tax burden.” (Tr. at 9030-31.) Ultimately, in Dr. Belfield’s opinion, increasing educational attainment would “allow[] Pennsylvania to reduce its tax rates to provide the same level of services.” (Tr. at 9032.)

2002. In Dr. Belfield’s view, education also has an impact on government healthcare spending and social health gains. (Tr.

William Penn School District; Panther Valley School..., Not Reported in Atl....

at 9010-16.) Dr. Belfield's analysis, which looked at fiscal healthcare spending, demonstrates that Pennsylvania spends six times as much on healthcare for high school graduates as it does on individuals with college degrees. Therefore, Dr. Belfield believes increasing education levels would result in significant taxpayer health care savings and provide an economic benefit of having a greater number of healthy citizens in the Commonwealth, known as "social health gains." (Tr. at 9011-16; PD-00014-0004.) According to Dr. Belfield, research similarly has established a "strong, direct, causal relationship between education levels and criminal activity" – meaning that individuals "with less education are more likely to undertake criminal activity, are more likely to be involved in the criminal justice system and [are] more likely to be in ... the corrections system." (Tr. at 9017-18.) As a result, Dr. Belfield testified increased educational attainment would significantly reduce the "fiscal crime burdens" that criminal activity places on Pennsylvania's criminal justice, policing, and corrections systems. (Tr. at 9018-21; PD-00014-0005.) In addition to decreasing the amount that taxpayers pay for these systems, Dr. Belfield said increased education would reduce "social crime burdens," or the economic impact of crime on both its direct victims and others who bear additional costs of crime such as lost income, mental suffering, and higher insurance premiums. (Tr. at 9021-23; PD-00014-0005.)

*228 2003. Dr. Belfield testified education is also important because it reduces individuals' reliance on what is commonly referred to as "welfare," Pennsylvania's systems of income, housing, and food supports to low-income families. (Tr. at 9032-9033.) Accordingly, increases in educational attainment would reduce the amount of money Pennsylvania must pay to support and administer those systems. (Tr. at 9034; PD-00014-0006.)

2004. Dr. Belfield estimated that each additional student who graduates high school and attends "some college" (obtains a two-year degree or completes several years of a four-year degree program) will yield \$150,660 in social gains through increased productivity in the labor market; each student who obtains a bachelor's degree yields significantly more, \$622,990. (Tr. at 9038-39; PD-00014-0006.) The fiscal gains to Pennsylvania taxpayers are also large, at \$88,840 and \$144,170 per student, respectively. (Tr. at 9037-38; PD-00014-0006.) Dr. Belfield testified that these numbers demonstrate that "the Pennsylvania taxpayer has [a] very

significant fiscal interest in the educational attainment levels of its citizens." (Tr. at 9037-38.)

2005. Dr. Belfield testified that his research demonstrates that providing education to economically-disadvantaged students is especially important to the Commonwealth. Dr. Belfield estimated that if Pennsylvania were to achieve "postsecondary parity" – that is, if economically-disadvantaged high school graduates had the same rates of educational attainment as their non-disadvantaged peers – the Commonwealth would gain \$159,520 per student, and \$18.56 billion per graduating class in increased earnings, productivity gains, decreased tax burden, and lower crime, healthcare, and welfare spending, among other social benefits. (Tr. at 9049-50, 9055-58; PD-00014-0009.) That is, Dr. Belfield said there is an economic benefit to increasing educational attainment even if the Commonwealth does not close the attainment gap. (Tr. at 9363-65.) For example, increasing the college attainment rate of economically-disadvantaged students in high-poverty districts, last reported at 19%, to the 31% college attainment rate of their peers in low-poverty districts, would reap social gains of \$159,520 per student, according to Dr. Belfield. (Tr. at 9362; PD-00014-0007.) Similarly, Dr. Belfield projects that improving the attainment rate of non-poor students graduating from high-poverty schools from 18% towards the 58% rate of their peers in low-poverty districts would also produce sizeable benefits. (Tr. at 9362-63; PD-00014-0007.) By advancing towards parity between low-wealth/high-poverty districts and high-wealth/low-poverty districts, Dr. Belfield testified that "Pennsylvania would gain a substantial amount of social value." (Tr. at 9365.)

2006. Dr. Belfield opined that given "the current low levels of postsecondary attainment[,] however, Pennsylvania is, essentially, foregoing these resources. It's ... not investing in high-yield investments for the [] Commonwealth." (Tr. at 9060.)

2007. Dr. Belfield opined it is difficult to use test scores as an outcome measure, and there is much less evidence on the association between test scores and economic outcomes as compared to studies related to attainment. (Tr. at 9279-80.) As he stated in his book, *Economic Principles for Education Theory and Evidence*, "[v]alue added academic scores should be used to take account of family background and intake

William Penn School District; Panther Valley School..., Not Reported in Atl....

characteristics, and these are not uncontentiously modeled.” (Tr. at 9280.)

*229 2008. Dr. Belfield's analysis is based on measures of “attainment” rather than “achievement” – *i.e.*, students attaining a high school diploma or college degree, rather than how well a student performs on a standardized test. (Tr. at 8967, 8977.) He focused on attainment, in part, because, in his opinion, “it is a more direct relationship for analysis than achievement” and, in doing so, found “that there are significant economic benefits to the Commonwealth ... and to Pennsylvania taxpayers from increases in educational attainment.” (Tr. at 8967, 8977.) Dr. Belfield equates graduating from high school with receiving an adequate education. Dr. Belfield defines an inadequate education system as one in which too few students graduate from high school. (Tr. at 9092.) Dr. Belfield explained that if a student graduates in the five-year or six-year cohort, he or she is still considered to be a high school graduate and graduating from high school in any amount of time allows a student to realize the same human capital and non-cognitive skills as another graduate. (Tr. at 9250-51.) Dr. Belfield testified that the 4.73% increase in graduation rates in Pennsylvania over the last 10 years is expected to have a “very significant positive impact on Pennsylvania's finances.” (Tr. at 9255-56.)

2009. Dr. Belfield, on cross-examination, stated that a student may not attend or complete college for reasons unrelated to preparedness. (Tr. at 9094.) The group labeled “do not attend college” in Dr. Belfield's analysis of postsecondary attainment levels did not include any assessment of the reasons why those individuals chose not to attend college. (Tr. at 9098-100.)

2010. Dr. Belfield testified the financial constraints that pertain to attending postsecondary institutions disproportionately impact economically-disadvantaged students. (Tr. at 9095-96.) For instance, there are some students who are prepared to attend college but choose not to do so because of other economic circumstances in their lives, such as the need to obtain a full-time job to support themselves or their families. (Tr. at 9096-97.) Dr. Belfield testified that “[t]he purpose of [his] report ... is explicitly not to say everybody should and must go to college. It's to say, what are the consequences if we eliminated disadvantage as a factor in college enrollment.” (Tr. at 9097.)

2011. While Dr. Belfield once wrote in an article that, “[s]tudies of educational achievement or educational attainment consistently find that differences in family circumstances have a large influence on educational outcomes, more so than the impacts of differences among schools,” he doubted the veracity of that twenty-year-old empirical statement presently as, “things may have changed.” (Tr. at 9330.) He also stated that it still “sounds plausible” that “[m]ore than 90 percent of a child's waking hours from birth to the age of 18 are spent outside of school in an environment that is heavily conditioned, both directly and indirectly, by families[,]” but, again, clarified that he had not analyzed that calculation since he wrote it two decades ago. (Tr. at 9331-32.) Dr. Belfield believed that “[b]oth families and schools are central to obtaining strong educational results, and the imbalance of educational policy in the direction of school reform is detrimental to improving the quality and distribution of educational outcomes.” (Tr. at 9337.)

2012. Dr. Belfield was not retained to opine on whether increased education funding leads to greater educational attainment or on the amount necessary to provide an adequate education. (Tr. at 8968.) For this reason, Dr. Belfield did not do a complete benefit-cost analysis or calculate a benefit-cost ratio herein, although he did examine “all of the benefits and a substantial amount of the costs,” which is what he had been requested to do. (Tr. at 9076-77.) While he opined generally regarding the benefits of reaching certain educational attainment goals, Dr. Belfield did not attempt to identify what education policies, reforms, or interventions might be implemented in order to achieve those goals, as he was “not asked to perform that task.” (Tr. at 9077.) As such, Dr. Belfield has not attempted to calculate how much it would cost to reach the attainment goals he advances in his analysis. (Tr. at 9077-78.) On cross-examination, Dr. Belfield was reminded he had actually warned against this very practice in his own textbook on economics, *Economic Evaluation in Education*, in which he wrote: “[A] proper assessment of costs and effectiveness or benefits is a necessary element of a serious evaluation. All too often, either costs or effects are considered separately, and any combined inferences may be misleading.” (Tr. at 9291.) However, he clarified his position as follows:

*230 I don't think that's a legitimate conclusion. Again, I am not sure how to convey to the Court that benefit cost analysis requires looking at benefits and looking at costs,

William Penn School District; Panther Valley School..., Not Reported in Atl....

and for the remit of my expert opinion, I was asked to focus on the benefit on the assumption that other—that it was not my contribution to the Court to look at how the benefits would be specifically achieved in Pennsylvania.

So to say that the study of the benefits is not serious is not—it's not a fair accusation.

(Tr. at 9292.)

2013. Dr. Belfield agreed, in order to increase attainment, a “policymaker would need to know what interventions to implement ... and how much those interventions would cost[,]” and his report does not address this or how many years of investments it would take to begin seeing economic benefits, as this is not his area of expertise. (Tr. at 9153-55.) He also agreed that the Commonwealth does not have unlimited funds and must make choices about where it is going to spend its finite resources. (Tr. at 9158.) Dr. Belfield does not have any evidence of other investments – besides education – to which the Commonwealth could allocate additional spending. (Tr. at 9162-64.)

2014. Dr. Belfield acknowledged that he did not assess the quality of the education provided “in terms of inputs” – only outputs. (Tr. at 9084.) He also did not assess the likelihood that the educational attainment goals described in his report could actually be reached at any particular spending level. (Tr. at 9085.) Dr. Belfield agreed that he had written, in 2002, that the general findings in the Coleman Report⁶⁷ have “been replicated in virtually all of the studies done in ensuing decades.” (Tr. at 9334 (confirming a quote from an article he authored), 9368.) However, Dr. Belfield indicated, on redirect, that there were studies more recent than the Coleman Report regarding the connection between education spending and school achievement, including that of Dr. Rucker Johnson, one of Petitioners’ experts. (Tr. at 9368.)

2015. Dr. Belfield's report used U.S. Census data to show that Pennsylvania's education spending per student is the eighth highest in the country. (Tr. at 9119.) Since he prepared his report in 2021, new U.S. Census data became available that identifies Pennsylvania as the sixth highest in the country for spending in term of K through 12 education. (Tr. at 9119-20.) Dr. Belfield's report also confirms that Pennsylvania has a greater concentration of residents with at least a bachelor's degree (18.8%) and a lower number of students who fail to

graduate from high school (9.8%) than the national average (10.3% and 12.6%, respectively). (Tr. at 9120-21.) With respect to residents with an associate degree or a graduate or professional degree, Pennsylvania is consistent with the national average. (Tr. at 9121-22.)

*231 2016. Dr. Belfield was not aware of the 2019 statistics in Pennsylvania's ESSA Plan that show 20% of Pennsylvania's workforce had a bachelor's degree and that 22% of workers with a bachelor's degree are projected to be needed in 2025 for Pennsylvania's workforce, nor had he studied these numbers for purposes of his analysis. (Tr. at 9220-21, 9225.) Dr. Belfield also was not aware that the ESSA Plan projects that 11% of Pennsylvania's workforce will need a master's degree by 2025, and 12% of Pennsylvania's residents currently have a master's degree or higher. (Tr. at 9225-26.)

2017. While some economic projections in his expert report are based on projecting the economic benefits of a 100% high school graduation rate, Dr. Belfield stated in his book, *The Price We Pay*:

Aspirationally, we wish to find ways for all students to graduate from high school and to receive an excellent education. The literature on the causes of dropping out, however, suggest that this will not be accomplished by even the most promising educational interventions. Both statistical studies and surveys of dropouts suggest that the quality or type of education received is not the sole factor.

(Tr. at 9261.) Dr. Belfield recognized in his book that there are a litany of out-of-school factors that impact student in-school performance. Dr. Belfield stated therein:

Family problems, frequent residential moves and school mobility, limited cognitive and physical abilities, psychological problems, pregnancies,

William Penn School District; Panther Valley School..., Not Reported in Atl....

and financial constraints all exert pressure on students to drop out. Experts agree that a more complete response will require changes not only in schools, but also in the combined support and additional resources of families and communities.

(Tr. at 9261-62, 9267.) However, Dr. Belfield indicated that this was his belief when the book was written, and he had not examined if there had been systemic improvements or interventions since that time. (Tr. at 9268.) Dr. Belfield also recognized in his book *Economic Principles for Education*, around 15% to 40% of the labor force is found to be overeducated. (Tr. at 9328.) Nevertheless, Dr. Belfield did not account for potential over-education in this case. (Tr. at 9328.)

2018. Dr. Belfield based a large portion of his benefits analysis on data which purports to show the education levels of Pennsylvania students. However, as he explained on cross-examination, the data that he used was based on projections of student education levels. (Tr. at 9235.) Accordingly, a relabeled version of the demonstrative exhibit Dr. Belfield used was introduced to show that the numbers used in his analysis were based on his projections. (LR-03345.) Upon reviewing the document, Dr. Belfield explained that “there are many ways to define high school graduation dropout completion. ... [M]y number is taken from the ... Department One could draw different numbers from that—from that website to get different estimates of the number of dropouts.” (Tr. at 9244.)

2019. As part of his analysis, Dr. Belfield used college enrollment and graduation data from the National Student Clearinghouse (NSC). (PD-00014-0007.) However, he was unable to explain from which website he obtained this data. (Tr. at 9309-11.) Dr. Belfield noted that the only proof he could give was that it was data from the NSC that was “the datasets” he believed he had given to the court. However, no such information was provided to the court or to Respondents’ counsel. Counsel for Petitioners confirmed that no such datasets from Dr. Belfield were ever provided. (Tr. at 9311-13.) Notwithstanding, Dr. Belfield assured this Court that he utilized NSC data. (Tr. at 9313.) While the chart listing NSC data at PD-00014-0007 shows data for

487 districts, there are 499 school districts in Pennsylvania that enroll students, and Dr. Belfield was not able to say which school districts were omitted from his analysis. (Tr. at 9315-16.) Moreover, Dr. Belfield was unable to explain whether or not his data included charter schools, and, if it did, where the charter schools were included in his data set. (Tr. at 9316-17.) Nevertheless, he stated there was no reason for charter schools to have been excluded. (Tr. at 9317.)

*232 2020. Dr. Belfield testified that some school districts are more efficient in spending their funding than others. For instance, in his book, *Economic Principles for Education*, Dr. Belfield noted that studies of the efficiency of school districts in New Jersey have shown that “schools in the neediest districts have the lowest average efficiency score and those in the wealthiest districts, the highest.” (Tr. at 9275-76.) Dr. Belfield noted that the term “efficiency” used in these types of studies differs from how it is used in this matter. (Tr. at 9276-77.) In addition, as stated by Dr. Belfield, “Overall, competitive effects have a positive effect on performance within school systems.” (Tr. at 9277-78.) While he has never retracted the portions of his book wherein he made these statements, Dr. Belfield stressed that his book was written over 25 years ago, the statements were based on a consensus of the research at that time, and he probably had not reread the statements he made therein since that time. (Tr. at 9275-78, 9351.)

2021. This Court finds credible Dr. Belfield's opinion that there is a positive, causal relationship between increased educational attainment and higher earnings, that the impact of increased education on wages is consistent across gender and race, and that there is also a “sizable, robust relationship” between education and individual health outcomes because people with increased education make behavioral choices that improve health status, such as exercising more and smoking less. This Court also finds credible Dr. Belfield's opinion that Pennsylvania and its citizens economically benefit from increases in educational attainment for the reasons he provided. While this Court has less confidence in the specific amounts of economic benefit Dr. Belfield provided, it finds credible that the benefit amount is substantial. This Court further recognizes that Dr. Belfield was not retained to provide expert testimony regarding the cost of achieving educational attainment.

f. Rucker Johnson

2022. Dr. Johnson is the Chancellor Professor of Public Policy at the University of California at Berkeley, where he has been a teacher and researcher for 17 years. (Tr. at 9379; PX-03035.) At trial, Dr. Johnson was qualified as an expert on the “econometrics of the relationship between changes in school funding and student achievement and economic outcomes.” (Tr. at 9409-10.) His expert opinion is based on his extensive scholarship studying the role of investments in education on student outcomes and his analysis of research conducted by colleagues about the impact of school funding on academic achievement. (Tr. at 9379-82.)

2023. Dr. Johnson testified that economists have been studying the relationship between funding and achievement for more than 50 years, but over the “last decade, there has been a major shift” in this research as a result of increased access to longitudinal data that follows the same students over time, and the development of research methods that are better at identifying causality. (Tr. at 9402, 9415-16.)

2024. Studying the relationship between school funding and student achievement is difficult, Dr. Johnson testified, because school funding is “too connected to other confounding influences.” (Tr. at 9415.) For instance, students who attend high wealth districts are more like to have wealthy parents, and they are more likely to live in better-resourced neighborhoods and communities. (Tr. at 9415.) Trying to “disentangle” higher achievement due to parental wealth and socioeconomic advantage versus school quality is “extremely difficult.” (Tr. at 9415-16.)

2025. Dr. Johnson and two other researchers, C. Kirabo Jackson and Claudia Persico, published a paper in 2015 that specifically analyzed the long-term impacts of school funding reforms on student outcomes. (Tr. at 9414-16, 9876.) Dr. Johnson explained that, prior to this 2015 study, research on whether a relationship existed between funding increases and student achievement was inconclusive and the evidence of the effect of school funding reform on long-term economic outcomes was unknown. (Tr. at 9414-16, 9692-93.)

*233 2026. Dr. Johnson stated that the Jackson, Johnson, and Persico study analyzed cohorts of students born between

1955 and 1985 and how they were impacted by court-ordered state school funding reforms that occurred in 28 states between the 1970s and the 1990s. (Tr. at 9421-22.)

2027. Dr. Johnson testified that this study employed what is known as a “quasi-experimental” design. (Tr. at 9413-14.) Dr. Johnson indicated that this methodology is generally accepted in the field and is intended to “pin down and isolate” the effect of school funding increases on students’ lives. (Tr. at 9413-14, 9416-19.) Because of significant ethical limitations, Dr. Johnson said researchers would not treat the students as a laboratory experiment by randomly assigning students and placing them in either overcrowded schools and classrooms or in “very enriched classrooms with great teachers” and compare the respective outcomes. (Tr. at 9416-18.) Instead, Dr. Johnson and his co-researchers used the “naturally-occurring policy variation” of school reform initiatives that have been implemented around the country to analyze the impact of increased investments in education. (Tr. at 9417-18.)

2028. Dr. Johnson explained that he and his co-researchers first created an inventory identifying every court-ordered school funding reform that has occurred in the U.S. between 1971 and 2000 and the type of funding formula that resulted from funding reforms. (Tr. at 9410-11.) They then analyzed how the trajectory of per-pupil spending changed over time as a result of the reform that was put in place. (Tr. at 9411.) Using the Panel Study of Income Dynamics (PSID), a widely used dataset that tracks a nationally representative set of families across generations, Dr. Johnson testified that he and his co-researchers compared the life consequences of children who were school age during the periods when these reforms were put in place. (Tr. at 9406-07, 9410-13.) Dr. Johnson explained that the resulting study was extensive, including more than 15,000 students, two-thirds of whom were from low-income backgrounds, across 1,409 school districts in over 1,000 counties in every state, and considered 93,000 data points about their lives. (Tr. at 9422-24.)

2029. Dr. Johnson acknowledged that this study was based on an average sample size of 310 students per state, which has been characterized as being a “fairly small sample size,” and that the PSID did not indicate whether the students actually attended their local school district rather than another school. (Tr. at 9877-78, 9884-85.) However, Dr. Johnson explained that the study was not “designed to be representative of

William Penn School District; Panther Valley School..., Not Reported in Atl....

any state,” or the school districts in a state, but to be nationally representative of the timing of school funding reforms, document changes in spending, and examine how they matter to long-term outcomes. (Tr. at 9877-78, 9964-65.) He disputed that the study had a small sample size, as it has data for entire state systems. (Tr. at 9877-78.)

2030. Dr. Johnson stated that student outcomes can depend on and be impacted by many personal, family, and community factors. (Tr. at 9413-15.) Dr. Johnson testified that, using the above methodology, he and his colleagues were able to separate out demographic variables that might influence student outcomes, and even compare cohorts from the same district — “otherwise similar children that have the same family background, the same out-of-school factors, the same neighborhood” — before and after a funding reform was put in place. (Tr. at 9413-19, 9425-26.) According to Dr. Johnson, this approach also allowed the team to follow individual students chronologically and assess their life outcomes across a broader variety of measures, rather than relying on a “snapshot ... at a point in time[.]” (Tr. at 9416.)

*234 2031. Dr. Johnson explained that earlier studies, like the well-known and influential Coleman Report issued in 1966 and Dr. Hanushek's research that concluded inequality in schools was due largely to inequality in family environments, not funding, used time series data aggregated to the state level. (Tr. at 9544-52, 9684-85, 9860.) Dr. Johnson indicated these studies lacked the same granularity or precision as newer studies, meaning that they could not rule out the influence of other factors on a student's achievement, like family background or the changing composition of a school district. (Tr. at 9544-50.) Dr. Johnson indicated that, in contrast, newer studies, like his, use larger datasets and longitudinal data that follows the same students over a long period of time, from birth to adulthood, allowing the researchers to isolate the role that different factors, such as school funding, play in student achievement. (Tr. at 9545-50.) Dr. Johnson testified that this difference in methodology is important because it recognizes that school funding and current achievement is not based on current school funding alone, but the history of school resources up to the current grade level of a student. (Tr. at 9548-49.) Dr. Johnson explained that these new research methods allow researchers to speak more authoritatively on the causal connection between school funding and student achievement. (Tr. at 9551.)

2032. Dr. Johnson acknowledged that there have been numerous studies that tried to measure the relationship between school resources and student outcomes, which have reached inconsistent results. (Tr. at 9684.) While the bulk of the studies concur with the Coleman Report and Dr. Hanushek's studies, Dr. Johnson believed that it is not the number of studies but the quality of the studies that counts, and, in his view, higher quality studies agree with his position. (Tr. at 9863-66.) Dr. Johnson acknowledged that Dr. Hanushek is influential, and he has tremendous respect for scholars who have studied the relationship between spending and achievement and reached conclusions that differ from his. (Tr. at 9547-48.)

2033. Dr. Johnson explained that his research uses standardized test scores “because they're markers of how we measure [students] against the standard that we're trying to hold up from the standpoint of what it means to be career and college ready” and “what it means to achieve.” (Tr. at 9537-38.) Dr. Johnson explained that using three years of standardized test results for individual students creates a “student achievement growth” measure that is a reliable reflection of student achievement improvement based on an increase in per-pupil spending over those three years. (Tr. at 9523-24.) Dr. Johnson testified that when he assesses achievement growth, it is “in relationship to progress toward a common standard” because it is important “not to have different expectations for some children than other children.” (Tr. at 9762.) However, Dr. Johnson admitted he had written that standardized “[t]est scores are imperfect measures of learning” and had “rather weak[]” relationships to other measures of adult success. (Tr. at 9867.)

2034. Dr. Johnson testified that, after the publication of his 2015 report, the pendulum shifted to the conclusion that increased spending on education leads to improved educational outcomes. (Tr. at 9551.) Dr. Johnson indicated that the new wave of research has consistently and conclusively demonstrated that “[s]chool funding, school resource equity, is an essential investment to advance student achievement,” although he acknowledged that some researchers may not agree with his conclusions. (Tr. at 9406, 9690-92.)

2035. Dr. Johnson asserted that his research confirms that increased school funding has a positive causal effect on “student outcomes throughout the school trajectory.” (Tr.

William Penn School District; Panther Valley School..., Not Reported in Atl....

at 9380.) For example, Dr. Johnson explained that he and his co-researchers found that a 10% increase in per-pupil spending throughout 12 years of school, directed at low-income children, “increased the years of completed education by about half a year,” “increased the likelihood of graduating from high school” by 6% to 8%, increased earnings by 10%, and “reduced the annual likelihood of being poor by 6.1 percentage points.” (Tr. at 9431-32.) According to Dr. Johnson, a 20% increase in school funding would result in the elimination of two-thirds of the outcome differential between children of poor families and non-poor families, and a 25% increase in per-pupil spending “would be large enough to eliminate a large” amount “of the average achievement gaps between children from low-income versus non-poor families.” (Tr. at 9432-22, 9627.) Dr. Johnson explained that such investments would have to be sustained “over many years” to see the kind of improvements that he was describing. (Tr. at 9433.)

***235** 2036. Dr. Johnson acknowledged on cross-examination that he could not identify a single state in the United States where a 20% funding increase corresponded with a two-thirds reduction in outcome discrepancies. (Tr. at 9629-34.) He further acknowledged that he “had not found specific examples on a large-scale basis of a 25[%] increase in per-pupil spending that has actually eliminated the average attainment gaps between children from poor and non-poor families.” (Tr. at 9789-90.) However, Dr. Johnson explained that many state systems have chosen to make smaller increases and that results of his research were not “theoretical,” but supported by the empirical evidence. (Tr. at 9629-37, 9789-91.)

2037. Dr. Johnson testified that his research reflects that, “because of the cumulative nature of learning,” investments need to be sustained throughout a student's education. (Tr. at 9468, 9612-13.) Dr. Johnson explained that “it's not only the level of the funding change that impact[s] student achievement, but ... how long ... [they are] exposed to the increased funding,” sometimes referred to as a “dose response.” (Tr. at 9413, 9434.) Dr. Johnson indicated, for example, that his findings demonstrate that “spending increases did improve the outcomes for middle school and high school students that experienced the increase. But it was even bigger if it began in ... their early elementary years.” (Tr. at 9490; *see also* Tr. at 9425-27.) Dr. Johnson explained that, by the same token, there is research demonstrating that pairing

investments in K-12 education with investments in pre-K has a multiplier impact on students' outcomes over time. (Tr. at 9470-88; PD-00016-0008–0009.) Dr. Johnson agreed on cross-examination that roughly half of the achievement gap observed in the third grade was already apparent at kindergarten entry. (Tr. at 9701.)

2038. Dr. Johnson explained he wanted “to instill the idea that school funding reform can cause student achievement growth irrespective of family background,” which we are “not seeing as being somehow stymied because the kids are coming from more impoverished environments.” (Tr. at 9538-39.) According to Dr. Johnson, “[i]f you account for their baseline advantage, we are seeking growth across the spectrum of schools and districts and types of learners.” (Tr. at 9539.)

2039. Dr. Johnson testified that when school funding increases due to reforms, research shows that, after schools reduce some other types of spending, 70% of the funds are spent on instructional services, 40% are used to increase support services, and 10% are used on school buildings. (Tr. at 9462-63.) Dr. Johnson explained that good teaching is a critical part of resource equity of a good-functioning school system and having more money in a school system means smaller class sizes, teacher salaries that can attract a higher quality teaching workforce, increased support staff, and improved school buildings facilities that do not leak and have proper ventilation and heating and cooling. (Tr. at 9462-43, 9465-66.)

2040. Dr. Johnson opined the “positive effects on student achievement were driven, at least” partially, “by some combination of a reduction in class size, improvements in adult-to-student ratios, increases in instructional time, and increases in teacher salaries” that resulted in attracting and retaining more highly qualified teachers. (Tr. at 10003.)

2041. Dr. Johnson testified that schools are more likely to increase instructional expenditures, which is “one of the most important essential aspects that funding resource equity enhances and ensures,” where there is more than a one- or two-year commitment for increased funds. (Tr. at 10004.)

***236** 2042. Dr. Johnson believed that class size is an important factor that affects student outcomes. Dr. Johnson testified that “math achievement growth is significantly

William Penn School District; Panther Valley School..., Not Reported in Atl....

related to class size, per-pupil spending on teachers, and other school resource inputs analyzed that relate to the proportion of teachers that are inexperienced.” (Tr. at 9848-49, 10003.) Dr. Johnson explained that class size also has “significant impacts on early student learning trajectories.” (Tr. at 9418.) Dr. Johnson indicated that “[s]tudent-to-teacher ratios are, at best, an aggregated measure of class size on average.” (Tr. at 9849-50.)

2043. Dr. Johnson said his research “really demonstrates that the socioeconomic differences in attainment are not immutable, that they’re very much sensitive to the quality and the intensity of our investments in public schools.” (Tr. at 9432.)

2044. According to Dr. Johnson, the relationship between funding and student success has been generally accepted by researchers in the field. (Tr. at 9554.) Dr. Johnson opined that “school funding has a causal impact that improve[s] student outcomes throughout the school trajectory, particularly when made early.” (Tr. at 9380.) Dr. Johnson testified that the beneficial effects of the investments are seen in a whole host of outcomes, including academic achievement, improved likelihood of high school graduation, and earnings and later life socioeconomic outcomes. (Tr. at 9380, 9604-05.)

2045. Dr. Johnson testified that his work is not the only analysis that has yielded these conclusions. Dr. Johnson indicated that there are a growing number of studies, using complimentary methodologies and a wide variety of different data, which have established that school funding has an impact on achievement. (Tr. at 9436-40; *see also, e.g.*, Tr. at 9493-99.) Dr. Johnson explained that these studies confirm that “[w]hether you’re looking at test scores or you’re looking at the longer term outcomes that we study, you basically see the same very definitive conclusion” that school spending matters for student achievement and life outcomes. (Tr. at 9440.)

2046. Dr. Johnson testified that, by the same token, it is well observed that cuts to school funding have had negative effects on student outcomes, “halt[ing] decades-long increases in student achievement” and stalling rates of college enrollment. (Tr. at 9979-80.)

2047. According to Dr. Johnson, increasing school funding by 20% is enough to reduce outcome gaps in not only

in education, but also in employment, earnings, and incarceration rates. (Tr. at 9435.) Dr. Johnson indicated that studies show there are “significant reductions in criminal involvement and incarceration in adulthood” with an increase in school spending. (Tr. at 9435.) Dr. Johnson testified that, often, criminal involvement is “really more symptomatic of being exposed to a poorly-functioning education system.” (Tr. at 9435.)

2048. Dr. Johnson found that “students in Pennsylvania’s most affluent districts are performing two to three grade levels” above “students in lower income, more disadvantaged districts.” (Tr. at 9559-61; PD-00016-0011–0012.) Dr. Johnson explained that there is no mystery as to the cause of these outcomes: “the achievement gaps that we see, we can trace them back to educational opportunity gaps.” (Tr. at 9556.) Dr. Johnson indicated, to that end, these gaps cannot be mitigated without more funding. (Tr. at 9432, 9453.)

2049. Dr. Johnson testified that there are disparities in the achievement gap based on race. (Tr. at 9563.) Dr. Johnson explained that the concentrations of poverty, which is “one of the major reasons that school segregation is highly predictive of achievement gaps,” are accompanied by sizeable achievement gaps, which is often because “segregation concentrates minority and Hispanic students in concentrated poverty schools that have less access to adequate funding” needed to support those students’ needs. (Tr. at 9563-64.)

*237 2050. According to Dr. Johnson, the greater the level of school segregation, “the higher levels of the White/Black achievement gap.” (Tr. at 9568.) Dr. Johnson testified that this means there is an achievement gap of two grade levels between those groups of students. (Tr. at 9568, 9571 (discussing PD-00016-0013–0014).)

2051. Dr. Johnson indicated that school leaders want their students to exhibit growth — that is, to improve. For example, Dr. Johnson explained that when he measures the impact of school funding on student outcomes, he measures student growth. (Tr. at 9512-13.) However, because PVAAS is solely measuring students and districts against each other, Dr. Johnson explained it does not measure whether students are in fact moving towards proficiency – that is, growth in progress toward a common standard. (Tr. at 9762, 9993-95.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

2052. PVAAS, per Dr. Johnson, is helpful for some purposes, but was not designed to assess the causal effect between achievement growth and school funding because it confounds a lot of factors that do not allow for the sharp isolation of the role of school funding in growth. (Tr. at 9760-61.)

2053. Dr. Johnson testified that he did not use PVAAS/ Department data but used “learning rate” data from Stanford Educational Data Archive (SEDA), including data related to Pennsylvania school districts, along with data about “instructional expenditures on teachers from the” NCES, to perform a growth analysis. (Tr. at 9806-07, 9820-21, 9824-25.) Dr. Johnson explained that SEDA uses geographic school districts, meaning that it includes all public schools, including charter schools, within a school district, although it may not include students in cyber charter schools. (Tr. at 9808-12.) Dr. Johnson agreed on cross-examination that student level data was important, and acknowledged that, unlike PVAAS data, SEDA data is not student level data. (Tr. at 9825-27.) Dr. Johnson clarified, however, that because the SEDA provides a “full universe of achievement” data of every district, the scope of the achievement growth data at the district level is very valuable. (Tr. at 9825-26.) Dr. Johnson testified that he used the SEDA data, including the Pennsylvania specific data, so that he could compare Pennsylvania to other states, including New Jersey, and that cyber charter schools were not a significant share that would drive different results. (Tr. at 9811-13, 9820-21.) Dr. Johnson agreed that SEDA used the term “learning rate,” rather than growth rate, but he described SEDA's term as being interchangeable with growth rates and that both phrases mean “academic average achievement growth across grades” and “achievement growth patterns in academic achievement” that are measured by test scores. (Tr. at 9824-25.)

2054. On cross-examination, Dr. Johnson was asked whether he agreed that one of his charts showed that SEDA data reflected that the geographic school district in Philadelphia County was spending significantly less than every other school district in Pennsylvania notwithstanding that there was Department data suggesting the contrary. (Tr. at 9839-44.) A chart reflecting Department data for the 2010-11 school year showed that SDP was spending an above-average amount in instructional expenses per ADM, which continued every year through the 2019-20 school year, except the 2015-16 school year. (Tr. at 9838-43; PX-01959, Tab “Exp. per ADM,” Column F, Rows 400 and 503; PX-01960, Tab “Exp. Per

AMD,” Column F, Rows 400, 503; PX-01961, Tab “2012-13 Exp per ADM,” Column F, Rows 400 and 503; PX-01962, Tab “2013-14 Exp per ADM,” Column F, Rows 400 and 503; PX-01963, Tab “2014-15 Exp per ADM,” Column F, Rows 400 and 503; PX-01964, Tab “2015-16 Exp per ADM,” Column F, Rows 400 and 503; PX-01965, Tab “2016-17 Exp per ADM,” Column F, Rows 400 and 503; PX-01966, Tab “2017-18 Exp per ADM,” Column F, Rows 400 and 503; PX-01967, Tab “2018-19 Exp per ADM,” Column F, Rows 400 and 503; PX-01968, Tab “2019-20 Exp per ADM,” Column F, Rows 400 and 503.) Dr. Johnson would not agree that his numbers were incorrect, but he confirmed that the ADM cited in the Department data included charter school expenditures. He questioned whether instructional expenses data was comprised of only classroom teachers or also included support staff and whether it reflected local labor market conditions. (Tr. 9843-45.) Dr. Johnson also explained that, consistent with his practice, he ran his analysis with and without SDP, to ensure that it was not skewing the results and that the relationship between school funding and student achievement holds. (Tr. at 9852-53, 9857-59.)

*238 2055. Dr. Johnson testified that he compared Pennsylvania's funding formula to those of other states, and he pointed out that, prior to Act 35, Pennsylvania was one of only three states without a consistent school funding formula designed to equalize funding disparities between districts. (Tr. at 9660-61.) Dr. Johnson observed that he would not consider Pennsylvania as having engaged in funding reform based on Act 35 because, under Act 35, only new funding passed through the Fair Funding Formula, meaning less than 15% of school funding was subject to the weighted funding formula. (Tr. at 9665-66.)

2056. As for the results on educational achievement due to the increased funding in Pennsylvania since the passage of Act 35, Dr. Johnson testified that he did not know what the results were because they were not measurable at this time. (Tr. at 9672.) Dr. Johnson explained that he would not use any test scores over the three years during the pandemic to study student achievement because of the learning loss that occurred, which was disproportionately felt by lower income districts. (Tr. at 9670-72.) He explained that small increases in funding would likely result in some impact, but that this trend may not “translate” if such funding increases are not sustained and are disrupted by a pandemic. (Tr. at 9672-73.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

2057. Dr. Johnson testified that he is “one of the biggest proponents of it's not just whether money matters, but it's how you allocate it to the most effective uses.” (Tr. at 9504.) Dr. Johnson indicated, on cross-examination, that he did not focus on analyzing how Pennsylvania districts spend money, and he acknowledged that he did not know what the proportion of funds coming to low wealth districts solely from the Commonwealth would be because his analysis was based on state and local funding together. (Tr. at 9659-60, 9957-58.)

2058. Dr. Johnson acknowledged that PD-00016-0006, a chart that examined the progressivity of school funding in Pennsylvania between 1990 and 2011, shows progressive growth from \$0.79 in 1990 to \$0.91 in 2011. He also acknowledged that the Fair Funding Formula was enacted in 2016, and that this chart did not calculate what progressivity would look like after 2011. (Tr. at 9661-62.)

2059. Dr. Johnson agreed on cross-examination that the average spending per pupil in Pennsylvania is higher than average relative to other states. (Tr. at 9724.) However, Dr. Johnson credibly explained that “averages mask the variation that is different across district need” and “variation is very pertinent to the achievement gaps we've been []mentioning.” (Tr. at 9726.)

2060. Dr. Johnson opined that sustained increases in school funding will improve long-term economic outcomes for students in low-wealth districts in Pennsylvania, and that it is crucial that those increases be sustained and not go “one year up, one year down.” (Tr. at 9612-14.) When informed that there have not been any years since 2014 when BEF decreased, he testified that Pennsylvania “should be applauded.” (Tr. at 9668-69.)

2061. Dr. Johnson cited his work in California as support for his underlying conclusions, but the U.S. Census data from 2015 to 2019 shows that per pupil education spending in California has gone up from 31st to 18th while spending in Pennsylvania has gone up from 8th to 6th. (Tr. at 9727.) Dr. Johnson acknowledged that, notwithstanding the education reform that has taken place in California, achievement and attainment gaps in measures including standardized test scores, high school drop-out rates, and college completion rates persist throughout California and that outcomes for Black, Hispanic, and economically-disadvantaged students in California still lag dramatically behind their Asian-American,

White, and wealthier counterparts. (Tr. at 9716-18.) Dr. Johnson explained, however, that the issue in this case is focused on “whether school funding, school funding increases, [and] school funding progressivity ameliorate[s] or] narrow[s] some of those achievement gaps” and that the California study was not designed to do this. (Tr. at 9718-19.) He further explained that California's initial efforts of school funding reform in the early 1970s actually resulted in a leveling down, rather than leveling up, of funding and, therefore, did not achieve the desired results. (Tr. at 9968-69.)

*239 2062. Dr. Johnson acknowledged on cross-examination that he has cited *Education Week's* Quality Counts report in his past works and agreed that, in 2020, *Education Week's* Annual Report Card on School Quality graded Pennsylvania as a “C,” which was the 9th highest grade for any state. (Tr. at 9868-69, 9872-75.) However, Dr. Johnson explained that the report was something he “wouldn't necessarily say ... is what [he held] up as the standard” and that the report addressed the average level of sufficiency or achievement aggregated across all districts in Pennsylvania, not the achievement gap, which is one of the largest. (Tr. at 9870, 9874-75.)

2063. On cross-examination, Dr. Johnson agreed that his report looked at predicted spending, (Tr. at 9937), but rejected the suggestion that his results were not based on “actual amounts of funding,” (Tr. at 9944). Dr. Johnson explained that while some of his results differed when “observed” increases in funding were used, in that the improvements were smaller in magnitude, the entire purpose of his method, and that of numerous economists like him, is to isolate the extra gains that came from court-ordered funding increases. (Tr. at 9944-48.) This method, according to Dr. Johnson, therefore eliminated other ongoing changes affecting a district from his calculations that are “attributable to district level characteristics that are particular to that district.” (Tr. at 9944-48.) Dr. Johnson indicated that this is what accounted for the differences in results: one method allowed for district-level characteristics to influence the results; and the other, his, eliminated those characteristics to focus on what the results on a typical school district would be based on, i.e., the court-ordered changes to state funding formulas. (Tr. at 9940-48.) Dr. Johnson testified that he verified the study's “prediction aligns very close with the actual behavior ... of the district,” but acknowledged that it would be a problem if “our

William Penn School District; Panther Valley School..., Not Reported in Atl....

model wasn't accurately predicting changes in what the actual district did on average." (Tr. at 9940.)

2064. On the topic of Pennsylvania's funding of charter schools and the impact on school finance calculations, Dr. Johnson acknowledged that if charter school students were not appropriately accounted for, the reliability of the analysis would be impacted. (Tr. at 9833-35, 9847-48.) Dr. Johnson testified that it is important to make the denominator and numerator consistent, so both should either include charter schools or not include charter schools. (Tr. at 9835-37.) Although Dr. Johnson could not remember whether he included charter schools in his chart showing per-pupil spending on teachers, he testified that he knew he was consistent with the denominators and numerators in his study. (Tr. at 9836, 9845, 9849.) He was confident, based on his research, that charter schools were not driving the relationship between increases in per-pupil spending on teachers and math and reading achievement growth. (Tr. at 9845, 9848.)

2065. Dr. Johnson explained that Dr. Hanushek's research, which echoed the Coleman Report, "use[d] time series data that is aggregate[d] to the state level" and relied only "on NAEP[-]type test scores" that cannot "separate and distinguish the role that family background plays, from school funding changes, from other type[s] of out-of-school factors." (Tr. at 9546-49.) Dr. Johnson further explained that this research did not "follow the money to see how the money [was] spent," which can lead to "misstate[ments about] the role that money and funding play in affecting educational opportunities." (Tr. at 9547-48.) Dr. Johnson opined that it is the quality of the studies and whether the studies are designed to "teas[e] out the causal effects" that should be considered. (Tr. at 9546-49, 9863-64.)

*240 2066. Dr. Johnson agreed on cross-examination that how money is spent by a school district matters and that simply spending additional funding on, for instance, a new football stadium would not "necessarily lead to the positive changes in student achievement that [he] was studying." (Tr. at 9956.) Dr. Johnson further agreed that there are a variety of opinions regarding the best ways for schools to use funding. (Tr. at 9955-58.) However, Dr. Johnson testified that he had not seen "great waste or inefficient use" of funds that school districts receive from funding reforms. (Tr. at 10003-04.) Dr. Johnson acknowledged that his report and testimony were not focused on how Pennsylvania school districts spent their

allocations, which was the focus of other witnesses, like Dr. Kelly. (Tr. at 9957-58.)

2067. Dr. Johnson testified that his contemporaries, Drs. Rothstein, Schanzenbach, and Lafortune (Lafortune), also reviewed student-level data using a similar methodology as Dr. Johnson's study. (Tr. at 9950-52.) Dr. Johnson acknowledged that while Lafortune agreed with Dr. Johnson on many points, the study disagreed with Dr. Johnson when it came to closing the student-level achievement gap and found no discernible relationship between school funding and closing the statewide achievement gap between individual high- and low-income students. (Tr. at 9950-52, 10014.) Dr. Johnson observed, however, that the second to last paragraph of the Lafortune study reflected that "money can indeed and does matter in education" and that the results of that study "complements similar results for the long run impacts of school finance reforms from [Drs.] Jackson, Johnson, [and] Persico." (Tr. at 9974-75.) Dr. Johnson further pointed out that Lafortune's study also disputed Dr. Hanushek's contention that school finance reforms would be offset by voter tax choices or inefficient usage by school districts, as such claims were not borne out in the results. (Tr. at 9975.) Thus, Dr. Johnson maintained that Lafortune's results actually validated his study. (Tr. at 9974-75, 9977.)

2068. Dr. Johnson agreed that his study looked at student achievement levels before and after court-ordered school finance reform, his study looked at a "dose-response" relationship that relied on the timing of that reform, and if the study got the "dose" wrong it could impact the validity of the study. (Tr. at 9909, 9936-37.) Dr. Johnson acknowledged on cross-examination that the Lafortune study did not always agree with the timing of when the court-ordered reform occurred or if such reform occurred. (Tr. at 9919-20, 9932.) However, Dr. Johnson credibly opined that this difference was minor and not consequential, pointing out that his study used the timing of the first court order in a school funding reform case and the Lafortune study used the timing of subsequent orders. (Tr. at 9916-19, 9924, 9928, 9933.) Dr. Johnson testified the Lafortune study itself indicated that differences identified were "judgment calls." (Tr. at 9929.) Dr. Johnson further testified that, if the differences were of consequence, Lafortune would not have cited Dr. Johnson's work and Dr. Johnson would not have cited Lafortune's work. (Tr. at 9929, 9932-33.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

2069. Dr. Johnson acknowledged that there had been large spending increases in school funding between 1970 and 2000, which more than doubled spending (after adjusting for inflation), and that these large spending increases have not addressed the achievement gap as he predicted. (Tr. at 9950.) Dr. Johnson testified that he uses the CPI-U when he adjusts for inflation because “it is the standard in the field.” (Tr. at 9746.)

2070. Dr. Johnson testified that his study mostly looked at cohorts of students born between 1955 and 1985, which corresponded with school funding reforms that happened in the 1970s, 80s, and 90s. (Tr. at 9421.) Dr. Johnson agreed on cross-examination there is still an ongoing question as to whether there is a diminishing marginal return on increases to education spending because his studies were focused on a time when annual per pupil spending was approximately \$4,500, and today's spending figures are approximately \$15,000 per pupil. (Tr. at 9696-98.) Dr. Johnson acknowledged that a 2019 article he wrote with Dr. Jackson recognized the possibility of diminishing returns could mean “that the contemporary magnitude of the effects may be smaller than those” presented in their study. (Tr. at 9696-98, 9797-98.) However, Dr. Johnson explained that, even if the returns are reduced, the increases still pay for themselves and that he wrote, in the same article, that the returns on education have increased in that time. (Tr. at 9963-64.) According to Dr. Johnson, there were empirical reasons to expect the returns on school funding increases would potentially be as large as in the past. (Tr. at 9963-64.)

*241 2071. Dr. Johnson also testified that his 2016 study relies on the assertion that school financing reforms are exogenous events that are unassociated with the underlying school financing system. (Tr. at 9889-90.) While Legislative Respondents' expert Max Eden questioned this assertion based on the position that court-ordered school finance reforms are not “random events” that lead to an unexpected influx of additional funding because court orders do not exist in a pure vacuum, (Tr. at 13412-14), Dr. Johnson explained that spending changes resulting from court orders are harder for school districts to anticipate and are, as economists say, “shocks, like exogenous changes,” meaning that they are changes that are independent from other school funding changes, family characteristics, district characteristics, and are outside a school district's control. (Tr. at 9889, 9892-93, 9902-04, 9946-47, 9980.) Dr. Johnson distinguished court-

ordered reforms, which are exogenous, from legislative reforms, which “often come as a response to some economic pressure of conditions like the Great Recession.” (Tr. at 9892-94.)

2072. The Court finds Dr. Johnson's testimony and opinions credible and persuasive. While the Coleman Report and Dr. Hanushek's studies reached conclusions different than Dr. Johnson's regarding the impact of increased funding on student achievement, the Court finds that Dr. Johnson's more recent study applied more sophisticated methods to exclude factors other than the increase in school funding resulting from court-ordered reforms. While cross-examination challenged some aspects of Dr. Johnson's methodology and questioned some of his opinions, the Court is generally persuaded by his responses to these challenges, as well as to Legislative Respondents' experts' criticisms of Dr. Johnson's studies. Although the impact of school funding on student achievement, and whether an increase in that funding will result in a reduction of the achievement gap between low-income and high-income school districts is a topic of debate, the Court finds that Dr. Johnson provided credible testimony to support the ongoing validity of his studies and opinions. Accordingly, the Court gives Dr. Johnson's testimony more weight than Legislative Respondents' witnesses' contrary testimony.

2. Respondents

a. *Christine Rossell*

2073. Dr. Christine Rossell has a Ph.D. in political science from the University of Southern California and specializes in “educational policy, school desegregation, bilingual education, [ELL] issues, research methods, and public policy analysis.” (Tr. at 11790-91.) Dr. Rossell is a professor emeritus of political science at Boston University. (Tr. at 11793.) Dr. Rossell was qualified as an expert in evaluating the quality of education of ELL students. (Tr. at 11812.)

2074. Dr. Rossell testified that Pennsylvania identifies students as ELL by first distributing surveys asking families to state the child's first language, the language spoken at home, and the language the parent speaks to the child. The process may also involve an interview with the family and

William Penn School District; Panther Valley School..., Not Reported in Atl....

a review of the child's academic record if the child was in school before. The final step is an English proficiency test. (Tr. at 11813-14.) There are two English proficiency tests for kindergarten students – KW and KN – and a different test for grades 1 through 12 – the WIDA test. (Tr. at 11814.) Students who score above a “cut” score are not classified as ELL students, and students who score below the cut score are classified as ELL students. The cut scores differ slightly from one state to the next. (Tr. at 11814-15.)

2075. Dr. Rossell explained that once a student is classified as an ELL, Pennsylvania uses the ACCESS for ELL 2.0 test and the PSSA to assess the student. (Tr. at 11815.) The ACCESS for ELL 2.0 test is an English proficiency test administered annually and intended to assess whether a student is ready to be redesignated as fluent English proficient. (Tr. at 11815-16.) The ACCESS for ELL 2.0 test is scored on a scale of 100 to 600, which is then converted to a score of 1 to 6. When mapped on a graph, the results of the ACCESS for ELL 2.0 test generally creates a rough bell curve, where most students score in the middle, and fewer students score at the top and bottom. (Tr. at 11816-17.)

*242 2076. According to Dr. Rossell, it is difficult to differentiate a need for special education from a lack of English proficiency. (Tr. at 12072.)

2077. With regard to ELL students and standardized testing, Dr. Rossell testified that, as their scores increase, the English-learner designation is removed, which differs from students with disabilities or disadvantaged students. This means, according to Dr. Rossell, that the standardized test scores for ELL students will always consist of the lowest scores. Thus, Dr. Rossell opined, standardized tests are less reliable and are flawed at measuring the quality of English learner education. (Tr. at 11885-86, 11888; LRD2-00013; LRD2-00014.)

2078. Dr. Rossell also provided her opinions on the reliability of standardized testing, including the PSSAs, in general, which she believed were not reliable indicators of whether students receive an adequate education, particularly for ELL students. (Tr. at 11882, 11885-86, 11888.) Dr. Rossell opined that student outcomes on these tests depend on and are impacted by many personal, family, and community factors. (Tr. at 11883, 11892-93.) Dr. Rossell testified “[g]ood statistical analyses demonstrate that only about 25% of academic achievement on standardized tests is explained by

what goes on in schools.” (Tr. at 11883.) Although she said she could cite to specific studies, she did not, and to the extent citations may be in her expert report, that was not admitted into evidence. (Tr. at 11883-84, 11892.)

2079. According to Dr. Rossell, economically-disadvantaged students typically score lower on standardized tests than non-economically-disadvantaged students. (Tr. at 12069.)

2080. Based on her observations of thousands of standardized test results in 15 to 20 states, Dr. Rossell opined that they generally generate bell curves. (Tr. at 11850-51.) In Dr. Rossell's opinion, using standardized test scores to evaluate the quality of education is a misuse of the data because she believes standardized tests are designed to always produce a bell curve where half of test takers score above a midpoint and half score below. (Tr. at 11858, 11882-83.) Dr. Rossell believes standardized test questions are field tested with the aim of generating questions that not every student will get right or wrong. (Tr. at 11861-62.) In her opinion, standardized tests are designed to create a bell curve because they are intended to differentiate students and rank order them. (Tr. at 11869-70.) According to Dr. Rossell, a test development goal of the PSSA is to include a wide range of item difficulties because items that are either very hard or very easy provide little information about student differences in achievement. (Tr. 11868-69; LR-04217-00113.) Dr. Rossell opined that a discriminating item on a standardized test means that the item differentiates students by some students getting the question right and other students getting the question wrong. (Tr. at 11872-73.) Dr. Rossell believes, with regard to test construction, that if too many students get a question right, the question is removed from the exam; and, if too many students get a question wrong, it is removed from the exam. (Tr. at 12064.)

*243 2081. Dr. Rossell testified that, in her opinion, the PSSA results generate a rough bell curve and the PSSAs are modified with the intent to produce a bell curve. (Tr. 11839-40, 11979-84.) For example, Dr. Rossell testified that when scores are increasing overall, test designers, including those in Pennsylvania, typically renorm the exam so that it is more difficult. (Tr. at 12064.) Dr. Rossell asserted that although she was unfamiliar with the details of how the PSSAs were developed, revised, and scored, she was in a better position to know how the PSSAs were constructed than former Deputy Secretary Stem because she was able to see

William Penn School District; Panther Valley School..., Not Reported in Atl....

a “rough bell curve” in the test outcomes. (Tr. at 11980-82.) She further testified that PSSA scores, with respect to ELL students in particular, display as a bell curve on ELA but not on math and science, which many experts believe is a result of the archaic and difficult language used in math and science that is particularly challenging for ELL students to comprehend. (Tr. at 11847; LRD2-00003; LRD2-00004.)

2082. Dr. Rossell also testified that while she does not know about the state's standards-based, criterion-referenced English proficiency test, ACCESS, she “has no reason to dispute that it's not like any other oral proficiency test.” (Tr. at 11952-53.) She also testified that she relied upon her four decades of experience in examining English proficiency tests, as well as taking the exams herself. (Tr. at 11953-54.) She testified, based on her experience, that “[s]tandards-based criterion-referenced tests are people trying to come up with something that makes sense to them, but they still want to differentiate students.” (Tr. at 11972.) She said this was “[b]ecause if everybody scored high, no one would respect the test and if everybody scored low, similarly, no one would respect the test.” (Tr. at 11972-73.)

2083. Dr. Rossell's testimony on the design of the PSSA, that it is designed to produce a bell curve and that questions are removed if they get too many correct answers, conflicts with former Deputy Secretary Stem's and Executive Director Molchanow's credible testimony to the contrary. (Tr. at 1656, 2202-03, 2185-90, 4336-37, 4372.) Additionally, Dr. Rossell admitted that she did not consult with anyone at the Department to validate her hypothesis that PSSAs were modified with the intent to produce a bell curve. (Tr. at 11909-10.) Nor did Dr. Rossell consult with the psychometricians involved with the design of the PSSAs or any psychometricians associated with the Department. (Tr. at 11910.) Accordingly, the Court is not persuaded by Dr. Rossell's testimony in this regard and gives it no weight.⁶⁸

2084. Dr. Rossell conceded that for test results she had characterized as forming a “rough bell curve,” the results were not symmetric, asymptotic, or accurately based upon the mean and median scores — all core features of a normal distribution model. (Tr. at 11929-31.) Rather, Dr. Rossell acknowledged that her evaluation of the data consisted of giving the graphs “an eyeball test” to determine whether even test results that lacked normal distribution looked

like “approximate” or “rough” bell curves, contending that “everybody sees them.” (Tr. at 11931-32, 11938-40.) Dr. Rossell's only explanation for those few results that she did concede were not bell curves was that she did not “know what went wrong with that.” (Tr. at 11955.)

2085. Finally, Dr. Rossell admitted that she is not a psychometrician, has never taken a course on psychometrics, and is not a member of the National Council of Measurement in Education, although she is a member of the American Education and Research Association. (Tr. at 11803-04.) Dr. Rossell has never participated in the design or validity testing of standardized tests and was unfamiliar with the basic processes involved in creating a criterion-referenced test. (Tr. at 11804, 11976.) Dr. Rossell was also not familiar with terms describing the primary characteristics of and basic theories relating to normal distribution models. (Tr. at 11924-27.)

*244 2086. For the foregoing reasons, the Court is not persuaded by Dr. Rossell's testimony regarding the design and validity of standardized testing, including the PSSAs. That testimony was, essentially, a generalized attack on standardized testing. Accordingly, the Court gives Dr. Rossell's testimony and opinions no weight.⁶⁹

b. Jason Willis

2087. Jason Willis works as a Director of WestEd, “a national research development and technical assistance agency” that supports school districts and state, local, and regional entities to improve the way they deliver services, most notably public education, to children. (Tr. at 12671-72.) Mr. Willis explained that, in his five years with WestEd, he has worked with dozens of school districts and over a dozen-and-a-half states across the country to help those entities rethink how they use resources to serve children. (Tr. at 12675.) Mr. Willis testified that he recently has worked with states such as Arkansas, California, Delaware, Kansas, Maryland, Nevada, New Mexico, North Carolina, and Utah. (Tr. at 12676.) Mr. Willis testified that he has, among other work, engaged in several adequacy studies, and state comparative analyses, comparing the finance systems or a portion of the finance system of his client's state to other states. (Tr. at 12676-77, 12679.) Mr. Willis indicated that, prior to his time with WestEd, he served as Assistant Superintendent with the San

William Penn School District; Panther Valley School..., Not Reported in Atl....

Jose Unified School District. (Tr. at 12671.) Legislative Respondents presented Dr. Willis, and the Court accepted Mr. Willis, as an expert witness in the area of school financing and financial data analysis. (Tr. at 12685-86.)

2088. According to Mr. Willis, WestEd uses collaborative teams, so that individuals with different skill sets can contribute to the overall analysis and findings. (Tr. at 12689.) In the analysis for this case, Mr. Willis testified he was assisted by several other members of the WestEd team but that all of the work was conducted under his supervision and the opinions offered were his own. (Tr. at 12689-90.)

2089. Based on his expert analysis in this case, Mr. Willis stated that he disagreed with the Petitioners' characterization that "Respondents have adopted an irrational and inequitable school financing arrangement that drastically underfunds school districts across the Commonwealth." (Tr. at 12702-03.) Mr. Willis testified that a significant portion of Pennsylvania's budget is invested in public education, its funding of education has increased over time, and over the course of the past five to six years, he believes Pennsylvania is "aiming to address issues of inequitable distribution of funding." (Tr. at 12688, 12702-03.) Additionally, Mr. Willis opined that Pennsylvania's investment in public education as compared to many of its peer states is substantially higher. (Tr. at 12702-04.)

2090. Mr. Willis testified that, as part of its analysis, WestEd identified a group of eight states that were selected as peer states based on a three-step analysis consisting of the following: (1) identifying all states that border Pennsylvania and looking at significant characteristics of each, including the percentage of population living in rural and urban districts; (2) looking at states with similar "student enrollment and enrollment patterns"; and (3) applying a statistical technique known as the "coefficient of variation," in which it looks at the concentration of similar data such as family income, high school graduation rate, preschool enrollment, kindergarten enrollment, outcome measures, and adult educational attainment. (Tr. at 12771-79.) From this three-step analysis, Mr. Willis identified what WestEd considered Pennsylvania's peer group to be as Delaware, Maryland, New York, Ohio, Michigan, Illinois, Arkansas, and Texas. WestEd compiled an exhibit purporting to show six-year per pupil expenditures in Pennsylvania and its peer states for years 2011 to 2016, adjusted for 2019 dollars. (Tr.

at 12772-76.) Mr. Willis testified that, of the peer states, according to WestEd, Pennsylvania ranks third at \$15,452 per pupil and that the lowest peer is Texas at \$9,706 per pupil. (Tr. at 12771-75, 12778-80; LRD1-00010.)

*245 2091. On cross-examination, Petitioners questioned Mr. Willis's inclusion of certain states and exclusion of others. (Tr. at 13159-64.) Absent from Mr. Willis's list was New Jersey, which Mr. Willis agreed is Pennsylvania's neighbor, labor and housing market competitor, and a state known for spending significant sums on public education and high grades on the national report cards upon which Mr. Willis relied. (Tr. at 13159-61.) Mr. Willis explained that New Jersey is not included primarily because over 90% of its population resides in an urban center, which he believes is significantly different from Pennsylvania and other peer states. (Tr. at 12776-77, 13160-61.) However, Dr. Kelly opined that this was not a credible justification because Pennsylvania and New Jersey were closer by that measure than Pennsylvania and Arkansas, and yet Arkansas was included in Mr. Willis's analysis. (Tr. at 14502-03.) Dr. Kelly further noted that New Jersey and Pennsylvania are cohorts on the regional measure of inflation used by Mr. Willis. (Tr. at 14502-03.) Mr. Willis explained that Arkansas was included based on the coefficient of variable analysis because it demonstrated similarities with Pennsylvania. (Tr. at 12775-76.) On the inclusion of Arkansas in this study, Mr. Willis admitted that in his prior analysis that had been conducted for Arkansas, he identified approximately a third of the country as Arkansas's peers – but not Pennsylvania – because WestEd was engaged by the Arkansas Legislature, which "had a very strong feeling who those peer states would be." (Tr. at 13162-64.) The Court observes that this last point raises questions as to the independence of Mr. Willis's choice of peer states and whether such choice can be driven by non-scientific factors, including the client's desired results.

2092. Mr. Willis testified that compared to other states, Pennsylvania schools receive a high proportion of their funding from local taxes. (Tr. at 12790; LRD1-00011.) However, Mr. Willis explained that this does not mean that Pennsylvania provides low levels of state funding. (Tr. at 12790-91.) In his opinion, looking at local funding compared to state funding is not "a particularly meaningful factor in considering Pennsylvania's commitment to education" because he believes it "has no bearing on academic

William Penn School District; Panther Valley School..., Not Reported in Atl....

achievement overall or among student groups” among the peer states that he analyzed. (Tr. at 12792-93)

2093. Based on NCES data from 2015-16, Mr. Willis testified Pennsylvania compares favorably to its peer states in Total Per-Pupil Revenues and is only behind New York and Maryland. (Tr. at 12791-92.) In his opinion, Pennsylvania is in the middle of the pack in how it compares in just State Revenue Per Pupil to its peer states. (Tr. at 12791-92.) Mr. Willis opined that when state revenues are added to local funding for public schools, Pennsylvania does “really well” with respect to “overall funding compared to [its] peers and overall funding effort.” (Tr. at 12794-95.)

2094. Mr. Willis testified that, relative to its peer states, Pennsylvania tends to rely less on property taxes as a source of local revenue. (Tr. at 12697-98, 12793.) Mr. Willis explained that this was significant because high reliance on local property taxes “can create wealth disparities between communities.” (Tr. at 12793-94.) According to Mr. Willis, allowing districts to raise revenue from other types of local sources gives districts the ability to raise additional money. (Tr. at 12794.) Mr. Willis testified that the Local Effort Capacity Index looks at how much funding effort a community is making towards its schools “relative to the capacity within the community itself.” (Tr. at 12852.)

2095. Mr. Willis agreed, on cross-examination, that the “balance between state and local revenues comes with important equity implications” because, among other things, these “disparities in local property and income wealth mean that some school districts” will “be able to raise significantly higher local revenues than other districts despite making a lower level of tax effort.” (Tr. at 12928-29.) Mr. Willis acknowledged that the touchstone principle in the evaluation of a school funding system is “that there should be little to no relationship between local wealth ... and the amount of resources available to a local school district.” (Tr. at 12928-30.)

2096. Mr. Willis conceded that, overall, Petitioner Districts have below average household incomes, are in high poverty communities, serve a higher-needs population than the state on average, and make higher than typical tax effort. (Tr. at 12849, 12875-76, 12878.)

2097. Mr. Willis testified that WestEd utilized a common statistical method known as synthetic control group analysis to look at the allocation of state resources to Pennsylvania school districts both prior to and after the implementation of Act 35. (Tr. at 12691-92, 12810-11.) Mr. Willis opined that since Act 35 was enacted, there has been some impact on the distribution of state funding to lower wealth, higher need communities. (Tr. at 12811-15.) This trend has increased in recent years as more dollars have been added to the Commonwealth's education budget and those additional funds have passed through the Fair Funding Formula. (Tr. at 112814-15.) To demonstrate this, Mr. Willis testified that he created a chart with scatterplots where his Y axis represented “the percentage increase in state revenue” that districts received under the Fair Funding Formula, while the X axis represented “the percent increase in average daily membership from the [Act 35] weights.” (Tr. at 12812-13.) Ostensibly, Mr. Willis attempted to look at the connection between a school district's need — represented by their student weights from Act 35 — and the increases in funding they have received since Act 35 was enacted. (Tr. at 12810, 12812-13.)

*246 2098. Mr. Willis testified that the hold harmless provision of Act 35 is a common technique used by states so as not to harm school districts that would receive less funding after the passage of the formula. (Tr. at 12827-28.) Mr. Willis testified that almost every state that changes its funding formula includes a similar provision. Based on his expertise in school financing, he testified that he does not find the use of hold harmless to be unreasonable. (Tr. at 12827-28.)

2099. Mr. Willis testified that high needs districts are seeing “a slightly increasing amount of additional state revenue” through Act 35 and benefit more from the money flowing through the Fair Funding Formula. (Tr. at 12813-15.) In Mr. Willis's analysis, from 2014-15 to 2021-22, the change in percent BEF in inflation-adjusted dollars (using CPI) was 9% across the entire state. For the Petitioner Districts, Mr. Willis explained that the change in percent of BEF in inflation-adjusted dollars for each district was 22% for Greater Johnstown, 15% for Lancaster, 31% for Wilkes-Barre, 17% for Panther Valley, 14% for William Penn, 15% for Shenandoah Valley, and 15% for SDP. (Tr. at 12813-15, 12825-26; LRD1-00020.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

2100. Mr. Willis testified that, since the Fair Funding Formula was enacted, each of the Petitioner Districts has received consistent year-over-year increases in BEF, even as adjusted for inflation. (Tr. at 12815-20.) According to Mr. Willis's analysis, the Petitioner Districts received the following inflation-adjusted increases in BEF:

- a. William Penn – 2015-16: 3.3%; 2016-17: 4.2%; 2017-18: 1.3%; 2018-19: 1.9%; 2019-20: 3.9%. (LRD1-00014.)
- b. Lancaster – 2015-16: 4.3%; 2016-17: 6.1%; 2017-18: 2.7%; 2018-19: 1.7%; 2019-20: 1.8%. (LRD1-00015.)
- c. Greater Johnstown – 2015-16: 3.7%; 2016-17: 4.4%; 2017-18: 2.0%; 2018-19: 3.9%; 2019-20: 2.2%. (LRD1-00016.)
- d. Wilkes-Barre – 2015-16: 5.7%; 2016-17: 7.0%; 2017-18: 3.3%; 2018-19: 4.1%; 2019-20: 5.3%. (LRD1-00017.)
- e. Shenandoah Valley – 2015-16: 3.6%; 2016-17: 4.8%; 2017-18: 1.5%; 2018-19: 5.1%; 2019-20: 5.3%. (LRD1-00018.)
- f. Panther Valley – 2015-16: 4.1%; 2016-17: 5.2%; 2017-18: 2.2%; 2018-19: 2.1%; 2019-20: 2.9%. (LRD1-00019.)

(Tr. at 12815-20.)

2101. However, on cross-examination, Mr. Willis was presented with Department documents that he agreed would be those which he used to construct his metrics, and he agreed that he was presented on the stand with an approximate method by which his numbers were calculated. (Tr. at 13142-59.) Yet those calculations, when done in Court, revealed unexplainable discrepancies by Mr. Willis. (Tr. at 13148-59.) For example, Mr. Willis purported to calculate how much a school district's raw ADM changes from the weights of the Fair Funding Formula. (Tr. at 13148-59.) In his report, on a statewide basis, the range of values that Mr. Willis found for those changes in a school district's weights were between 12% and 20%, (Tr. at 13143), but the actual range of values from Act 35's weights, as demonstrated while Mr. Willis was on the stand, were between 2% and 70%, (Tr. at 13147-50). Although Mr. Willis attempted to explain away these discrepancies, including that his scatterplot did not

“look[] at individual [P]etitioner [D]istricts” or even compare Pennsylvania districts to each other, but with a “synthetic control peer outside of ... Pennsylvania,” (Tr. at 13151-52, 13158-59), the Court is not convinced by the explanations.

2102. Moreover, Mr. Willis's opinion, based on this analysis, that Petitioner Districts were below the median in average need of Pennsylvania school districts, is inconsistent with his admission that Petitioner Districts all came from high-poverty communities with above-average levels of need. (Tr. at 12875-76.) As demonstrated during cross-examination, recreating the same methods Mr. Willis purported to use shows that every Petitioner District represents some of the highest need districts in the state, and actually should have been off Mr. Willis's scale entirely. (Tr. at 13148-59.) When asked about the discrepancy and how it could be possible that the Petitioner Districts could be calculated as being “below the median in student need,” Mr. Willis could offer no convincing explanation for this discrepancy. (Tr. at 13158-59.) Finally, even if there were no errors, Mr. Willis found increases in school district funding since the passage of Act 35 to only be “very weakly related” to the needs identified by the Fair Funding Formula, and, if those calculations were erroneous, it was “very plausible” that the relationship he found would be even more weakly related. (Tr. at 13159.) Thus, there is a question whether the increases since the enactment of Act 35 have addressed the needs identified in the Fair Funding Formula. Because Mr. Willis's calculations for his synthetic control analysis were premised on calculation errors that Mr. Willis could not convincingly explain, the Court does not give them much weight. (Tr. at 13156-59.)

*247 2103. Mr. Willis opined that increases in state funding can have an impact on local revenues in public education through what he called “the flypaper effect,” meaning that when one entity “contribute[s] higher degrees of resources to a local community,” then local communities “tend to pull back on the amount of resources that they are contributing to that -- public service.” (Tr. at 12829-30.) Mr. Willis testified that this “flypaper effect” is mildly observable in Pennsylvania because between the passage of Act 35 in 2016 and 2018, non-Petitioner Districts increased funding from local sources by 6.6% while the Petitioner Districts only increased local funding by 3.2%. (Tr. at 12830-32.)

2104. Mr. Willis explained that the use of a weighted student headcount is how the Fair Funding Formula approximates

William Penn School District; Panther Valley School..., Not Reported in Atl....

the relative needs of a school district's student body. (Tr. at 12812-13.)

2105. Mr. Willis testified regarding increases in education funding adjusted for inflation. (Tr. at 12746.) Mr. Willis used the CPI-U for the Mid-Atlantic region as his inflationary index, rather than the Act 1 Index set forth in the School Code, which he asserted is what Dr. Kelly used. (Tr. at 12737, 12745.) Using the CPI-U in his analysis, as of the 2019-20 fiscal year, Mr. Willis opined that total public education spending in Pennsylvania from all sources had increased “year over year” between 2008-09 when it was \$27.87 billion and 2019-20 when it was \$33.5 billion in inflation-adjusted dollars. (Tr. at 12742-43.)

2106. Mr. Willis explained that he typically uses the CPI when adjusting for inflation in his work and did so in his analysis for this case because the CPI is an index that is developed by the federal government and is a consistently updated metric used across the country. (Tr. at 12737.) Mr. Willis further explained he believes the CPI is preferable to the Act 1 Index because he believes the Act 1 Index is “meant to be able to adjust property tax caps in local districts as a means for those school districts to raise additional revenue.” (Tr. at 12738, 1240-42.) According to Mr. Willis, the purpose and intent of the Act 1 Index is slightly different from the CPI's, which primarily looks at adjustments for costs that are out of a district's control. (Tr. at 12738.) The second reason is that other states have their own form of a cost of education index and these indexes “are subject to a lot of influence.” (Tr. at 12739-42.) In his opinion, the CPI is “an independent, economically and financially-driven index that[is] both stable and widely applied in the research community.” (Tr. at 12739.)

2107. Looking at state spending only, Mr. Willis calculated that from 2012-13 to 2020-21, the education subtotal of the state's budget increased by \$2.3 billion (from \$11.6 billion to \$13.9 billion) when adjusted for inflation. (Tr. at 12746-47; LRD1-00007.) In making his inflation-adjusted analysis, Mr. Willis did not consider education spending for the 2021-22 fiscal year because CPI figures were not available for the last five months of that period. (Tr. at 12747.) However, he noted that in Dr. Kelly's analysis, inflation-adjusted state education funding increased by \$200 million from 2020-21 to 2021-22. (Tr. at 12747-48.)

2108. On cross-examination, Mr. Willis's understanding of the Act 1 Index, how it was enacted, and how Dr. Kelly used that index were tested. First, although Mr. Willis testified that in other states, when measures like Act 1 are constructed “they are subject to a lot of influence, folks ... throw things in there that might help support additional dollars flowing to their communities,” he admitted he had no knowledge of the history of Act 1 or how it was constructed, including whether the General Assembly “threw things” into it. (Tr. at 12738, 13024-25.) Nor was any evidence presented that the General Assembly's own process was subject to undue influence. Second, Mr. Willis testified that, rather than being a simple inflation measure, the Act 1 Index allows for adjustments for the wealth of a district. (Tr. at 12738, 13023.) Yet, Dr. Kelly explained, Act 1 itself demonstrates, and Mr. Willis eventually conceded, the Act 1 Base Index, which is what Dr. Kelly used in his analysis, is merely an average of two wage indices and does not take wealth into account. (Tr. at 13028, 14493-96.) Dr. Kelly explained, and the Court agrees, that Mr. Willis conflated an additional set of measures from Act 1, which allow poorer districts to raise their taxes higher than the base index. (Tr. at 12738-30, 13025, 13023, 13028-29 14493-96; PX-01843.) While Mr. Willis provided two reasons for not using the Act 1 Index, those criticisms do not undermine the use of the Act 1 Base Index, which is what Dr. Kelly used in his analysis rather than the CPI-U. (Tr. at 14495-97.)

*248 2109. According to Mr. Willis, rising teacher pension costs are an issue in almost every state in the union and is not a unique problem to Pennsylvania. (Tr. at 12861.) Mr. Willis testified that the General Assembly has attempted to address the issue of rising pension costs in a few ways, including through the enactment of Act 5 of 2017, Act of June 2, 2017, P.L. 11, No. 5, which moved newly hired teachers from a defined benefit system to a defined contribution system. (Tr. at 128612-63.)

2110. Mr. Willis testified about charter schools and the impact of charter school tuition on school funding. According to Mr. Willis, Dr. Kelly “mischaracterize[d] the role of charter schools ... and in particular, the fiscal impact of charter school ... tuition payments.” (Tr. at 12864.) Mr. Willis opined, the number of a school district's students who attend charter schools, which is increasing, is directly related to the district's expenditures because a school district should be “able to reduce its expenditures relative to those students no longer

William Penn School District; Panther Valley School..., Not Reported in Atl....

being in their system.” (Tr. at 12864-65.) Mr. Willis testified that as charter schools are established in communities, students tend to leave district schools not as 1 or 2 students, but in “bundles,” *e.g.*, of 20, 50, 100, 200. (Tr. at 12865.) In Mr. Willis's opinion, school districts have “mechanisms” for adjusting staffing and other expenses to account for the migration of those students to charter schools. (Tr. at 12865.) While this does not mean that all expenses associated with these students can be saved, Mr. Willis testified he believes school districts should be able to make adjustments to offset a proportion of the revenues attributable to students no longer attending the district's schools. (Tr. at 12865-66.)

2111. However, Mr. Willis's understanding of the alleged savings that a school district can experience when students move to a charter school does not comport with the credible testimony of Mr. Monson of the SDP, who testified about charter school special education tuition rates that do not actually account for the costs to educate students with varying needs of disabilities, and the stranded costs associated with charter school students, amounting to \$4,000 per student, because there is still staff to pay and buildings to support. (Tr. at 10259-66; FOF ¶ 1624.) Dr. Kelly similarly testified about the existence of stranded costs that remain when students leave for a charter school, explaining that if a student leaves a 28-student class, the costs related to that student, such as the teacher, heat, and electricity, will not be reduced by 1/28th. (Tr. at 1268-69; *see* FOF ¶ 1910.) Thus, although there may be some savings, the Court is not persuaded by Mr. Willis's testimony as to the extent of that savings.

2112. Mr. Willis testified that, in considering whether Pennsylvania's current funding system was reducing the achievement gap, he reviewed NAEP scores and opined that “Pennsylvania outperforms its peers” in national reading and math metrics and “has been making progress towards closing some of the poverty-based achievement gaps.” (Tr. at 12699.)

2113. Mr. Willis testified that he also looked at various sources to assess Pennsylvania's academic achievement, including the Nation's Report Card, *Education Week's* Annual Report Card on School Quality, sometimes referred to as the “Quality Counts” report, and the Rutgers Education Law Center's Making the Grade report. (Tr. at 12758-59, 12767-68.) Mr. Willis indicated that, in his opinion, this allowed WestEd to compare Pennsylvania to itself over time and to compare Pennsylvania to other states.

(Tr. at 12758-59.) Mr. Willis explained that he believes his analysis shows that Pennsylvania's achievement has increased over time, and that recently the Commonwealth “has been making some modest progress toward closing” academic achievement gaps. (Tr. at 12758-60.) However, Mr. Willis also noted that there had been a slight decline in Pennsylvania's overall achievement. (Tr. at 12760.)

*249 2114. Mr. Willis testified that he reviewed the 2019 Quality Counts Chance for Success Index Measure, which analyzes a variety of indicators regarding conditions around a student, such as parent education, parent employment, and family income, and then compared Pennsylvania against its selected peer states. (Tr. at 12782-83.) According to Mr. Willis, this metric also looks at 4th and 8th grade achievement measures, as well as adult outcomes, such as education level, employment, and stability of employment. (Tr. at 12783.) Under this metric, Mr. Willis testified, Pennsylvania ranked toward the top of its peer states, with a B minus grade, and there were only two peer states ahead of Pennsylvania. (Tr. at 12782-83.)

2115. Mr. Willis testified that he also looked at the Quality Counts K through 12 Achievement Index⁷⁰, which he believes is a source regularly relied upon in the field. (Tr. at 12762-63.) This Achievement Index, according to Mr. Willis, looks at an overall level of achievement occurring in a state, changes in that achievement level, and the gaps between certain student groups, specifically the gaps between communities that have higher need versus lower need. (Tr. at 12762-63.) Mr. Willis indicated that the Quality Counts K through 12 Achievement Index includes an equity grade that looks at differences between those student populations that are higher need as compared to other student populations. (Tr. at 12764-65.) Mr. Willis testified this index considers states' abilities to close the achievement gap and in doing so measures achievement scores. (Tr. at 12764-65.) Mr. Willis explained that by looking at how achievement changes over time, one is provided with much more information about the efforts that a state is making to help students achieve at greater levels. (Tr. at 12765.) According to Mr. Willis, Quality Counts assigns a letter to its equity grade, Pennsylvania achieved a “B” and compares relatively favorably to other states. (Tr. at 12762-66.) Mr. Willis said the Quality Counts Report also includes a component called the School Finance Report which examines per pupil spending and compares resources going to

William Penn School District; Panther Valley School..., Not Reported in Atl....

different communities. Pennsylvania received a “B” on that Report. (Tr. at 12766-67).

2116. Mr. Willis also relied on the Making the Grade report, prepared by the Rutgers Education Law Center, which he testified gave Pennsylvania an “A” on two “equity-focused” grades issued by report, for funding level and effort. (Tr. at 12767-69.) Mr. Willis agreed that the Rutgers Education Law Center published a correction to its “Making the Grade” report after concluding that the student count data in some states, including Pennsylvania, did not include students who attended charter schools. (Tr. at 12769-70.) Mr. Willis explained that this change did not have any significance because “[t]he grades for ... Pennsylvania remain[ed] the same.” (Tr. at 12769.)

2117. On cross-examination, Mr. Willis was questioned about his previous testimony that Making the Grade gave two equity grades, on which Pennsylvania received an “A,” when Making the Grade also gives a third equity grade, called Funding Distribution, that he did not consider in his report. (Tr. at 13046-49.) Mr. Willis admitted that Making the Grade publishes an equity-focused grade that he had omitted from both his report and testimony without noting the omission in his report. (Tr. at 13045-47.) Mr. Willis ultimately explained that he disagreed with how Making the Grade's Funding Distribution equity grade is calculated, although it is unclear why he did not include that grade. (Tr. at 13046, 13053.) Mr. Willis ultimately conceded on cross-examination that Pennsylvania initially received a grade of “C.” (Tr. at 13048-49.) And, although Mr. Willis initially testified that Pennsylvania's grades remained the same after the Making the Grade Report was updated, he acknowledged that Pennsylvania's Funding Distribution equity grade was revised downward from a “C” to an “F” because of the correction. (Tr. at 13046-49, 13053.)

*250 2118. The reason Making the Grade provided for revising Pennsylvania's equity grade is instructive:

[T]he census membership definition leads to incorrect per-pupil revenue figures for some districts in some states. The F33's⁷¹ survey membership count does not include students who are residents of a district but attend independent charter schools.

....

In many states, these districts are financially responsible for those charter students and make payment to the charter schools their resident students attend. Because the F33 data includes the revenues that will ultimately be passed to charter schools, but exclude the charter students in the membership count, per-pupil revenues in districts with significant charter populations are incorrectly inflated. For example, in the F33 reports Philadelphia's membership has, approximately, 134,000, excluding more than 70,000 students who are funded through the district but attend charter schools.

(Tr. at 13049-50, 13052.)

2119. Making the Grade further noted that correcting for the error made particularly significant differences in evaluating the funding equity of states like Pennsylvania because “[t]hese states have reasonably large charter populations that are concentrated in high-poverty districts. The inflated per-pupil revenues in mostly high-poverty districts made these states look more progressive than they actually are.” (Tr. at 13049-50, 13052.)

2120. On cross-examination, Mr. Willis agreed that *Education Week* does not provide much detail on which specific revenues and expenditures are included in its analyses and that his own report acknowledged that *Education Week* does not provide detailed and technical information about how Pennsylvania fared on those indicators, although he stated that there is a source appendix with some detailed sources. (Tr. at 13029-35.) Mr. Willis explained he needed to rely on *Education Week*, however, because he did not have access to the detailed state financial information upon which he normally relies. (Tr. at 13034-35.) Mr. Willis acknowledged that he had stated in his Utah State Report that *Education Week* groups the majority of states very close together, and as a result, “it's hard to assign much significance to the score of any given state,” (Tr. at 13035-38), and that *Education Week* deviates from his own preferred approach, with limited results that deviate from best practices, requiring him to find and look at other data. (Tr. at 13039-41.) Mr. Willis explained that the State of Utah was asking about “other non-monetary resources that were contributing to schools,” and so these statements should be understood in that “context.” (Tr. at 13032, 13037-41.) The need for Mr. Willis to have to rely on a data source which he had previously questioned, because “the

William Penn School District; Panther Valley School..., Not Reported in Atl....

financial information that we would typically have access to in most of our state investigations ... we did not have access to that,” undermines the results he reaches in his report. (Tr. at 13039-41.)

***251** 2121. In addition to the opinions discussed above, Mr. Willis testified that WestEd performed a vertical equity analysis, which looked at the amount of total funding going to school communities in each wealth ventile (all the school districts in Pennsylvania broken up into “20 equal buckets”), calculated an adjusted per-pupil cost for districts, and conducted efficiency analyses on school spending for each of the Petitioner Districts and their selected peers school districts. (Tr. at 12796, 12800, 12832-34.) During cross-examination, Mr. Willis was questioned regarding whether his conclusions on these topics were erroneous, in that, for the first two analyses, they included school district revenues that were passed through to charter schools, while omitting charter school students from the total student count for those districts, and, for the third analysis, failed to identify true peer school districts against which to compare Petitioner Districts. (*See generally* Tr. at 13082-112, 13123-37.)

2122. The vertical equity analysis, according to Mr. Willis, “looks at the amount of funding that [is] going to each of the school communities in ... Pennsylvania” and measures “how resources are associated with going to communities of higher need,” meaning, among others, students with low-income backgrounds, ELL students, and students in special education. (Tr. at 12796.) To perform this analysis, Mr. Willis testified that he “used some ... expenditure files in order to construct a per-pupil funding amount,” which were then adjusted for need – one adjustment was made for low-income students and one for ELL students. (Tr. at 12798-99.) Mr. Willis explained that he found that “Pennsylvania has been allocating its resources in a semi-equitable manner to some of those higher-need communities.” (Tr. at 12799-800.) Based on his calculations, Mr. Willis testified that he created a table with ventiles that reflected the average level of need of Pennsylvania schools and the “actual per-pupil funding” of those schools. (Tr. at 12800.) Mr. Willis agreed that this chart showed “that Pennsylvania's high-needs schools are actually getting more funding than its low-needs schools.” (Tr. at 13125; *see* Tr. at 12804-05 (describing that the higher need ventiles were receiving “amounts of per-pupil funding above the state average, [and] in some cases, [in] fairly substantial” amounts).)

2123. In reaching the conclusion that high-need school districts were receiving (and, therefore, spending) above-average per-pupil funding, Mr. Willis agreed that to arrive at his per student figure for spending he removed debt service, transportation costs, food costs, adult education expenditures, and capital project expenditures from his school district spending calculation, but did not exclude “Line 1000” amounts from his study, which are the amounts school districts receive to pay for charter school tuition. (Tr. at 13082, 13123-27, 13131-32, 13135-37.) However, Mr. Willis agreed that he used the denominator of 1.5 million students, rather than 1.7 million students, which reflects that Mr. Willis left charter students out of the calculation. (Tr. at 13123-25, 13135-37.) This was the same mistake made by Make the Grade that caused it to readjust its Pennsylvania equity score downward. When questioned about the fact that Pennsylvania schools educate 1.7 million students — which his own expert report confirmed — Mr. Willis insisted that by another Department definition, which he could not identify, the total enrollment of students was actually 1.5 million. (Tr. at 13124-25.) The statewide enrollment is 1,722,461. (Tr. at 13123-27; PX-02097, Tab “Statewide,” Row 6, Column T.)

2124. Mr. Willis's error did not simply shift relative spending upward across the board — it disproportionately inflated the per student numbers for the highest need districts. As Dr. Kelly credibly testified — and as is undisputed — poor districts in Pennsylvania have far more charter students. (Tr. at 14479, 14490.) Thus, as Dr. Kelly explained, failing to account for charter students does not inflate per-pupil revenues evenly, because high-poverty schools are disproportionately responsible for charter students. (Tr. at 14479, 14490.) Instead, it will “make high-poverty, high-need districts appear like they have more funding per-pupil than they actually do.” (Tr. at 14483-84, 14491.) Dr. Kelly testified that Mr. Willis's error “cause[d] [Mr. Willis] to misrepresent the funding levels for high-need districts and essentially invert patterns that we can see clearly in AFR data.” (Tr. at 14487.) This inversion became clear with Mr. Willis on the stand.

***252** 2125. Mr. Willis made the same error in creating a figure he termed “operating expenditures,” which he used elsewhere in his report to calculate “adjusted per-pupil district costs.” (Tr. at 13082.) Mr. Willis testified that this figure reflected a three-year average of a school district's spending,

William Penn School District; Panther Valley School..., Not Reported in Atl....

minus debt service, transportation costs, food costs, adult education expenditures, and capital project expenditures. (Tr. at 13082-83, 13095.) While not exact, Mr. Willis agreed that his number was similar to what the Department terms “current expenditures,” and by definition would be less than a district's total expenditures. (Tr. at 13083.) Although Mr. Willis removed the above five categories of expenditures from his definition of operating expenditures, he did not remove the “Line 1000” costs, relating to charter school tuition, and did not, therefore, remove charter school tuitions that school districts pay. (Tr. at 13112, 13135-36.)

2126. Because Mr. Willis calculated spending on a “per pupil” basis, Mr. Willis made a calculation error, similar to the error committed by Making the Grade, by including revenues that pay for charter school students in his numerator but dividing by a school's or district's pupils, rather than its ADM, meaning that he failed to include charter students in his denominator. For example, Mr. Willis calculated that the Chester-Upland School District has approximately \$36,000 in operating expenditures. (Tr. at 13090.) In reality, per Department numbers, on a per ADM basis, Chester-Upland's current expenditures (which Mr. Willis agreed should approximate his “operating expenditures”) for the 2017-18 year were less than half what Mr. Willis calculated, at \$17,538 per student. (Tr. at 13094-95; PX-01966, Tab “2017-18 Expenditures per ADM,” Row 203, Column I.) While Mr. Willis had no plausible explanation for this discrepancy, there is an explanation for this error. According to Department data, in the 2017-18 school year, Chester-Upland's ADM was approximately 6,890 students, but over half of those students were attending charter schools. (Tr. at 13104-05; PX-01966, Tab “2017-18 School Year,” Row 203; PX-01913, Tab “Student-Weighting,” Row 203, Columns O and S.) As a consequence, Chester-Upland paid approximately \$58.6 million dollars to charter schools and other schools during the 2017-18 budget year, accounting for nearly half of its total expenditures of \$127.4 million. (Tr. at 13105-07.) In dividing these expenditures by a “per pupil” basis, rather than by ADM, Mr. Willis effectively doubled Chester-Upland's per student spending because he left out half of the students for whom those expenditures were paying. (Tr. at 13102-07; PX-01966, Tab “2017-18 School Year,” Row 203; PD-00018-0002.) This same error occurred with multiple school districts:

Tabular or graphical material not displayable at this time.

(PD-00018-0002.) Although Mr. Willis indicated these differences were due to the use of different methodology, he ultimately acknowledged that he did not exclude “Line 1000” costs but disagreed that he made an error in his calculations. (Tr. at 13102-12.)

2127. Because it appears that the numbers and calculations performed as part of his vertical analysis and in calculating an adjusted per-pupil district costs, included revenue and expenditures for charter school students, but did not include the number of charter school students, the Court does not credit Mr. Willis's testimony regarding that analysis and those calculations.

2128. Mr. Willis described the efficiency analysis performed, in which he compared school districts and the Commonwealth to “peers” along a variety of measures. (Tr. at 12834-35.) As part of this analysis, Mr. Willis testified that he first matched Petitioner Districts with what he described to be peers: “district[s] that, as close as we can possibly approximate, look[] similar to” Petitioners, based upon measures such as size, student demographics, labor costs, and wealth. (Tr. at 12834-37.) Mr. Willis explained that his goal was to find “districts that most closely mirror” Petitioner Districts. (Tr. at 12835.) Accordingly, Mr. Willis testified that for each Petitioner District, he identified 20 similar districts, minus outliers, which he said he eliminated. (Tr. at 13059-60.) Mr. Willis explained that the importance of choosing similar districts for his efficiency comparisons of academic growth to student spending was to ensure the comparisons were not unfair or biased. (Tr. at 13060.) His goal was to see whether there were “other places in the State of Pennsylvania that are achieving more results with the same level of funding.” (Tr. at 12842.) Based upon this analysis, Mr. Willis opined that, as to their “efficiency of spending,” Petitioner Districts tended to be “below the ... mean of those average other peer districts,” some were “closer to the mean,” but there were no “circumstance[s] in which they were achieving ... higher levels of achievement given the dollars that are being invested in their system.” (Tr. at 12834.)

*253 2129. However, upon cross-examination, it was credibly established that the peers Mr. Willis identified were not mirror images of Petitioner Districts. For example, Mr. Willis found that 2 of the 20 closest peer districts for Lancaster were Jenkintown School District and Radnor Township School District. (Tr. at 13061.) However, Jenkintown and Radnor are not “mirrors” of Lancaster:

Total District	Special Disadvantaged	Econ. Homeless	School Education Lancaster
SD 10,880	19.15%	19.80%	90.71%
5.83%	Jenkintown SD	730	15.75%
1.92%	16.30%	0.27%	Radnor Twp.
SD 3,799	11.85%	3.42%	10.74%
0.39%			

(PX-04806 (excerpt).)

2130. As the evidence shows, Lancaster is far larger, with much higher percentages of special education students, ELL students, students experiencing homelessness, and economically-disadvantaged students than Jenkintown or Radnor. (Tr. at 13061-65; PX-04806 (excerpt).)

2131. Mr. Willis further found Wilkes-Barre was a peer with Council Rock School District, and Shenandoah Valley was a peer with Lewisburg School District. (Tr. at 13061-62.) As identified below, and as Mr. Willis admitted, Wilkes-Barre and Shenandoah Valley also have much higher percentages of special education students, ELL students, and economically-disadvantaged students. (Tr. at 13065-67; PX-04806 (excerpt).)

Total ELL Disadvantaged	Special Education	Econ. Wilkes-Barre Area	School District	Students Education
SD 7,310	19.56%	7.55%	80.16%	Council Rock SD
2.06%	10.11%			10,778

Total ELL Disadvantaged	Special Education	School District	Students Education
SD 1,079	16.31%	12.23%	75.44%
13.02%	2.87%	28.09%	Lewisburg Area SD

(See PX-04806 (excerpts).)

2132. Mr. Willis then testified about his second method of peer matching. (Tr. at 13068-70.) Mr. Willis acknowledged that his second methodology for finding peer districts — which identified 2 peers per district, instead of 20 — was conducted according to a similar methodology as his first. (Tr. at 13068-70.) However, upon review on cross-examination, it was established that three-quarters of the alleged peers that Mr. Willis found using his second methodology (identifying 2 peers) were not peers in his first methodology (identifying 20 peers):

Tabular or graphical material not displayable at this time.

(PD-00018-0007; Tr. at 13070, 13073-75.)

2133. Further, the second methodology matched Petitioner Districts to “peers” that were just as questionable. For example, although testifying that he matched district peers as to size, density, racial composition, and other student demographics, one of the two peers Mr. Willis matched for William Penn was Harmony Area School District (Harmony) in Clearfield County. (Tr. at 13075-76.) Mr. Willis admitted that while he matched districts on measures such as density, he did not know anything about Clearfield County. (Tr. at 13076-79.) Given the disparity between these districts in “size, density, racial composition, and other student demographics,” it is not reasonable that Harmony is one of William Penn's two peers within the Commonwealth:

School Total	Econ. District	County
Students	White	Black
Disadvantaged	William	Delaware
4,916	3.54%	87.77%
Penn SD	Harmony	Clearfield
253	99.21%	0.00%
SD	0.00%	39.53%

(PX-04806 (excerpt).)

2134. Mr. Willis further testified that he found that a peer for Wilkes-Barre was Bensalem Township School District, a district with a median income that is 60% higher, rather than Scranton, Hazleton, Allentown, or Bethlehem. (Tr. at 13080.) And Mr. Willis stated that he found that Greater Johnstown, by median income the poorest school district in the Commonwealth, was a peer of Albert Gallatin, a district with far fewer economically-disadvantaged children. (Tr. at 13079-80.)

***254 School Total Econ. District**
County Students White Black ELL
Disadvantaged Greater Johnstown
Cambria 2,940 41.43% 35.82%
0.99% 85.75% SD Albert Gallatin
Fayette 3,288 91.00% 3.50% 0.21%
48.94% Area SD

(PX-04806 (excerpt).)

2135. The evidence reflects that the methodology used by Mr. Willis to identify peer school districts produced matches that included districts that cannot be described as reasonable peers to Petitioner Districts. Moreover, Mr. Willis agreed that statistical reliability occurs when “you have an ability to be able to repeat methodologies over and over and over again and get nearly the same results without error rates or statistical significance that show different results.” (Tr. at 13067-68.) Yet, Mr. Willis's second round of peer matching did not produce the same results, including school districts that were not identified in the first round of matching. Overall, given these incongruities, the Court is not persuaded that the method used by Mr. Willis to identify peer districts, and the resulting analysis, deserves any weight.

2136. Mr. Willis was qualified as an expert in part based upon his own work conducting costing out studies. (Tr. at 12676-77.) During his testimony, Mr. Willis explained that such studies are commonplace, and ask basic, foundational questions about school funding systems:

They've been used for well over two decades now in the United States. They ask questions, not just about the amounts of resources that states contribute to their public education systems, but also about how those dollars are distributed and what I might describe as the mechanics, the rules, the regulations that go around the funding that goes to public schools and school districts that allow practitioners to use those resources on behalf of students.

(Tr. at 12676-77.) When discussing the costing out study he conducted for the Kansas Legislature, Mr. Willis explained that this is precisely what costing out studies accomplish: examine state standards and then study “the amounts of resources and how distribution would have to change in order to achieve those standards.” (Tr. at 12683-84.)

2137. Mr. Willis acknowledged that he did not perform a costing out or adequacy study in this case and his report in this case did not answer the fundamental question of whether Pennsylvania's school funding is sufficient for the needs of its students to meet state standards. (Tr. at 12680-82, 13002-03.) Although he was an expert witness for Legislative Respondents, he explained that such an undertaking “requires a level of data and detail that [he] did not have access to here in Pennsylvania.” (Tr. at 12681 13002-03.) Such testimony reflects a limitation on Mr. Willis's analyses and supports the Court's decision to find those analyses of limited persuasiveness.

2138. Mr. Willis admitted that there is a large body of literature documenting the positive impacts of small class sizes on students in grades K-3, so long as class sizes are reduced to ratios of 17 students or less to 1 teacher, and so long as the reduction is properly implemented. (Tr. at 12950-52.) Mr. Willis testified that Petitioner Districts opted for lower class sizes compared to peer districts. (Tr. at 12952-53.) For example, Mr. Willis's analysis of William Penn stated that the district has a student-teacher ratio of 18.7 students to 1

William Penn School District; Panther Valley School..., Not Reported in Atl....

teacher. (Tr. at 12965.) But, Mr. Willis acknowledged, on cross-examination, that during the very same year he studied, every single K-3 class in William Penn exceeded this ratio, with classes of between 21 and 31 students per teacher. (Tr. at 12965-76.) Mr. Willis testified that the oversized classes in William Penn were a “choice” made by William Penn, and were he a leader in William Penn, he would have hired additional teachers to achieve class sizes of 20 students or lower. (Tr. at 12971-72, 12975-76.) However, Mr. Willis conceded he did not know whether William Penn had the resources to hire more teachers and did not know about the resource decisions William Penn had made in the past. (Tr. at 12972.) Moreover, he agreed that he had neither spoken with, nor was provided the deposition testimony of William Penn administrators, which had occurred more than a year prior to the submission of his report, or those administrators’ trial testimony. (Tr. at 12976-79.)

*255 2139. In performing his analysis, Mr. Willis did not calculate class size data; rather, he testified that he used student-teacher ratios because that information was publicly available. (Tr. at 12952-53, 12979-80.) However, as explained by Petitioners’ witnesses, and as Mr. Willis acknowledged, student-teacher ratio is not the same as class size because teacher counts often include non-regular classroom teachers, such as ELL teachers or Title I teachers, and because the overall ratio includes atypically sized classes, such as self-contained special education classrooms. (Tr. at 5727-29, 12953-54.) Mr. Willis acknowledged it would have been better to have “access to some data that would allow us to understand the granularity of circumstances across school districts,” but the data he was provided did not allow him to “get beyond student-to-teacher ratio.” (Tr. at 12979-80.) The lack of information and reliance on only student-teacher ratios, which were inconsistent with class size data, rendered Mr. Willis’s testimony regarding Petitioner Districts’ class sizes of limited assistance.

2140. Mr. Willis also submitted a graph purporting to demonstrate growth in “total expenditures” for Pennsylvania versus the United States in support of his opinions. (Tr. at 13167-68.) However, despite the title of his graph, Mr. Willis admitted on cross-examination that his national figures were actually current expenditures — a number that does not include all spending. (Tr. at 13167-69.) Yet, he compared those national figures to a number for Pennsylvania that exceeded Pennsylvania’s current

expenditures by approximately \$2,000 per student because it included total expenditures. (Tr. at 13171-73.) The result of such a comparison was to artificially inflate Pennsylvania versus its national comparator. Mr. Willis’s explanation for the discrepancy was that, although the table in his report indicates total expenditures were used, he took out some costs from Pennsylvania’s figure which were not reflected in his report. However, this explanation does not resolve the discrepancies, and the Court finds that this calculation is of limited assistance. (Tr. at 13164-73.)

2141. The Court credits, and is persuaded by, Mr. Willis’s testimony that supports conclusions related to the importance of school funding in improving student outcomes through the implementation and sustaining of interventions and strategies. Notably, Mr. Willis agreed with numerous premises of Petitioners’ case, from the impact of educational interventions on students, to the effect of mandated costs on school districts, to the importance of the research of scholars such as Petitioners’ experts Dr. Johnson and Dr. Belfield. (*See, e.g.*, Tr. at 12876-77, 12888, 12934-35, 12982.)

2142. Mr. Willis testified the challenges from poverty are not insurmountable. (Tr. at 12934.) He acknowledged that there are key strategies and interventions that have been proven to improve students’ outcomes, especially among at-risk, low-income students. (Tr. at 12934-35.) Mr. Willis agreed that disadvantaged children, including under-represented minorities, ELL students, and students with disabilities, need more of these kinds of supports and services to access their education. (Tr. at 12876-77.) Mr. Willis testified that there is a “near consensus” that it costs more to educate students from low-income backgrounds to support equitable achievement of outcomes, although there remains some dispute about the research. (Tr. at 12931-32.) Mr. Willis also testified that the investments to support these strategies need to be sustained over time. (Tr. at 12999-30.)

2143. Mr. Willis stated that these interventions include one-on-one or small group tutoring at the elementary school level, particularly when done by a highly qualified teacher with subject matter expertise, which research has shown have a positive impact on student outcomes. (Tr. at 12993-94.)

2144. Mr. Willis agreed that emerging “research ... indicates that higher concentrations of poverty within districts exacerbate the challenges presented by student poverty,” and

William Penn School District; Panther Valley School..., Not Reported in Atl....

credibly stated that there is evidence that concentrations of poverty add costs to those kinds of communities. (Tr. at 12933-34.)

*256 2145. Mr. Willis agreed that increased school spending translates to increased student achievement and attainment depending on where the funding occurs, the level of funding, and over what period of time the funding occurs, and that this relationship is generally accepted by researchers in the field. (Tr. at 12888, 12891-92.) Mr. Willis credibly acknowledged, “[a]pproximately 90 percent of studies ... find a positive and significant impact of total spending on student outcomes. This tells policymakers and school leaders that, on average, money absolutely matters,” although he explained that non-monetary factors can also affect student outcomes. (Tr. at 12898-99.) Mr. Willis was aware of research that showed evidence of increased school spending and educational attainment led to higher graduation rates, higher earnings, increased college attendance, and maintaining a strong democracy. (Tr. at 12913-18.) He also agreed that there is “robust” research showing that education “translate[s] into larger economic output and greater societal benefits.” (Tr. at 12913.)

2146. Mr. Willis agreed that

Pre-K programs have been shown to result in positive impacts that can persist throughout a child's school years and even into their adult life and career. The research also shows that high-quality early childhood education is particularly important for improving the academic outcomes of low-income children. Prekindergarten programs create a wide range of benefits from gains at individual levels of academic achievement and decreases in special education service needs to widespread societal improvements. Studies of the return on investment (ROI) of quality prekindergarten programs estimate a return of between \$3 and \$7 for every dollar invested.

(Tr. at 12946.) Mr. Willis explained that the way pre-K programs are implemented is extraordinarily important, and a high-quality pre-K or early childhood program is needed to effectuate a change in trajectory of students. (Tr. at 12947.) According to Mr. Willis, academic gains for low-income and minority students are one of the most obvious benefits of high quality, universal pre-K programs, and long-term benefits, “such as increased high school graduation, years of education completed, and earnings, and reduced crime and teen pregnancy,” have also been found. (Tr. at 12947-49.)

2147. Mr. Willis agreed that addressing students’ social, emotional, and psychological needs is vital to their success and that providing such supports is an effective use of funds when they are “implemented well with the right adults in situation with students[.]” (Tr. at 12980-81, 12992.) Mr. Willis further agreed that social and emotional learning “help[s] students develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships and make responsible and caring decisions.” (Tr. at 12981.) When implemented with fidelity, Mr. Willis testified, those “programs result in improved academic performance, better classroom behavior, increased ability to manage stress and depression, and ... improved student attitudes about themselves, others, and school.” (Tr. at 12981.) Mr. Willis stated he was familiar with studies showing that the ROI on these programs is \$11 in benefits for every \$1 invested. (Tr. at 12982.) Per Mr. Willis, the recommended student-to-counselor ratio is 250:1, but he acknowledged that his report did not cite anything specifically about issues surrounding student mental health in Pennsylvania. (Tr. at 12986-89.)

2148. Mr. Willis indicated, on the issue of class sizes, what constitutes an appropriate class size is a function of student need, rather than any particular number. For example, Mr. Willis acknowledged that there is a large body of research demonstrating that students in lower grades, such as kindergarten, require smaller class sizes. (Tr. at 12950-51.) Mr. Willis stated that the implementation of smaller class sizes at the K-3 level, when targeted at students from low-income backgrounds, “have the most pronounced effect statistically ... on student outcomes.” (Tr. at 12950.) Mr. Willis agreed that the literature revealed that until class sizes reached a student-

William Penn School District; Panther Valley School..., Not Reported in Atl....

to-teacher ratio of 17-to-1, the positive impacts would not likely be seen. (Tr. at 12951-52.)

*257 2149. Mr. Willis agreed that the benefits of education include higher tax revenue because “the overall increase in education results in a set of citizens that are procuring jobs and those jobs retain higher wages for that community and for that state.” (Tr. at 12914.) According to Mr. Willis, “[t]ax revenues are higher as people earn more[, a]nd with a more educated population, fewer public investments are needed in the areas of health, crime, and welfare.” (Tr. at 12916-17.)

2150. Mr. Willis acknowledged that early studies on the subject, including those authored by Dr. Hanushek, were based on “calculations between spending and achievement” that “could not clearly rule out the influence of other factors.” (Tr. at 12889-90.) Mr. Willis indicated that while Dr. Hanushek's research is well known, it is also methodologically limited, subject to statistical bias, and has been eclipsed by more rigorous scholarship that contradicts his claims. (Tr. at 12891-95.) Mr. Willis explained that a new wave of credible studies, such as Dr. Johnson's study, “using more rigorous research methods and larger datasets,” has “allow[ed] researchers to make stronger causal inferences” and “additional degree of certainty” than in prior decades, between school funding revenue and student achievement. (Tr. at 12891-93.) Mr. Willis testified that he has cited Dr. Johnson's findings in his own writings. (Tr. at 12894-95.)

2151. Mr. Willis agreed that “even with strong leadership and dedicated staff, ... the level of need of [] students, combined with the lack of adequate staffing and resources, made it impossible for schools to provide all students with the supports needed to successfully obtain a sound basic education.” (Tr. at 13001.)

2152. Mr. Willis indicated in his past work that statistics showed that “[b]y 2025[,] two out of every three jobs in the [United States] will require some postsecondary education and training.” (Tr. at 13006.)

2153. Mr. Willis acknowledged that he had written that “[t]o design a funding system that effectively supports the state's education goals, states should first establish clear, measurable targets for student achievement and then determine and provide the necessary education funding to achieve these goals.” (Tr. at 12873-75.) He clarified “that part of the

establishment of those standards and part of the identification of resources that the state provides is done in combination with other factors, including the local contribution of resources” and “the current trend in demographics.” (Tr. at 12873.)

2154. Mr. Willis agreed that an appropriate way to evaluate the success of a school system is to measure the success of students on a state's end-of-course assessments, which is what occurs in North Carolina, one of the states for which WestEd performed studies. (Tr. at 13008.) Another way to evaluate the performance of a public school system, per Mr. Willis, is measuring postsecondary enrollment, persistence, and graduation rates, which he used in the North Carolina analysis. (Tr. at 13008-10.)

2155. Mr. Willis agreed, in part, that many of the financial pressures on school district budgets, such as cost of upkeep and renovations of aging school facilities, increased special education programing costs, and pension costs, are cost increases that should be studied in both nominal and inflation-adjusted dollars, and “are largely hidden from public view because they do not take the form of new services or programs and instead are part of what is often referred to as the ‘cost of doing business.’ ” (Tr. at 13011-14.) However, Mr. Willis clarified that pension payments, like teacher salaries, are not hidden from view. (Tr. at 13014-15.) Mr. Willis agreed that these pressures can threaten to destabilize school district budgets and force reductions in services to students. (Tr. at 13011-14.) In his words, these pressures can therefore “create a silent recession” for school districts, “even in periods of overall state increases in funding.” (Tr. at 13015.) Mr. Willis agreed, as did President Pro Tempore's witness Mr. Donley, that to look at the impact of funding increases to school districts, one must also study school districts' rising mandated costs. (Tr. at 11727-29, 13010-15.) Mr. Willis indicated that, in practical terms, when adjusted for inflation, school districts' unreimbursed pension expenses grew by approximately \$1.4 billion dollars from 2010 to 2019. (Tr. at 13019-21.)

c. Abel Koury

*258 2156. Dr. Koury's testimony was offered by President Pro Tempore as part of his case-in-chief. (Tr. at 13614.) Dr.

William Penn School District; Panther Valley School..., Not Reported in Atl....

Koury holds a Ph.D. in developmental psychology from the University of Pittsburgh and has worked for approximately 15 years in the field of data analytics, which involves the managing, understanding, evaluating, and reporting of data. (Tr. at 13616-17, 13623.) At the time of trial, Dr. Koury was employed at Far Harbor, LLC, a statistical consulting firm located in Austin, Texas, after previously working with Brown University, the Ohio State University, and the Cincinnati Preschool Promise. Dr. Koury was qualified as an expert in the field of statistical data analysis relating to educational data.

2157. During his cross examination, Dr. Koury was one of several expert witnesses on both sides to testify that some children need more educational resources, such as supports and services, to learn than those children who do not have specific needs. (Tr. at 13825-28.) Dr. Koury gave credence to the research of Petitioner's expert Dr. Johnson, which confirmed that increased school funding has a positive, causal effect upon student outcomes throughout the school trajectory, saying that Dr. Johnson's methodology presented a strong argument and was "superrigorous." (Tr. at 13844.) Dr. Koury also agreed that children's access to a high-quality preschool can provide very large cognitive gains prior to school entry, substantial achievement advantages sustained throughout their educational career, increased high school graduation, as well as lead to higher rates of college attainment, higher career earnings, decreases in abuse and neglect, and decreased involvement in the criminal and juvenile justice systems. (Tr. at 13810.) Similarly, he agreed research specifically demonstrates that reducing class sizes can strongly benefit economically-disadvantaged and minority students who are more likely to need individualized support. (Tr. at 13813.)

2158. Notwithstanding the findings enumerated above, Dr. Koury testified that his analysis suggested that "spending as related to [current expenditures (CE)] per ADM, ... , and growth as related by AGI, are not meaningfully related to one another." (Tr. at 13626.) Thus, he posited that there is not a clear relationship between how much money school districts spend per student and student academic growth. (Tr. at 13626, 13647-48.) He found that correlations between AGI and district-level CE per ADM are either weak or inconsistent and that some correlations are positive while others are negative. He also determined this point holds true across multiple school levels, grades therein, and school

years, even when controls are made for cost of living and other demographic factors. (Tr. at 13626, 13647-48.) Although Dr. Koury identified a few instances in which there was a statistically significant relationship between spending and growth, with the measures he was using, the relationships were both positive and negative. In other words, in some instances higher CE per ADM was associated with higher growth as represented by AGI, while in others higher CE per ADM was correlated with lower growth as represented by AGI. (Tr. at 13648, 13708-10.) The strongest correlation that Dr. Koury found in his analysis revealed that, at most, district spending was correlated with 2.6% of student academic growth as represented by AGI. (Tr. at 13648-49.)

2159. With regard to spending, Dr. Koury examined CE per ADM and actual instructional expenditures per weighted average daily member, as adjusted for cost of living. (Tr. at 13633-35.) Dr. Koury determined that there is no correlation between CE per ADM (spending) and AGI (growth) in Pennsylvania. In conducting his analysis, Dr. Koury used scatterplots, Pearson correlations, independent T-tests, univariate analyses of variance or general linear models, and ordinary least squared regression. all of which are generally accepted and used in statistical data analysis. (Tr. at 13633-38, 13645.)

***259** 2160. Petitioners contend that Dr. Koury's report misused a data set of limited use, and therefore it should be given no weight. In support, Petitioners assert Dr. Koury's report generally focused on interpreting scatterplots, which ostensibly examined the correlation between school spending (CE per ADM) and student growth as measured by the PVAAS, and specifically by AGI. (Tr. at 13626-27.) AGI is used to estimate academic growth and is said to show change among school districts over time by comparing where students start in an academic year and where they are positioned a year later. The AGI differs from an achievement comparison which measures a student's results at a single point in time. (Tr. at 13626-27, 13628-29, 13630-32.)

2161. Dr. Koury also measured student growth by examining the AGI for student districts on PSSA exams at available individual grade levels and combined across grade levels. (Tr. at 13630.) He testified that demographic factors are more likely to impact student achievement than student growth, which he believed would be present the first time a student took the exam and, therefore, allowing AGI to essentially

William Penn School District; Panther Valley School..., Not Reported in Atl....

control for those factors making them have less of an impact on the growth score than a given achievement score. (Tr. at 13629-30.)

2162. Even though Dr. Koury's analyses used AGI scores, he "was not offered as an expert in the field of value-added metrics or PVAAS" and did not offer testimony "as to the underlying meaning and the problems and items of that nature regarding value-added metrics." (Tr. at 14595.) In fact, Dr. Koury agreed that his analysis was limited in scope such that it would be improper to infer any conclusion from his report about the causal relationship between spending and academic growth. (Tr. at 13845.)

2163. Dr. Koury's analysis did not explain whether spending money on certain interventions in certain districts would have an impact on student growth. (Tr. at 13845-47; *see, e.g.*, Tr. at 13769-70 (when asked "Where have you read about AGI," responding, "I read about AGI really just a couple nights ago"); Tr. at 13764 (when asked if "AGI itself doesn't actually measure growth," responding, "I couldn't say that for sure. I don't know."); Tr. at 13764-65 (demonstrating an inability to explain the relationship between the PVAAS growth measure and AGI); Tr. at 13783-84 (testifying, "[w]hether or not I believe that AGI is a good measure of growth or a bad measure of growth, my opinion does not matter. It's not an opinion.").)

2164. Dr. Koury's analysis focused on whether a correlation existed between school district CE per ADM and student academic growth variables, using AGI. Dr. Koury explained, however, that a correlation is an association between two variables but does not indicate whether one variable caused the other variable. Conversely, in an experiment, a causal relationship can only be detected if individuals have been randomly assigned to a treatment and there is a control group. (Tr. at 13638-39.) While Dr. Koury studied the correlational relationship, rather than causal relation, between education spending and student academic growth variables, for it to be said that one variable caused the other, there needs to be an association between the variables, and if no association is present, it is unlikely that the variables are causally linked. This phenomenon is known as the first law of finding causality. (Tr. at 13689, 13736.)

2165. Dr. Koury had been instructed to examine differences in CE per ADM between districts with high and low levels of

student academic growth as represented in its AGI (*i.e.*, dark blue and red districts, respectively). The results of Dr. Koury's analysis was that districts with high and low levels of growth in their AGI were not spending different amounts and that, generally, districts with low levels of growth were in the top 25% of the spending distribution. (Tr. at 13649.)

*260 2166. Dr. Koury's examination revealed that districts with relatively higher and lower levels of growth, as represented by their AGI, had similar CE per ADM. For 2013-14, his analytical results showed that about 39% of districts in the top 25% of spending showed average growth in the red (low) category. (Tr. at 13671-72.) When Dr. Koury controlled for demographic variables, he found education spending was not related to student academic growth as represented in the AGI. (Tr. at 13651-52.) According to Dr. Koury, if he had used a spending measure that was weighted by student demographics, such as the percentage of students who live in poverty, the measure would have turned those demographic variables into covariates. In his opinion, running an analysis that was weighted by demographics would have been the opposite of controlling for student demographics. (Tr. at 13847-48.) After examining PSSA test scores from 2013-14, Dr. Koury determined there was essentially no correlation between spending as measured by CE per ADM and student academic growth as reflected in the AGI. (Tr. at 13653-67.) Dr. Koury reached a similar result when examining data from the 2014-15, 2015-16, 2016-17, and 2017-18, school years. (Tr. at 13681-733.)

2167. Although Dr. Koury used AGI, AGI is not PVAAS's growth measure but a ratio of PVAAS's growth measure relative to district size. (Tr. at 1970; PX-02118-0016.) When Dr. Koury was shown data demonstrating this point, he initially disagreed:

If I believe that the AGI is an indicator of growth, which I do, then I would have to say if the — if the AGI is larger, then that means that they are growing more. Now, again, just when I say that something is growing more, that is based off of the measure. That's what the measure shows.

William Penn School District; Panther Valley School..., Not Reported in Atl....

(Tr. at 13783.) However, as credibly explained by former Deputy Secretary Stem, Dr. Kelly, and Department documentation, a greater AGI score does not mean a district “is growing more.” (See Tr. at 14516-17, 1964.) Rather, “AGI, may, therefore, establish confidence in the ‘directionality’ of growth, but it does not establish the level of growth.” (Tr. at 1990-91). As shown above, both SDP and Johnsonburg School District had an identical growth score of 1.3 for PSSA math in the 2018-19 school year; yet, because of the different standard errors, SDP’s AGI was 24.65, while Johnsonburg’s was 1.73. (See FOF ¶ 446). As Former Deputy Secretary Stem testified, SDP’s students did not grow 15 times more than Johnsonburg’s. (*Id.*) Moreover, a district can have a larger growth measure yet have a lower AGI. (See FOF ¶ 447). Because Dr. Koury believed that “if the AGI is larger, that means they are growing more,” and that belief is belied by credible testimony and Department documentation, as Dr. Kelly explained, (Tr. at 14523-24), Dr. Koury’s report rested upon a fundamental flaw.

2168. Petitioners posit the second fundamental flaw in Dr. Koury’s analysis is that it sought to identify a relationship between funding and AGI, but that model purports to control for that very connection. (Tr. at 13811.) For instance, Dr. Koury agreed that PVAAS is calculated by “measur[ing] the changes in student achievement from one point in time to another using all prior data for a student,” (PX-02118-13), so that “each child is acting as their own control,” (Tr. at 13811). However, although Dr. Koury also agreed that certain interventions, such as pre-K, have an impact on student outcomes, (Tr. at 13811), he did not control for pre-K in his model, saying that it did not affect his analysis because PVAAS already controls for the factors that the child is bringing with them into school, (Tr. at 13811-12). When confronted with the apparent conflict as to why PVAAS controls for the presence or absence of pre-K, but not broader issues of underfunding that causes a lack of pre-K or various needed interventions, Dr. Koury agreed it was a question he had not considered. (Tr. at 13821-22.) Dr. Koury ultimately agreed that if the PVAAS model is to be believed, then it already controls for whether a student attends an underfunded district, although his analysis examined CE per ADM, which he testified would not necessarily have been controlled. (Tr. at 13824.) As a result, if the PVAAS model is to be believed, Dr. Koury’s analysis provided no information about the relationship between spending and growth because PVAAS is

designed to decouple those very two things. (See, e.g., Tr. at 13824.)

*261 2169. Petitioners claim the third flaw revealed in Dr. Koury’s argument, and which limited the import of his findings, was the result of President Pro Tempore’s instruction to Dr. Koury to run his model with an unweighted per-student funding figure. (Tr. at 13824-25.) While acknowledging that some students might be costlier to educate, Dr. Koury was unaware that Pennsylvania contained a student-weighted measure, the ADM, to account for differing student costs. (Tr. at 13827-28, 13832-33.) When shown that formula for the first time, however, he agreed that the measure was “useful” and “great,” but did not know how re-running the analysis while accounting for student need would alter his findings: “I concede the point that I did not consider it. I do not know. I can’t say for sure how it would have changed things.” (Tr. at 13835-36.) But Dr. Koury eventually conceded that using a measure of spending that accounted for student need could change the relationships he found, because low-wealth, high-needs districts would see their per student spending numbers drop. (Tr. at 13832.)

2170. The evidence also illustrated the unpredictability of the AGI values. When shown Dr. Kelly’s analysis, which indicated that, by some measures, 70% of the lowest performing districts in one year are no longer the lowest performing districts the next year, Dr. Koury did not dispute the accuracy of Dr. Kelly’s findings. (Tr. at 13762.) Also, when shown Dr. Kelly’s analysis demonstrating that a quarter of school districts changed AGI levels for four consecutive years, Dr. Koury termed the analysis “pretty straightforward” and seemingly correct. (Tr. at 13762-63.) Dr. Koury, however, explained that he did not do a similar analysis because “that wasn’t the question that was asked to [him].” (Tr. at 13763.)

2171. Dr. Koury testified honestly, thoughtfully, and with a clear expertise in the field of statistical analysis. However, his analysis was unduly limited because he was directed to perform his analysis with only AGI and PVAAS metrics and was not provided information about a student weighted ADM, which he did not know existed and which would have been weighted for the needs of the student. Accordingly, his use of the metrics that made up the substance of the report is not as convincing. (See, e.g., Tr. at 13754-55, 13832-35.) The credited evidence establishes the importance of recognizing the methodology and purpose of the AGI and

William Penn School District; Panther Valley School..., Not Reported in Atl....

PVAAS metrics when utilizing them to make comparisons and correlations. However, the analysis requested of Dr Koury was not consistent with these limitations. Accordingly, his testimony sheds limited light on the foundational issues of this case.

d. Max Eden

2172. Speaker offered the testimony of Max Eden to provide a “literature review” on a variety of topics.⁷² (Tr. at 13225.) Mr. Eden is a research fellow at the American Enterprise Institute, which he described as a non-profit, nonpartisan, public policy think tank. (Tr. at 13225-26.) Mr. Eden has focused his career and work on education policy, including school discipline, school culture, early education, “and a little bit of school finance.” (Tr. at 13228.) In his current role as a research fellow at the American Enterprise Institute, and his previous position at other similar entities, Mr. Eden drafts research reports, advises policymakers, and interfaces, in some cases, with the U.S. Department of Education on various educational policy issues, such as school discipline and early education. He said, “school finance is not, frankly, my primary body of master literature.” (Tr. at 13245, 13329.)

2173. Mr. Eden opined that school spending in Pennsylvania has increased substantially over time and ranks among the highest in America. He testified that Pennsylvania's overall spending in kindergarten through 12th grade is substantially higher than the national average and that if Pennsylvania were a sovereign nation, its spending on public education would rank among the highest in the world. (Tr. at 13293.)

*262 2174. In Mr. Eden's opinion, Pennsylvania's long-standing tradition of local control over public schools, including education funding through both state and local tax dollars, is rational and reasonable. (Tr. at 13300-03.) Mr. Eden alluded, in particular, to a 2000 study in the *Journal of Law & Economics*, which he said found that funding systems that leaned more heavily on local rather than state revenue sources were more efficient. (Tr. at 13400-01.)

2175. Mr. Eden disputed that Pennsylvania school funding was regressive, which he believed was determined by comparing Pennsylvania to other states. (Tr. at 13383-85.) Mr. Eden conducted comparative analyses, which, in

his opinion, showed that economically-disadvantaged students in Pennsylvania receive more per pupil from the Commonwealth than non-economically-disadvantaged students, and that Pennsylvania is the eighth most progressive state in America when it comes to total education funding received from all sources. (Tr. at 13295-97.) In reaching this opinion, Mr. Eden relied upon a study from the Urban Institute, which he believes “stand[s] out for the way that it was designed,” and uses “the most sophisticated methodology” to define the progressivity of school funding. (Tr. at 13383, 13535-36.) The Urban Institute study, like other studies cited by Legislative Respondents’ experts, relied on U.S. census data. (Tr. at 13536.)

2176. Mr. Eden claimed studies and review of U.S. Census and NAEP data have shown that increased education funding has not led to increased academic achievement. (Tr. at 13348, 13354-55.) Mr. Eden was careful to note his belief, that historical increases in spending have not been accompanied by increased academic achievement, cannot alone answer the question of whether increased spending matters. Mr. Eden indicated that just as correlation does not imply causation, the lack of correlation does not imply the lack of causation. (Tr. at 13355.) However, he believes this lack of correlation is something that a reasonable person considering the issue might take into account.

2177. Through Mr. Eden, and other witnesses, Legislative Respondents sought to rely on information from the Census, which Mr. Eden asserted captures Pennsylvania's per-student funding as compared to other states. (Tr. at 13326.) Specifically, through Mr. Eden, Speaker sought to offer into evidence a chart demonstrating growth in Pennsylvania school spending from 1981 to 2020. (Tr. at 13321-22.) Mr. Eden opined that between that time period, education funding in Pennsylvania has almost tripled. (Tr. at 13321.) Mr. Eden testified that, according to the 2019 U.S. Census data, Pennsylvania ranks sixth out of the states in overall funding, including from federal, state, and local sources, for kindergarten through 12th grades. Mr. Eden explained that these results include Washington D.C. as a state and report it as the highest spending state in America in overall spending and that the U.S. Census data would rank Pennsylvania as the fifth highest state in education spending per student if Washington D.C. were excluded. (Tr. at 13328-29.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

2178. On cross-examination, Mr. Eden testified that the chart with this data had been prepared by amici Commonwealth Foundation for Public Policy Alternatives (Commonwealth Foundation), a Pennsylvania nonpartisan public policy research and advocacy nonprofit organization. (Tr. at 13462-64, 13319-20.) Mr. Eden testified that he “spot[]checked” the chart’s data to ensure its accuracy. (Tr. at 13464-65.) However, Mr. Eden conceded that even though the chart was purporting to show long-term trends, he could not have “spot checked” the first 15 years of data in the graph. (Tr. at 13461-62.) He admitted that he also did not verify whether the chart he offered in court had correctly accounted for inflation. (Tr. at 13458-60.)

*263 2179. Questions during the cross-examination of Mr. Eden raised an ongoing concern about studies that use national data: particularly questions about the way that charter students were accounted for in Pennsylvania. (Tr. at 13539-41, 13548-49.) Mr. Eden agreed that “if you categorize students as not attending public schools who do, in fact, attend public schools, then the results change dramatically.” (Tr. at 13544.) He did not dispute the statement that, “if you take the charter school students out of the equation, at least using the progressivity measure that these folks have used, it significantly impacts Pennsylvania’s progressivity.” (Tr. at 13548.) When the study that he heavily relied upon used a measure that attempted to control for the impact of charter school students, it found that the results “change dramatically,” with Pennsylvania having the most regressive school funding system in the nation. (Tr. at 13542-46.) This dramatic change to where Pennsylvania falls on school funding issues when charter school students are included in funding data is consistent with Mr. Willis’s acknowledgment of the flaws in the Making the Grade report, which initially excluded charter school students from the calculation, while including the funding related to those students. (See FOF ¶¶ 2118-2119.) Because Mr. Eden relied on data that may not accurately address charter school students and charter school funding, the probative value of Mr. Eden’s analyses and opinions that economically-disadvantaged students in Pennsylvania receive more in funding from all sources is undermined, and the Court is unpersuaded by his testimony.

2180. Mr. Eden also opined that there have been a number of studies conducted on the topic of education and its effect on student academic achievement. (Tr. 13308-10.) Mr. Eden testified that there is a wide array of results of such studies,

some of which imply that higher education spending results in better student achievement, and some of which conclude that higher spending does not conclusively result in higher student achievement. (Tr. at 13404-08, 13431-35.) However, on cross-examination, Mr. Eden conceded that, “at some level, money does matter in providing interventions to help students who need them.” (Tr. at 13455.)

2181. Mr. Eden noted that a comparison between the per-student funding in Utah versus New York illustrates how more spending per student does not necessarily result in better achievement results. (Tr. at 13387-88.) Mr. Eden testified that, pursuant to U.S. Census data, Utah spends about \$6,953 per student and New York spends about \$22,336 per student. (Tr. at 13388.) He explained that when it came to student achievement, as reported by the NAEP, students in Utah are exhibiting higher rates of proficiency than New York students in fourth grade reading and mathematics, as well as in eighth grade reading and mathematics. (Tr. at 13388-89.) However, on cross-examination, Mr. Eden acknowledged that, when making these comparisons between Pennsylvania, Utah, and New York, he did not examine or account for how those states fund charter schools, diminishing the value of the comparisons. (Tr. at 13551-55.) Further, Mr. Eden was unaware of how New York and Utah compare to Pennsylvania in terms of students designated as economically disadvantaged, as ELL students, and as special education students. (Tr. at 13557.) Nor was he aware of how the populations compared by demographic group. (Tr. at 13556-58.) Mr. Eden’s lack of knowledge regarding relevant details of the subjects that he studied renders his conclusions unpersuasive.

2182. Mr. Eden also testified that while he performed a comparison of education spending in Pennsylvania to that in Western Europe, he conceded that was not an “apples to apples” comparison because the international data was based upon “a bunch of different assumptions [and] assertions.” (Tr. at 13487.) Mr. Eden had no idea whether the international data used similar definitions of “pupil” and “education spending” or whether the spending accounted for pension costs and healthcare costs, as the Pennsylvania figures do. (Tr. at 13487-89.) He conceded that the difference in accounting for pension spending alone “might really skew things.” (Tr. at 13488.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

2183. Mr. Eden also addressed the “paradigm shift” that had occurred with respect to research regarding the impact of increased spending on educational achievement, and he noted that a consensus position “is not coequivalent with the truth.” (Tr. at 13405.) Mr. Eden explained that “the old consensus position, as I think it’s reasonable to articulate it, was that money does not matter.” (Tr. at 13405.) In his opinion, the key study cited in support of that position was performed by Dr. Hanushek, one of Legislative Respondents’ experts in this case. (Tr. at 13405.) He believes the study most responsible for effectuating the consensus shift, and essentially re-opening the debate regarding the impact of school funding on student achievement outcomes, was Dr. Johnson’s study with Dr. Jackson and Dr. Persico (Tr. at 13408-09.) Mr. Eden testified that the debate remains far from settled, although Mr. Eden described the opposing viewpoints as being strong and plausible, but “not necessarily compelling.” (Tr. at 13408.) In Mr. Eden’s opinion, if Dr. Johnson’s conclusions were correct, it would mean that there would be higher achievement overall, and the achievement gap would be smaller, which has not occurred. (Tr. at 13420-21.) Mr. Eden further testified that Dr. Johnson’s 2016 study also relies on the assertion that school financing reforms are exogenous events that are unassociated with the underlying school financing system, but Mr. Eden believed there are differing opinions on this issue, and he has “a tendency to find” that court-ordered school finance reforms are not “purely random event[s]” that lead to an unexpected influx of additional funding. (Tr. at 13412-14.) Mr. Eden did testify that court-ordered finance reforms were more random than legislative school finance shifts. (Tr. at 13413.) Mr. Eden believed that, even if Dr. Johnson’s 2016 study was valid, there are significant issues with applying the results of that study within the current environment of school funding, because of the law of diminishing returns on investment, and he believes Dr. Johnson’s study acknowledged these diminishing returns. (Tr. at 13422-24.) One critique Mr. Eden pointed to was that Dr. Johnson’s study did not approximate a randomized control trial because it was based on court-ordered funding increases, which are not necessarily randomized events and do not exist “in a vacuum” and “can [themselves] have a catalytic political effect.” (Tr. at 13412-14.) Another reason that some scholars have declined to accept the conclusions of Dr. Johnson’s study is that if increased education spending has the positive impact suggested, “then it makes where we are today kind of inexplicable,” since the steady increases

in education spending over time should have resulted in higher achievement and a smaller achievement gap. (Tr. at 13420-21.) Mr. Eden opined that Dr. Johnson’s study did not look at the effects of actual funding increases, but rather assigned hypothetical values to how such money would have been spent. (Tr. at 13428-29.) Although Mr. Eden testified that the values used were hypothetical, he indicated that those values were “empirically very defensible.” (Tr. at 13429.) Critics have also pointed out that, under the law of diminishing marginal returns, even if increasing spending by \$1,000 per student when education spending was at the level from the time that is the focus of the Jackson, Johnson, & Persico study (\$4,000-5,000 per student), it would not necessarily have the same impact at today’s much higher spending levels. (Tr. at 13424, 13427, 13436.)

*264 2184. Mr. Eden testified that observational studies, like Dr. Hanushek’s, have limitations and that the majority of academics believe that Dr. Hanushek’s study has been rendered moot by more rigorous, experimental or quasi-experimental studies like Dr. Johnson’s study. (Tr. at 13407-09.) The Court notes Mr. Eden’s observations of the criticisms of Dr. Johnson’s study and recognizes no study is immune from criticism. On the whole, the Court is persuaded by Dr. Johnson’s testimony responding to those criticisms, which is supported by the fact that the rigorousness of Dr. Johnson’s study was acknowledged by Mr. Willis and Dr. Koury, the former of whom has cited that study in his own writings.

2185. Mr. Eden testified, that having reviewed “in a kind of careful, forensic manner” the body of research surrounding the impact of increased educational spending on achievement, he is unable to offer an opinion to a reasonable degree of professional certainty on the broadly defined question of whether increased spending leads to improved academic results. (Tr. at 13404.) Instead, he opined, “there is ample cause for people on both sides of the argument to believe that the other side is wrong, and that very reasonable [and] ... intelligent minds for very intrinsically interesting reasons hold ... opposite perspective[s] on this.” (Tr. at 13404.)

2186. Mr. Eden indicated that his review was performed in a careful and forensic manner, and that while he “tr[ies] to read studies pretty carefully[, he] sometimes read[s] them less carefully than [he] should.” (Tr. at 13545.) Similarly, in reviewing materials to develop his expert report, Mr. Eden

William Penn School District; Panther Valley School..., Not Reported in Atl....

also admitted to “making discretionary judgmental decisions” to ignore findings in the underlying reports that did not support, or even directly contradicted, his conclusion. (Tr. at 13574-82.). Mr. Eden conceded that he has no specialized academic experience in education, history, economics, or statistics, (Tr. at 13248), does not produce peer-reviewed research, (Tr. at 13276-77), and has not conducted formal peer-reviewed research regarding state educational spending, the relationship between spending and student achievement, or other educational topics, (Tr. at 13277-78).

2187. Mr. Eden opined that costing-out studies are inherently subjective and speculative, (Tr. at 13360-66), “there is no plausibly credible way to assert that X amount of money will yield Y result with any strong degree of confidence,” (Tr. at 13360), and “no liberal democracy, no modern country, no state ... has [had 100%] proficiency in reading and math,” (Tr. at 13364). He also testified that APA determined that approximately 30 school districts in Pennsylvania were spending in excess of the spending goal set by the Costing Out Study, but none of these districts exhibited 100% proficiency among its students in mathematics and reading assessments, as the Costing Out Study predicted that they should. (Tr. at 13368-69.)

2188. The Court finds Mr. Eden generally knowledgeable about educational policy. According to Legislative Respondents, Mr. Eden's testimony persuasively answers “whether the school funding system established by the General Assembly is ‘reasonably related’ to its constitutional duty to provide for the maintenance and support of a thorough and efficient system of public education to serve the needs of the Commonwealth,” because it supports that reasonable legislators could reach opposite conclusions regarding the impact that funding has on education. This is due to Mr. Eden's opinion that both sides make reasonable points. However, to the extent that the Court does not apply the “reasonable relation” test, (*see* Part VII.B.1, *infra*), Mr. Eden's testimony is of little assistance to resolving the ultimate issue before the Court. As discussed *supra*, Mr. Eden's opinions, like Mr. Willis's opinions, relied on data to establish the progressivity of Pennsylvania funding that does not accurately account for charter school students and charter school funding. Mr. Eden acknowledged that when those numbers were considered, Pennsylvania was actually regressive. Mr. Eden acknowledged that, in performing his comparative analyses, he was unaware of details that

would be relevant to the comparison. For these reasons, the Court gives Mr. Eden's testimony less weight than that of Petitioners' expert witnesses.

e. Eric Alan Hanushek

*265 2189. Dr. Hanushek holds a Bachelor of Science degree from the U.S. Air Force Academy and a Ph.D. in economics from the Massachusetts Institute of Technology. (Tr. at 14083; LR-00889.) Dr. Hanushek is currently the Paul and Jean Hanna Senior Fellow at the Hoover Institution of Stanford University. (Tr. at 14082; LR-00889.) Dr. Hanushek previously had been a professor of economics and political science at the University of Rochester, an associate professor of economics at Yale University, and an associate professor and other ranks at the U.S. Air Force Academy. (Tr. at 14082; LR-00889.) Dr. Hanushek holds a number of academic positions both nationally and internationally and is a member of several learned societies. (Tr. at 14082-84.) Dr. Hanushek has published or edited approximately 24 books, one of which is entitled the *Handbook of the Economics of Education*, and several hundred articles. (Tr. at 14086-87.) Dr. Hanushek has received the Yidan Prize for educational research, which Dr. Hanushek described as “an international award for a very illustrious judging panel that is financed by a foundation in Hong Kong, and it's designed to be the education equivalent of a Nobel Prize.” (Tr. at 14088.) He was qualified and accepted as an expert for Legislative Respondents in the fields of education policy and education economics. (Tr. at 14089.)

2190. Dr. Hanushek testified that for approximately 50 years, there has been an ongoing debate within the field of education and economics regarding the impact of school funding on education, and hundreds of studies that have tried to measure the relationship between a district's resources and the educational outcomes of its students. (Tr. at 14093, 14278.)

2191. Dr. Hanushek's testimony primarily focused on costing-out studies and the Pennsylvania Costing Out Study.

2192. Dr. Hanushek testified that the premise underlying costing-out studies is “that scientific methods can provide good advice to decision-makers about how much to spend to achieve some particular goal in education.” (Tr. at 14090-91.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

When asked to opine to a reasonable degree of professional certainty about the usefulness of the APA Costing Out Study as a guide for educational finance decisions in Pennsylvania, Dr. Hanushek stated that, because no “costing-out studies provide a scientific basis for such an effort,” he did not “believe that it's a reliable or trustworthy guide of what the state should do, particularly if the state wanted to improve the quality of its students.” (Tr. at 14090-91.)

2193. Dr. Hanushek opined there is a problem with the fundamental assumption underlying a costing out study, that there is “some systematic and consistent relationship between resources provided to schools and the outcomes of students, the achievement of students,” because “that relationship is currently unknown” and “[w]e have no empirical basis that allows us to take a given goal for achievement and translate that into some required data or ...required dollar amount.” (Tr. at 14092.) Dr. Hanushek explained that other researchers, whom he had relied upon in forming his opinion, had stated that

no existing research demonstrates a straightforward relationship between how much is spent to provide education services and performance whether student[,] school or school district. If such a relationship existed, then state policymakers could simply determine the level of performance they wanted and provide the appropriate amount of revenue or conversely determine how much revenue was available and know the level of performance that could be attained.

(Tr. at 14095-14101.)

2194. Dr. Hanushek believed that earlier studies, as well as more recent studies, that have attempted to analyze the relationship between school resources and student outcomes have been inconsistent in whether they failed to establish a statistically significant relationship between the two. (Tr. at 14093-94.) According to Dr. Hanushek,

some studies “suggest [that] more resources can decrease student achievement” while a number of others suggest that additional resources, in some instances, might increase student achievement. (Tr. at 14093-94.)

2195. Dr. Hanushek discussed numerous methodologies that may be used in a costing-out study. The first he testified about was “the ‘professional judgment method,’ where a group of people associated with schools ... are called together and asked to describe a hypothetical school that would do something that is[not] being done, that would reach different goals.” (Tr. at 14102-03.) The second Dr. Hanushek described was “the ‘successful schools’ or ‘successful district’ approach,” which involves considering the “array of schools in the state [being] look[ed] at” based on “how well they[are] performing in terms of the absolute level of student achievement, and then choosing the lower-cost schools among that set of high-performing schools to decide what it would take to get high performance.” (Tr. at 14103.) Dr. Hanushek testified that the third, “the ‘evidence-based’ approach[,] ... tries to scan the existing scientific literature on specific aspects of schools that might have a positive impact, like extra tutoring of students after school, ... and tries to design a school around a set of previous academic studies.” (Tr. at 14103.) Finally, Dr. Hanushek stated that the fourth approach, “the ‘statistical’ [or] ... ‘cost function method,’[] is a more statistical analysis taking the current data on schools in the state” and attempting to determine “the relationship between what is being achieved by the students in the schools and what the schools are spending.” (Tr. at 14103-04.)

*266 2196. Dr. Hanushek explained that he had found numerous flaws in these methodologies because he deemed that a lot of arbitrary judgments are incorporated in them. (Tr. at 14104-11.) When considering the “professional judgment model,” Dr. Hanushek testified that he believes that people who participate in these approaches “are not trained in designing new schools.” (Tr. at 14104-05.) Additionally, he indicated that participants in the professional judgment model “have a direct conflict of interest because they[are] trying to design the resources that go into the schools they work in” and are “suggested by the parties interested in the result.” (Tr. at 14105.) Further, Dr. Hanushek stated that professional judgment panels are often not asked to consider efficiency in providing these outcomes or the cost of doing so. (Tr. at 14105-06.) With regard to the “successful district analysis,”

William Penn School District; Panther Valley School..., Not Reported in Atl....

Dr. Hanushek opined that the biggest issue is that when school districts are chosen as successful districts, the entity making the choice does not know why the school district is doing well. (Tr. at 14106.) Dr. Hanushek testified that this is important because he believes high achievement “depends upon not only what the schools do, but other factors, like the families and the outside neighborhoods.” (Tr. at 14106.) According to Dr. Hanushek, the successful district analysis also rests on the basic assumption that the spending of one district “tells you what it takes for any other district to get to the [same] level.” (Tr. at 14106-07.) Dr. Hanushek stated the “evidence-based approach” is problematic because it requires the party running the costing out study to directly use research on educational relationships to guide the actual operations of schools, but this is not how academic research is typically designed to be used. (Tr. at 14107-08.) In addition, Dr. Hanushek explained, education research rarely discusses costs, so costs must be determined for each strategy identified in the research. (Tr. at 14107-08.) Finally, Dr. Hanushek testified that the “statistical” or “cost function approach” involves “a lot of arbitrary judgments” that go into these costing out studies, which are “not based on scientific work[] and ... can be manipulated.” (Tr. at 14109-10.) Dr. Hanushek indicated that the author of the Costing Out Study, APA, has acknowledged the above problem in studies it had performed in other states. (Tr. at 14110-11.)

2197. According to Dr. Hanushek, the APA Costing Out Study used the successful district approach, the professional judgment approach, and the evidence-based approach, and, in Dr. Hanushek's view, suffered from all the problems with these methodologies. (Tr. at 14112.) Upon noting that the Costing Out Study was based on a goal of 100% of students in Pennsylvania achieving proficiency in math and reading, which was consistent with the No Child Left Behind Act, Dr. Hanushek stated he does not “know of a school, state, country that has ever achieved a hundred percent proficient, at least when ‘proficient’ is defined as a goal for where you want students to be in terms of achievement.” (Tr. at 14112-13.) However, Dr. Hanushek testified that the No Child Left Behind Act allowed for intermediate achievement levels while on the way to the goal of 100% proficiency by 2014, and that APA looked at the districts who had met the state's intermediate goal by 2005 and reasoned that they would proceed to meet the 100% goal by 2014. (Tr. at 14114-15.) While Legislative Respondents assert that Dr. Kelly similarly acknowledged there were no schools meeting the overall

goal, this is a mischaracterization of Dr. Kelly's testimony. In response to a question of whether the 100% proficiency goal was met, Dr. Kelly explained that he had not looked at the data for 2014, but in 2005-2006, “there were districts that were meeting the standards that were being examined” in the Costing Out Study. (Tr. at 1311-13.) This testimony indicates that, while the overall goal of the Costing Out Study was 100% achievement, this was not the goal being studied at the time the Costing Out Study was being performed.

2198. According to Dr. Hanushek, because the APA study did not identify why the successful schools had been deemed to be successful, the study could not be useful to other districts. (Tr. at 14115.) Dr. Hanushek noted that while the APA did study the educational practices and programs in place in high-performing, low-spending school districts, many of the findings in this regard were not mentioned in the Costing Out Study but were made public through an ancillary report. (Tr. at 14115-18.) While Dr. Hanushek believed that “the most important element of a good school[] is having highly effective teachers,” he testified that he did not believe that the Costing Out Study discussed teacher quality even though it was included in the ancillary report. (Tr. at 14119-21.) Dr. Hanushek further testified that he did not remember the Costing Out Study discussing low-expenditure items identified by APA in the ancillary report based on in its interviews with low-spending, high-performing schools, such as setting high expectations for students, setting up common planning time, and providing district curriculum guidelines. (Tr. at 14121-22.) Dr. Hanushek stated that APA “presume[d] that low spending is the same as highly efficient, but low spending could mean that they had particularly good parents that were helping their students or it might mean a variety of things, but not necessarily ... that the schools['] spending is the most efficient.” (Tr. at 14123.) When asked how APA treated low-spending districts in its report, Dr. Hanushek testified that he believed that it “eliminated” the lowest spending of the high-achieving districts from the report, and, as a result, it could be argued that APA failed to consider the most efficient school districts. (Tr. at 14123-24.)

*267 2199. Relying on the fact that APA provided only the names and job titles of the panelists and omitted information regarding their background or qualifications, Dr. Hanushek opined that the APA professional judgment panel was problematic, as are all professional judgment approaches. (Tr. at 14124-26.) Dr. Hanushek noted that the professional

William Penn School District; Panther Valley School..., Not Reported in Atl....

judgment panel could be difficult to replicate, and it could be hard to get the same results. (Tr. at 14127.) Dr. Hanushek testified that the instructions given to panelists were not revealed, the discussions between panelists were not reported, and it is unclear how panelists reached consensus. (Tr. at 14127.)

2200. Dr. Hanushek also testified that he found the evidence-based portion of the Costing Out Study to be deficient because it is unknown what participants were asked to vote on. (Tr. at 14128-29.) Dr. Hanushek stated: “I just, frankly, have no idea of how you would take a presumably scientifically constructed list to a group of the population and ask them to vote on whether they thought you should use a particular item.” (Tr. at 14129.) Dr. Hanushek explained that although the Costing Out Study mentions a cost-function analysis, it provided no discussion in the report as to how the results of this work had been used. (Tr. at 14130.) To Dr. Hanushek's knowledge, APA has never attempted to validate the findings in its Costing Out Study. (Tr. at 14137.)

2201. Dr. Hanushek agreed that a Senate resolution discussing the APA report, stated that: “the final report does not provide any indication as to how the three methodologies were combined or compared against one another, nor does it provide any other information detailing how the specific recommended numbers and its findings were actually calculated in the study.” (Tr. at 14270-71; Senate Resolution 243, Session of 2010, P.N. 1773.) The Senate resolution further stated: “both the State Board of Education and APA testified to the Education Committee of the Senate on December 8, 2009, that the specific methodology applied to derive the final funding recommendation cannot be disclosed to the General Assembly because APA believes it is proprietary information.” (Tr. at 14271; Senate Resolution 243, Session of 2010, P.N. 1773.)

2202. Dr. Hanushek opined that the Costing Out Study was not a useful and appropriate study in 2007, and it is even less so in 2022. (Tr. at 14130-31.) Dr. Hanushek pointed out that, since the release of the Costing Out Study, multiple changes have occurred, including five different finance law changes, altered teacher evaluation procedures, a change in curriculum for schools, and a change in the testing. (Tr. at 14131-32.)

2203. On cross-examination, Petitioners challenged Dr. Hanushek's testimony regarding his criticism of the Costing

Out Study on a number of bases, including what they viewed as some inconsistent positions of Dr. Hanushek's on the value of costing out studies. However, the Court viewed Dr. Hanushek's criticism as focused more on whether costing-out studies can give precise measures of the funding needed with any degree of scientific or mathematical certainty, (Tr. at 14091, 14100-01), a concern the Court shares. Accordingly, while the Court is not persuaded that it should find the Costing Out Study invalid and not worthy of any consideration in this matter, the Court is not convinced that the adequacy shortfalls derived from the Costing Out Study definitively measure the amount of revenue districts throughout the Commonwealth will need in the future to provide each student a thorough and efficient education. (See FOF ¶ 1906.)

*268 2204. In addition to his analysis on costing out studies, Dr. Hanushek testified that he “ranked all of the 50 states in terms of performance on the NAEP exam in both 2005 and 2019 to provide an indication of where Pennsylvania fell” nationally. (Tr. at 14139-40.) Dr. Hanushek testified that between 2005 and 2019, Pennsylvania's NAEP scores in 4th grade reading and math and 8th grade math improved significantly relative to other states, although Pennsylvania's NAEP scores in 8th grade reading declined slightly. (Tr. at 14138-40.) According to Dr. Hanushek, “what Pennsylvania was doing in its schools in that time period seemed to be more effective than what other states were” doing. (Tr. at 14140.)

2205. Based on his knowledge and experience, Dr. Hanushek explained that the research suggests that it is more important how the funds are used than how much money is spent when working to improve student performance. (Tr. at 14276-77.) As Dr. Hanushek stated:

Education finance systems, in general, just provide an amount of money that school districts can decide how it's used, something with direction. But teacher salaries are effectively determined by the experience of teachers and the degree levels of teachers. It turns out that neither of those is systematically related to effectiveness of teachers, and as a result, salaries are unrelated to the

William Penn School District; Panther Valley School..., Not Reported in Atl....

effectiveness of teachers. So that school finance models that are used to just increase all salaries have nothing to do with ensuring that effective teachers are in the schools.

(Tr. at 14281.)

2206. Dr. Hanushek, like other expert witnesses for both parties, agreed that some children, including children living in poverty, ELL students, children with disabilities, and children living in rural areas, need more supports and services to access their education. (Tr. at 14151.) He also agreed that the challenges of poverty are not insurmountable if the resources are used well, (Tr. at 14151), and stated that reductions in funding are likely to have a negative impact on student achievement “because it disrupts what schools are doing,” (Tr. at 14150).

2207. With regard to the effect of the pandemic on learning, Dr. Hanushek testified that economically-disadvantaged students have suffered larger learning losses than others, and that these losses will absolutely have disparate long-term consequences on those students’ educational outcomes and future wages. (Tr. at 14154.)

2208. Dr. Hanushek testified that he believed standardized testing is an appropriate way to evaluate a school system’s success because such tests provide an “essential source of indispensable information about our education system” without which “our education systems would be flying blind, uncertain whether schools are following a flight plan and getting close to the intended destination.” (Tr. at 14254.) Dr. Hanushek added that standardized test scores are “an important measure because students’ skills ... as measured in those tests will actually dictate our economic future ... and test scores say a lot about what our labor force will look like over the coming decades[.]” (Tr. at 14255.)

2209. Dr. Hanushek testified that although the issue of class-size reductions has been widely studied, in his opinion, the results of the majority of those studies do not suggest a reduction in class size, which is very costly, will lead to an increase in students’ achievement levels. (Tr. at 14288-89.) He explained that although, over time, class sizes

across the United States have been dramatically reduced, the evidence did not suggest that this development has caused achievement levels to increase. (Tr. at 14288-89.) Dr. Hanushek stated that, in addition, there is a wide distribution of outcomes in the studies regarding how class size relates to achievement. (Tr. at 14288-89.) According to Dr. Hanushek, in the majority of “value-added” studies, researchers find no evidence that would instill any “confidence that class size reduction matters.” (Tr. at 14288-89.) Dr. Hanushek explained that “Value-Added Models attempt to separate out the independent influence of teachers and schools from the influence of parents and neighborhoods and peers in the schools.” (Tr. at 14280.) Dr. Hanushek’s testimony regarding the impact of class size conflicts with that of other witnesses, including Dr. Johnson, and Mr. Willis, who identified studies that reach the opposite conclusion, the Court finds the contrary evidence on this point more persuasive and, therefore, gives it more weight than Dr. Hanushek’s testimony.

*269 2210. Looking back, Dr. Hanushek stated that over the past 60 years, school districts’ expenditures per-pupil have quadrupled nationally in real terms even after adjusting for inflation, yet this additional spending has not led to measurable results in student achievement, and the achievement gap has not gone away. (Tr. at 14295.)

2211. Dr. Hanushek also expressed his concern that additional “school funding, if provided, may not be efficiently spent.” (Tr. at 14213.) Dr. Hanushek acknowledged that he did not have a response to the question “would you agree that depriving school children of school resources[] based on the possibility that money will be inefficiently used is an unacceptable solution to trying to address the issue of ensuring that children receive the resources they need.” (Tr. at 14213-14.) While the Court recognizes, as other witnesses have testified, how funds are spent is an important inquiry, the Court agrees with the Supreme Court of Alabama that: “Neither does this [c]ourt view the possibility that school funds may be inefficiently or unproductively spent, which is raised by the testimony of Dr. Hanushek, as a valid defense to plaintiffs’ constitutional claims. (Tr. at 14213-15 (quoting *Opinion of the Justices*, 624 So.2d 107, 146 (Ala. 1993)).) An argument “in this regard is tantamount to a contention that the state is not compelled to offer [p]laintiffs a constitutionally adequate and equitable education because it is no good at doing so, a position this Court declines to endorse.” (Tr. at 1215 (quoting *Opinion of the Justices*, 624 So.2d at 146).)

2212. When questioned about Dr. Johnson's 2016 study, Dr. Hanushek opined that “the answers [from these studies] are [not] credible. They just don't make any sense. It's like they're from a different world.” (Tr. at 14291.) Dr. Hanushek testified that with all empirical work, it is important to ensure that the conclusions of a study “make sense in relation to reality,” and that the real-world results do not match the predictions Dr. Johnson made in his study. (Tr. at 14294.) Dr. Hanushek explained that, while Dr. Johnson's study concluded that increasing per-pupil expenditures by 20% over time would significantly close the outcome gap between poor and non-poor students, there has been a 150% increase in real-world expenditures per-pupil (adjusted for inflation) over the time period of the study and the attainment and achievement gaps have not closed, and student achievement scores have not increased significantly. (Tr. at 14293-95.)

2213. While Dr. Hanushek disagrees with Dr. Johnson's study, Dr. Hanushek did not conduct an analysis of spending and achievement in this case, and both Dr. Johnson and Mr. Willis explained that although Dr. Hanushek's contrary research is well known, it is also methodologically limited, subject to statistical bias, and has been eclipsed by more rigorous scholarship that directly contradicts his claims. (Tr. at 12891-92; *see also* Tr. at 9546-49, 9863-64, 9686-88.) The Court notes Dr. Hanushek's criticisms of Dr. Johnson's study, but the Court is persuaded by Dr. Johnson's testimony regarding criticisms to his study and the fact that the rigorousness of Dr. Johnson's study was acknowledged by Mr. Willis and Dr. Koury, the former of whom has cited that study in his own writings. Therefore, the Court is not persuaded by Dr. Hanushek's criticisms to the validity of the Dr. Johnson's study.⁷³

H. Effect of Funding Scheme on Low Wealth Districts

*270 2214. The evidence demonstrates there are wide achievement gaps and other significant differences in student outcomes, such as graduation and attainment rates, between low and high wealth districts. This is true across a variety of measures, beginning with the PSSA and Keystone Exams, which, under the School Code, are used by the Commonwealth “to measure objectively the adequacy and efficiency of the educational programs offered by the public schools of the Commonwealth.” 24 P.S. § 2-290.1. The

evidence shows these gaps are not limited to just Petitioner Districts, but also are statewide.

2215. Petitioners presented documentary evidence of the inadequacies in the educational system. Using Department data, Petitioners showed that, for each year from 2015 to 2019, over 300,000 of the approximate 870,000 students in Pennsylvania taking the PSSA and Keystone Exams did not reach proficiency in ELA/Literature:

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(PX-04852.)

2216. Using Department data, Petitioners showed almost 500,000 students taking the state assessments in mathematics/algebra I did not score proficient in each year from 2015 to 2019:

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(PX-04853.)

2217. Petitioners presented considerable evidence of the inequalities in the educational system, which falls disproportionately on the students who attend the least wealthy school districts. According to Dr. Kelly, the students in the poorest quintile districts are meeting state standards at a lower rate across a range of different measures than those students in higher wealth districts. (Tr. at 1249.) For example, students who attend a district in the lowest wealth quintile score, on average, 31 percentage points lower on the mathematics/algebra portion of the state's PSSAs and Keystone Exams than students who attend a district in the highest wealth quintile, 24 percentage points lower in science/biology, and 28 percentage points lower in ELA/literature. There are also gaps between the second poorest quintile and the wealthiest quintile, as the below chart illustrates:

William Penn School District; Panther Valley School..., Not Reported in Atl....

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3-8 scored only 11.01% proficient or advanced on the math PSSA exams, meaning only 1 in every 10 students scored proficient or advanced. (PX-04867.)

*271 2221. Students in the other Petitioner Districts also received inadequate scores, as the below tables illustrate:

(PD-00003-0030; *see also* PD-00003-0069 (all five quintiles).)

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2218. Dr. Johnson found similarly: students in Pennsylvania's most affluent districts are performing two to three grade levels above students in lower income, more disadvantaged districts. (Tr. at 9559; PD-00016-0011–0012.)

(PX-04866.)

2219. Dr. Kelly also found the quintile of districts meeting state standards at the highest average rates, in all three subject areas, are spending more in expenditures per need-adjusted pupil than those districts that are in the lowest performing quintile. For mathematics/algebra, he found districts in the highest performing quintile spent \$4,739 more in need-adjusted expenditures per pupil than the districts in the lowest performing quintile. In science/biology, the gap was \$4,685; and in ELA/literature, the gap was \$4,612. (Tr. at 1224-25.)

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(PX-04867.)

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2222. Although students can take the Keystone Exams multiple times if they fail, performance across all three tests – literature, biology, and algebra I – was also extremely poor every year between 2015 and 2019, according to Department data:

(PD-00003-0032.)

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2220. These patterns – overall inadequacy, compounded by low wealth – are also seen in the PSSA and Keystone Exam results of Petitioner Districts and SDP, using Department data. Across all five years, across all subjects, across all seven districts, students in Petitioner Districts and SDP are trailing behind the state average, often by 30 percentage points or more. For example, from 2015 to 2019, Greater Johnstown's students did not achieve higher than 32% proficient or advanced on the ELA PSSA test across grades 3-8. During this same time period, the statewide average of all students in grades 3-8 scoring proficient or advanced on the ELA PSSA was at least 60% each year. (PX-04866.) Greater Johnstown students scored less than 16% proficiency on the math PSSA, while the statewide average was approximately 40%. (PX-04867.) In 2019, William Penn's students in grades

(PX-04868.)

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(PX-04869.)

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William Penn School District; Panther Valley School..., Not Reported in Atl....

(PX-04865.)

2223. Dr. Kelly showed the existence of a gap between the test scores of students who attend one of the Petitioner Districts and the average performance of students attending one of the two wealthiest quintile districts, as illustrated by the following table:

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(PD-00003-0031.)

2224. Results are also unacceptably low in rural Otto-Eldred School District, where large numbers of children fail to reach proficiency across grades.

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(PX-04857.)

2225. The Department designated a large number of schools in the Petitioner Districts and SDP as “low achieving” based on their combined mathematics and reading scores on state assessments. 24 P.S. § 20-2002-B. (See also Tr. at 1675-76; PX-02032 (identifying “low-achieving” schools).) For 2020-21 and 2021-22, for example:

- a. Each of Greater Johnstown's schools was labeled as low-achieving. (PX-02032, Rows 115-118, Column 13.)
- b. Two of Panther Valley's three schools were labeled as low-achieving. (PX-02032, Rows 121-122, Column 13.)
- c. One of Shenandoah Valley's two schools was labeled as low-achieving. (PX-02032, Row 506, Column 13.)
- d. Nine of William Penn's 10 schools were labeled as low-achieving. (PX-02032, Rows 167-175, Column 13.)
- e. Twelve of Lancaster's 19 schools were labeled as low-achieving. (PX-02032, Rows 235-248, Column 13.)

f. Six of Wilkes-Barre's 11 schools were labeled as low-achieving. (PX-02032, Rows 286-291, Column 13.)

g. 148 of SDP's 216 schools were labeled as low-achieving. (PX-02032, Rows 325-484, Column 13.)

2226. Proficiency on the PSSAs and Keystone Exams is also a critical part of the determination of whether a school falls in the CSI, A-TSI, or TSI groups, and as a result, schools in Lancaster, SDP, and William Penn are designated as CSI, and schools in each Petitioner District and SDP are designated as A-TSI. (Tr. at 1686, 1688; see PX-01806.)

2227. CSI schools are disproportionately – 79% – in the poorest quintile districts, according to Dr. Kelly. (Tr. at 1246-48.)

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(PD-00003-0042.)

2228. Racial and ethnic minorities and economically-disadvantaged students, are subgroups for which the Department disaggregates its data, and they are also performing at significantly lower rates. Former Deputy Secretary Stem testified that NAEP achievement “gaps hold fairly steady over time with Pennsylvania having among the largest gaps in the nation.” (Tr. at 1861; see also Stem Dep. Vol. 2 at 368.) For example, in 2015, fourth grade reading scores on the NAEP exams were 234 for White students, compared to 205 for Black Students, and 201 for Hispanic students. (PX-01830-0116.) Low-income students who were eligible for the National School Lunch Program scored 28 points lower than students who were not eligible for free or reduced lunches on the same exam. (PX-01830-0117.)

*272 2229. In recognition of the achievement gaps, in the state's ESSA Plan, the Department made the decision to set separate, lower goals for traditionally underserved groups rather than setting uniform goals for all students. (PX-01830-0021; Tr. at 1832-33.) Therefore, even were Pennsylvania to achieve all of its goals by 2030 — which the Department admits will not happen without

William Penn School District; Panther Valley School..., Not Reported in Atl....

additional funding — significant achievement gaps will remain throughout the system. (*See, e.g.*, PX-01830-0166–0169.) Dr. Rau described being “shocked when [she] saw that the state had lowered its standards for children of color in this state.” (Tr. at 5175.) Former Deputy Secretary Stem called this decision one of the “greatest struggles [the Department] had.” (Tr. at 1826.)

2230. Former Deputy Secretary Stem explained the ultimate decision to have different goals was not because of any belief about the innate ability of certain students, but rather a recognition of the depth of existing inequities within Pennsylvania's school funding system itself. (Tr. at 1833-34; PX-01830-0021.) Former Deputy Secretary Stem testified: “The very starting point is a reflection of the historic inequities in our system that have created the conditions where this is where — this is where we're starting.” (Tr. at 1837.)

2231. The Department also acknowledges that funding inequities are one of the “fundamental root causes” of these gaps and that increased funding is necessary to address them. (Tr. at 1822, 1828-29, 2538.) These gaps demonstrate that the way the system is funded is failing its most vulnerable, traditionally underserved children: students of color, economically-disadvantaged students, and historically underperforming students, including ELL students and special education students. And as the Department recognizes, and Dr. Kelly demonstrated in his analysis, a common denominator of these disparities in student outcomes is funding inequities.

2232. The PSSA and Keystone Exam proficiency rates show evidence of longstanding achievement gaps between student subgroups that are prevalent throughout the Commonwealth, which the Department has recognized in its ESSA Plan. (Tr. at 1800; PX-01830-0021–0022.)

2233. According to Department data, in 2019, Black and Hispanic students made up approximately 470,000 of Pennsylvania's 1.7 million public school students, and they disproportionately fall into the poorest quintile districts as described by Dr. Kelly. (PX-02098, Tab “Statewide,” Rows 26 and 27, Column T; Tr. at 1288-89.)

2234. On the PSSA and Keystone Exams in the 2018-19 assessment year, Black and Hispanic students scored

advanced or proficient at a lower rate than the state average. The state average for all students scoring advanced or proficient was 62.98% in ELA, 45.52% in math, and 64.28% for science. The percentage of Black students scoring advanced or proficient was 37.10% in ELA, 18.35% in math, and 34.60% in science. Hispanic students similarly underperformed state averages, with only 42.39% scoring proficient/advanced in ELA, 24.54% in math, and 42.36% in science.

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(PX-04843.)

2235. Department data also shows that Black and Hispanic students scored advanced or proficient at lower rates than their White peers on the 2019 state assessments. Specifically, 71.48 % of White students scored advanced or proficient in ELA, 54.01% in math, 73.19% in science. In comparison, Black students scored advanced or proficient 34% lower than their White peers in ELA, 36% lower than their White peers in math, and 39% lower than their White peers, while Hispanic students scored advanced or proficient 29% lower than their White peers in ELA and math and 31% lower than their White peers in science. (PX-04843; *see also* Tr. at 9568 (discussing PD-00016-0013–0014).)

*273 2236. Former Deputy Secretary Stem testified these achievement gaps are caused, in large part, by the lack of resources in the low-wealth districts where students of color are disproportionately educated. (Tr. at 1805-06, 2538.) Dr. Johnson testified “the achievement gaps that we see, we can trace them back to educational opportunity gaps.” (Tr. at 9556.) To that end, these gaps cannot be mitigated without more resources. (Tr. at 1822; *see also* Tr. at 9432, 9453.)

2237. The Commonwealth's funding system is not providing support to students who need it the most, including economically-disadvantaged students, ELL students, and students with disabilities. On the 2018-19 PSSA and Keystone Exams, Department data shows that fewer than half of all economically-disadvantaged students scored advanced or proficient in ELA (47.03%) and science (48.83%), and

William Penn School District; Panther Valley School..., Not Reported in Atl....

less than one-third scored advanced or proficient in math (28.91%), trailing at least 15 percentage points behind the statewide average for all students in every subject area (62.98%, 64.28%, and 45.52%, respectively). (PX-04843.) Economically-disadvantaged students saw lower rates of advanced or proficient scoring by 16 percentage points in ELA, 15 percentage points in science, and 17 percentage points in math than their non-economically-disadvantaged peers. (See Tr. at 1804-05; PX-04843.)

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(PX-04860.)

2238. Disaggregated outcome data also demonstrates that there are gaps for ELL students and students with disabilities. According to Department data, on the 2018-19 state assessments, 25.78% of ELL students scored advanced or proficient in ELA, 18.72% in math, and 28.95% in science. For the same exams, 27.69% of students with disabilities scored advanced or proficient in ELA, 19.17% in math, and 32.29% in science. Statewide the average for all students was 62.98% in ELA, 45.52% in math, and 64.28% in science. (PX-04843.)

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(PX-04861.)

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2239. Historically underperforming students, which includes ELL students, students with disabilities, and economically-disadvantaged students, (Tr. at 1226-27), struggle in the state, in the Petitioner Districts, and in SDP, failing the PSSAs in large numbers according to Department data:

(PX-04863.)

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(PX-04862.)

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2241. In every year between 2015 and 2019, historically underperforming students in the Petitioner Districts and SDP have had, with limited exceptions, even lower proficiency rates than the statewide PSSA and Keystone averages for historically underperforming students, often by as much as 10%. (See PX-04860; PX-04861; PX-04862; PX-04863; PX-04864.)

2242. Dr. Kelly testified that economically-disadvantaged students who attend a district in the highest wealth quintile performed better on the 2018-19 state assessments than economically-disadvantaged students who attend a district in the lowest wealth quintile, as illustrated on the chart below. (Tr. at 1227.)

(PX-04864.)

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2240. Historically underperforming students also are scoring basic or below basic in proficiency on the Keystone Exams in large numbers:

(PD-00003-0033.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

2243. This holds true across quintiles, with economically-disadvantaged students performing better on state standardized tests in schools that fall into wealthier quintiles — performance of economically-disadvantaged students improves at every wealth quintile. (Tr. at 1228-29; *see* PD-00003-0070.)

*274 2244. These patterns for economically-disadvantaged student performance hold when comparing districts by need-adjusted expenditures; in other words, districts that spend more relative to their needs are better able to help their students achieve. In Springfield Township, for example, economically-disadvantaged students performed better on the ELA/literature and mathematics/algebra 2018-19 state assessments than the statewide average for all students. (Tr. at 10544-45; PD-00006-0013.) Specifically, 74.4% of Springfield Township High School students classified as economically disadvantaged scored proficient or advanced in ELA/literature, compared to the statewide average for all students of 62.1%, and 60.5% of economically-disadvantaged students attending Springfield Township High School scored proficient or advanced in mathematics/algebra, compared to the statewide average for all students of 45.2%. (PD-00006-0013.) The same is true at Lower Merion High School where 80.6% of economically-disadvantaged students scored proficient or advanced on the 2019-20 state assessments in ELA/literature compared to a statewide average of 62.1%, according to the school's Future Ready PA Index. In mathematics/algebra, 72.2% of economically-disadvantaged students at Lower Merion High School scored proficient or advanced, compared to a statewide average of 45.2%. Notably, in the 2019-20 school year, Lower Merion's economically-disadvantaged students were meeting or within one-half percentage point of meeting the statewide 2030 goal, which was 81.1% in ELA/literature and 71.8% in mathematics/algebra. (*See* PX-02246-0001; Tr. at 7875-77.)

2245. As the below chart illustrates, and Dr. Kelly's testimony confirms, economically-disadvantaged students in districts in the highest need-adjusted expenditure quintile, meaning those spending the most relative to their needs, perform substantially better on Commonwealth standardized tests than economically-disadvantaged students in the lowest need-adjusted expenditures. (Tr. at 1230-31.)

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(PD-00003-0035.)

2246. Likewise, as the table below illustrates, and as Dr. Kelly testified, economically-disadvantaged students in Petitioner Districts have lower performance rates than economically-disadvantaged students in the wealthiest quintile districts. (Tr. at 1228-30.)

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(PD-00003-0034.)

2247. Similar to economically-disadvantaged students, historically underperforming students who attend a district in the lowest wealth quintile score proficient or advanced on state assessments at lower rates than historically underperforming students who attend a district in a wealthier quintile. (Tr. at 1231-33.) For example, 45.15% of historically underperforming students attending a district in the wealthiest quintile scored proficient or advanced on the Math Grade 4 PSSA, whereas only 25.25% of their counterparts who attend a district in the poorest quintile scored proficient or advanced. Performance in the interim quintiles increases as district wealth increases. By way of example, 36.45% of historically underperforming students who attend a district in the second poorest quintile scored proficient or advanced on the same exam, 37.03% of those attending a district in the middle quintile did, and 39.56% of historically underperforming students who attended one of the districts in the second wealthiest quintile did. This trend is also apparent on the 2018-19 state assessments in other grades and subjects. (PD-00003-0071.)

2248. Other assessments, including Petitioner Districts' own internal assessments, show low achievement. One example of an internal assessment is in Greater Johnstown, which conducts internal assessments of reading/literacy and math/

William Penn School District; Panther Valley School..., Not Reported in Atl....

numeracy skills using a tool called AIMSWEB. (Tr. at 2616-17.) The district uses this tool to assess whether children require enhanced interventions through Tier 2 and Tier 3 supports of MTSS. (Tr. at 2626-27.) From 2017 to 2019, these AIMSWEB diagnostics determined that Greater Johnstown's students required enhanced interventions at very high levels; classes entered the year with significant majorities of students requiring Tier 2 or 3 supports. (PX-04824; Tr. at 2628-29.)

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(PX-04824.)

2249. Dr. Arcurio testified that subsequent testing indicated that the district was unable to close these gaps. (Tr. at 2629.) For example, according to the results of the AIMSWEB diagnostic tool, in 2018-19, 102 kindergarten students (or 50% of the class) started the year requiring Tier 3 interventions and 63 students (or 31% of the class) started the year requiring Tier 2 interventions in numeracy. (PX-00191.) By the spring, when the diagnostic test was administered again, 78 students remained in the Tier 3 category and 20 students remained in the Tier 2 category. (PX-00191; *see also* Tr. at 3281-82.)

*275 2250. Greater Johnstown also conducts internal assessments of middle and high school students using CDT, which is provided by the Department. (Tr. at 2630.) Like the AIMSWEB assessment, CDT demonstrates that the vast majority of Greater Johnstown sixth graders in reading and seventh graders in math are not at grade level and require Tier 2 or 3 academic supports in the 2018-19 school year. (*See* PX-00204; PX-00210; Tr. at 2631-38.)

2251. According to a William Penn internal reading assessment called "Success For All," in 2018-19, only 68% of kindergartners were reading or had mastered the skills that were being taught for reading by the end of their kindergarten year. (Tr. at 6919; *see also* PX-04644.) Overall, 50% of the District's elementary age students were below grade level in reading. (Tr. at 6919-20; PX-04644-0002.) And CDT showed that an overwhelming number of students in grades 3-6 are

also not proficient in math concepts. (Tr. at 6920-26; *see also* PX-04166.)

2252. Lancaster also administers CDT several times a year in order to determine how students are performing compared to the state standards in math, reading, algebra, biology, and literature, and the district then uses that data to plan supports for students for the PSSAs and Keystone Exams. (Tr. at 5064-65.) As of January of the 2018-19 school year, 69% of third graders, 64% of fourth graders, 70% of fifth graders, 77% of sixth graders, 74% of seventh graders, and 80% of eighth graders were below level in reading. As of February of the 2018-19 school year, 78% of third graders, 82% of fourth graders, 86% of fifth graders, 88% of sixth graders, 91% of seventh graders, and 99% of eighth graders were below level in math. (PX-00389-0002.)

2253. SDP uses internal assessments to measure whether eight-year-olds are reading on grade level, and for every school year from 2012-13 to 2018-19, more than half were not, with 2012-13 being the highest percentage year at 52% and 2014-15 being the lowest percentage year at 44%. (Tr. at 7883-84; PX-03086.)

2254. According to the ACCESS exam, which the Department requires all districts to administer to ELL students to measure their English language proficiency, 46% of SDP's ELL students in grades 1-5 who were in its sample of 5,757 students met their annual growth target in 2018-19. While 89% of first grade ELL students in the sample met their target, only 43% did in second grade, 36% in third grade, 43% in fourth grade, and 30% in fifth grade. (Tr. at 7723, 7729-30; PX-03082-0004-0005.) Only 15% of ELL students in grades 6-12 at SDP met their growth target for English language development, with 13% of ELL students in grades 6, 7, and 12 meeting their target, 12% of ELL students in grade 8 meeting their target, 23% of ELL students in grade 9 meeting their target, and 15% of ELL students in grades 10 and 11 meeting their target. (Tr. at 7731; PX-03083-0004-0005.)

2255. Economically-disadvantaged students in charter schools also struggle to meet state standards. Dr. Kelly testified a Center for Research on Educational Outcomes study did not find substantial differences in performance, but when comparing the proficiency of economically-disadvantaged students attending charter schools, especially cyber charter schools, he determined those students

William Penn School District; Panther Valley School..., Not Reported in Atl....

performed significantly worse than those who attended traditional public schools within the Commonwealth. (Tr. at 1269-71.) When comparing charter performance to districts with concentrated poverty – those districts with 30% or more economically-disadvantaged students – public school districts outperform both brick-and-mortar and cyber charter schools. (Tr. at 1271.)

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(PD-00003-0049.)

2256. This is consistent with evidence of CCA students' performance on state assessments, where, on the 2019 PSSA, 40.7% of its students scored proficient or advanced in ELA, 11.5% in math, and 50.5% in science, and on the 2019 Keystone Exams, 28.6% of CCA students scored proficient or advanced in algebra, 48% in literature, and 28.1% in biology. (See FOF ¶¶ 1775-1776.)

2257. Former Deputy Secretary Stem testified that “outcomes for students in cyber charter school ... are lower than they are for — not only for brick-and-mortar public school students, but when compared to their brick[-]and[-]mortar charter counterparts.” (Tr. at 2006.) The Department has proposed a moratorium on new cyber charter schools, including a “[l]imit [on] student enrollment in low-performing cyber charter schools until outcomes improve.” (PX-04899-0002; Tr. at 2005-07.)

2258. There are gaps in the number of minority students who take AP exams and the results they receive. In 2018-19, Black and Hispanic students, making up more than one-quarter of Pennsylvania's student body, (see FOF ¶ 2233), represent just under 11% of test takers. And there is a disparity between the Black and Hispanic students that take the tests and their White counterparts. Approximately 70% of White students received a score of 3 or higher on AP exams. For Hispanic students, that number fell to approximately 53%. For Black students, it fell to approximately 32%. While just 9% of White students receive a score of a 1, 23% of Hispanic students and 43% of Black students do.

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(PX-07000.)

2259. On the SAT exams, not a single school within a Petitioner District has an average score of 1,000 for students in the 2019 graduation cohort. The average score was 990.6 at Greater Johnstown; 885.5 at Lancaster's McCaskey High School; 966.7 at Panther Valley; 972 at Shenandoah Valley; 962, 912.9, and 995.7 at Wilkes-Barre's Meyers, GAR, and Coughlin high schools; and 919.5 at William Penn. (PX-02141, (sorted alphabetically by district), Rows 225-226, 291-292, 411, 560, 671-674, Column F.)

2260. The same disparities are demonstrated in SAT results by student subgroup. According to a College Board report for Pennsylvania, of the 2020 high school graduates who took the SAT during high school, only 10% were Black students and only 10% were Hispanic students, compared to 66% of White students. Black students' mean score was 913, Hispanic students' mean score was 978, and White students' mean score was 1114.

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(LR-01986-0004 (excerpt); Tr. at 2526-27.)

2261. In addition to achievement scores, there are also deficiencies in graduation rates, as evidenced by Department data. Graduation rates in the Petitioner Districts and SDP fall below the statewide average and these districts are consistently among the 50 worst-performing districts in the state. For the 2019-20 school year, three of the Petitioner Districts – Greater Johnstown, Lancaster, and William Penn – along with SDP had four-year cohort graduation rates lower than 80%, placing them all in the bottom 25 of 499 districts. The remaining Petitioner Districts fared little better, and none of them met the statewide average of 87.36%.

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(PX-04855 (excerpt).)

2262. According to Dr. Kelly, students in the poorest quintile of districts are graduating at a rate almost 10 points lower than students in the wealthiest quintile of districts (86.0% versus 94.1%), a pattern that also holds for 5-year graduation rates (88.2% versus 96.0%). (Tr. at 1240; *see also* PD-00003-0040.) Students who drop out of school are disproportionately concentrated in the lowest wealth districts. (Tr. at 1245.)

2263. As former Deputy Secretary Stem testified, “any students that are — that are not graduating are going to be individuals at high risk of not only — you know, not being productive citizens, but not living — not living their lives to their fullest potential. They're set up for high-risk situations without having a high school degree.” (Tr. at 1809.)

2264. There are also disparities in Pennsylvania's high school graduation rates among student subgroups. In 2019-20, according to Department data, 91.40% of White students graduated with their four-year cohort, which exceeded the statewide average for all students of 87.36%. Black students, at 76.53%, and Hispanic students, at 77.21%, were below the statewide average and the rate of their White peers.

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(PX-04851.)

2265. According to Department data, only 79.60% of economically-disadvantaged students graduated from high school in 2019-20, compared to 87.36% of all students statewide. (PX-04851.) Moreover, because the “all students” subgroup includes the same underperforming economically-disadvantaged students, the true achievement gaps for state

assessments and graduation rates are even larger than they appear in state data. (Tr. at 1804-05, 1808.)

2266. Former Secretary Ortega explained the pre-K-12 system of education plays an important role in preparing students for success in higher education, and insufficient investments in the pre-K-12 system lead to disparities in college attendance and attainment. (Tr. at 8734.) It is for this reason that Legislative Respondents' expert Mr. Willis agreed that one should measure postsecondary enrollment and postsecondary graduation rates when evaluating the performance of a public school system. (Tr. at 13008-10.)

2267. According to NSC data acquired and used by the Department, the statewide average for college enrollment among members of the graduating class of 2013 was 61.99%. (PX-04840.) For that same 2013 class, none of the Petitioner Districts, nor SDP, met the statewide average enrollment.

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(PX-04840.)

2268. These percentages apply only to that subset of students who graduate from high school, which hovers around 80% or lower among the Petitioner Districts' four-year cohorts. (PX-04855.) In other words, if 80% of a district's students graduate high school, and 40% of those students enroll in college, that means that only 32% of the district's total student population goes on to enroll in college.

2269. Per Department data for the 2013 high school graduating class, 53.48% of Black graduates and 45.09% of Hispanic graduates enrolled in college, less than the statewide average for all students of 61.99% or the average for White students of 64.36%. (PX-04840.) The State Board, looking at similar data, found the trends “concerning,” particularly given that the population of high school students is becoming more diverse. (Tr. at 4442.)

*278 2270. For the class of 2017, Department data showed statewide college enrollment numbers of 61.98%, while the enrollment numbers for the Petitioner Districts and SDP are

William Penn School District; Panther Valley School..., Not Reported in Atl....

lower than that. No Petitioner District, nor SDP, met the statewide average according to Department data.

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(PX-04842.) These percentages were similar in the high school class of 2017, where 53.58% of Black graduates, and 47.75% of Hispanic graduates enrolled in college, which were less than the statewide average for all students of 61.98% and for White students of 64.40%. (PX-04842.)

2271. Gaps were also apparent with postsecondary outcomes. According to NSC data acquired and used by the Department, only 48.0% of economically-disadvantaged students in the 2017 graduating class enrolled in college within one year, compared to 70.8% of non-economically-disadvantaged students. Statewide for all students, the average was 62.0%. (See PX-00104, Tab “StatewideEconomicallyDisadvanta,” Rows 4, 8, and 12, Column J.)

2272. The State Board has adopted a goal that 60% of Pennsylvanians aged 25-65 will attain a postsecondary degree or credential by 2025. (PX-03336; PX-03339-0002; Tr. at 1838, 4233-35.) At the time the goal was set in 2016, attainment was around 44%. As of the fall of 2021, the Commonwealth's attainment rate was around 50%. (Tr. at 4393-94.) According to a presentation by the Department, Pennsylvania's attainment rate is lower than neighboring states whose attainment rates are 54.3% (New York), 55.9% (Maryland), and 56.6% (New Jersey). (PX-07008-0006; Tr. at 4439.) When Pennsylvania is compared to other states nationally, the District of Columbia, Puerto Rico, and 28 other states have postsecondary attainment rates that were higher than Pennsylvania's. (PX-07008-0006.)

2273. According to NSC data acquired and used by the Department, the percentage of class of 2013 graduates who obtained a 2- or 4-year college degree within 6 years of graduating, on a statewide basis, was 42%. (PX-00104, Tab “StatewideEconomicallyDisadvanta,” Row 14, Column F; Tr. at 8709-11.)

2274. According to NSC data acquired and used by the Department, although the state average is about 42%, no Petitioner District had more than one-third of its students from the class of 2013 acquire a college degree within 6 years of graduating high school. For example, while William Penn sent 61.21% of its 2013 graduates to college, just shy of the state average, (PX-04840), only 20.69% of those students actually obtained their college degree in six years, less than half the state average, (PX-04841). And while Wilkes-Barre sent 53.8% of its graduates to college, (PX-04840), only 33.4% graduated college in six years, (PX-04841).

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(PX-04841.)

2275. Department data shows that Black, Hispanic, and economically-disadvantaged students enroll in and complete postsecondary degree within six years of high school graduation at almost half the rate of all students and their White counterparts. (Tr. at 8699; PX-03338-0013.) For the high school class of 2011, 41.4% of all graduates earned a postsecondary degree within 6 years. By student subgroup, the rates were 19.9% for Black graduates, 20.7% for Hispanic graduates, and 19.9% for economically-disadvantaged graduates. Meanwhile, 46.3% of White graduates earned a postsecondary degree within 6 years. (Tr. at 8698-99; PX-03338-0013.) According to NSC data acquired and used by the Department, six-year degree attainment rates among the class of 2013 was 42.04% statewide for all graduates, 20.61% for Black graduates, 20.23% Hispanic graduates, and 47.31% for White graduates. (PX-04841.)

*279 2276. As a result, racial and ethnic gaps between individuals who hold degrees are similarly significant, in what former Secretary Ortega termed as “huge difference[s].” (Ortega Dep. at 130.) According to a Department presentation in September 2021, 47% of Whites 25-to 64-years old in 2019 had a “postsecondary credential of value,” compared to only 30% of Blacks and 24% of Hispanic in the same age group. (PX-07008-0007; Tr. at 4442-43.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

2277. NSC data acquired and used by the Department shows that, of 2013 high school graduates, 21.4% of economically-disadvantaged students obtained a degree within 6 years. (PX-00104, Tab “StatewideEconomicallyDisadvanta,” Row 6, Column F.) For non-economically-disadvantaged students, that number was 52.3%. (PX-00104, Tab “StatewideEconomicallyDisadvanta,” Row 10, Column F.)

2278. In the 2012 cohort, 19.02% of economically-disadvantaged students who attended a high school in quintile 1, the lowest wealth quintile, completed college within 6 years. The rates steadily increased as district wealth increased. In quintile 2, the rate was 24.17%; in quintile 3, the rate was 24.60%, in quintile 4, the rate was 29.89%, and in quintile 5, the wealthiest quintile, 32.93% of economically-disadvantaged students who graduated from a high school within the quintile completed college within 6 years. (PD-00003-0074.) Grouping districts by another measure — the percentage of students classified as economically disadvantaged — Dr. Belfield found the same patterns, with economically-disadvantaged students graduating college at far higher rates when they graduate from a school district with greater advantage, 31% compared to 19%. (PD-00014-0007.)

2279. Dr. Kelly testified economically-disadvantaged students that graduate from a wealthier quintile district go on to graduate from college within six years at higher rates than economically-disadvantaged students attending a district in the poorest quintile, as the below chart illustrates. (Tr. at 1243-44.) This holds true across the 2010, 2011, and 2012 cohorts.

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(PD-00003-0041.)

2280. Behind these numbers are the stories of students who leave their districts unprepared for life after high school when they did not receive an education that made them college and career ready. Mr. Horvath, a recent graduate of Wilkes-Barre, and S.A., a recent graduate of SDP, are two of those students. Mr. Horvath credibly testified that he did not have the skills to succeed in college, and his experience underscores how

deficiencies in Wilkes-Barre's funding contributed to his poor outcome. For example, Mr. Horvath did not know how to research or structure a term paper, because his high school lacked a library, and he had never been given a substantial writing assignment. (Tr. at 10046-48.) He did not have the basic skills necessary to use Microsoft Word, PowerPoint, and online platforms because Wilkes-Barre's single computer skills class and shared computers had provided Mr. Horvath with little opportunity to develop digital literacy. (Tr. at 10043-45.) These deficiencies led to Mr. Horvath's decision to withdraw from college twice. (Tr. at 10052, 10058.) Similarly, at the time of his deposition, S.A. planned to attend a trade school to be a chef after graduation, but felt he was not adequately prepared for the reading and math requirements at college. (S.A. Dep. at 15, 72-73; Armstrong Responses and Objections to President Pro Tempore's First Set of Request for Admissions (July 7, 2020), Request. No. 3.)

*280 2281. Several superintendents testified that a diploma from their district did not signify that a student was college or career ready and that significant numbers of their students are not, in fact, graduating from high school college or career ready. Dr. Hite explained, for example, that for those SDP graduates who enroll at the Community College of Philadelphia, about 60% are required to take remedial coursework in writing, literature, ELA, or math. (Tr. at 7896; *see also* Tr. at 461, 2837-38, 3524-26, 5184-85, 6889-90, 10865-66.)

2282. The evidence demonstrates that Petitioner Districts, SDP, and other low-wealth districts lack the funding and/or resources to help close these gaps, as they suffer from adequacy and equity shortfalls. Although Dr. Kelly calculated adequacy and equity shortfalls for each district in the Commonwealth based upon the Costing Out Study, the Court finds there is evidence of a shortfall but declines to accept the specific amounts calculated by Dr. Kelly.

2283. Moreover, when adjusted for inflation, increases in BEF since 2014-15 have been modest. However, in real or nominal dollars, BEF to Petitioner Districts and SDP has increased somewhat since the enactment of the Fair Funding Formula. (PX-04901, Columns M-O.) When compared to districts' total budgets, the BEF increases are modest. For example, Lancaster's total revenues for the 2019-20 school year were \$188.8 million. (LR-05018.) The total increase in real dollars it received in BEF in the 5 years from 2014-15 to 2019-20

William Penn School District; Panther Valley School..., Not Reported in Atl....

was approximately \$3.5 million, or an increase of less than \$700,000 per year, (PX-04901, Row 5, Column L), which is less than 1/2 of 1 percent of its budget. Moreover, the average increase in real dollars Lancaster received in BEF in the 7 years from 2014-15 to 2021-22, which includes the Level Up Supplement, was even less: \$3.4 million, or less than \$500,000 per year. (PX-04901, Row 5, Column M.)

2284. The state funding increases also do not take into account the increases in mandated costs. For Petitioner Districts and SDP, growth in mandated costs have nearly outstripped every dollar in increases from the Fair Funding Formula. This is true when figures are not adjusted for inflation, as the table below illustrates for Wilkes-Barre:

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(PX-04891; *see also* PX-04887 (Shenandoah Valley), PX-04895 (William Penn), PX-04882 (Panther Valley), PX-04832 (Lancaster), PX-04825 (Greater Johnstown) (showing slight increase), PX-04878 (SDP), PX-04838 (Otto-Eldred).)

2285. And this is true when revenues and expenditures are adjusted for inflation:

Real Unreimbursed Special Education Cost	BEF Growth	-	Real Pension and Special Education Cost Growth
Greater Johnstown SD	\$868,863.77		
Lancaster SD	-\$5,697,801.00		
Wilkes-Barre Area SD		-	
\$2,123,644.85			
Panther Valley SD			
-\$583,963.34			
William Penn SD		-	
\$5,325,645.91			
Shenandoah Valley SD			
-\$75,712.42			
Philadelphia City SD			
-\$41,270,479.53			

(PX-04904, Column N.)

2286. School leaders repeatedly testified that as a general matter, their lack of resources has not been solved by the Fair Funding Formula. The Fair Funding Formula did not solve PARSS members' concerns related to school funding, according to Mr. Splain, because "the formula provided the blueprint for distributing it more equitably, but it never dealt with what was adequate for our students to meet the needs that they have." (Tr. at 6235.)

With these findings of fact established, the Court turns to the complex legal issues raised by the parties.

III. WHETHER PETITIONERS HAVE FAILED TO JOIN INDISPENSIBLE PARTIES

*281 Because it is a jurisdictional issue, the Court begins with President Pro Tempore's argument that Petitioners have failed to join as parties to this matter hundreds of non-party school districts and other educational institutions, such as charter schools and IUs, which rely on the Commonwealth's public school funding system. President Pro Tempore contends that these entities are indispensable parties because the injunctive relief Petitioners seek will reconfigure funding of the Commonwealth's system of public education and have a material impact on the interests of those entities. Asserting that failure to join indispensable parties is a jurisdictional defect, President Pro Tempore asks the Court to enter judgment in favor of Respondents.

"A party is indispensable when his or her rights are so connected with the claims of the litigants that no decree can be made without impairing those rights." *Sprague v. Casey*, 550 A.2d 184, 189 (Pa. 1988). "[U]nless all indispensable parties are made parties to an action, a court is powerless to grant relief [since] ... the absence of such a party goes absolutely to the court's jurisdiction." *Id.* (citations omitted). *See also* Rule 1032(b) of the Pennsylvania Rules of Civil Procedure, Pa.R.Civ.P. 1032(b).⁷⁴ Similarly, Section 7540(a) of the Declaratory Judgments Act states, "[w]hen declaratory relief is sought, all persons shall be made parties who have or claim any interest which would be affected by the declaration, and no declaration shall prejudice the rights of persons not parties to the proceeding." 42 Pa.C.S. § 7540(a). Our Supreme Court has stated that the determination of whether a party is indispensable involves at least the following considerations:

William Penn School District; Panther Valley School..., Not Reported in Atl....

1. Do absent parties have a right or interest related to the claim?
2. If so, what is the nature of that right or interest?
3. Is that right or interest essential to the merits of the issue?
4. Can justice be afforded without violating the due process rights of absent parties?

Mechanicsburg Area Sch. Dist. v. Kline, 431 A.2d 953, 956 (Pa. 1981). The consideration of these factors can be “rephrased as a balancing of the interests of the plaintiff, the defendant, the absent party, and the efficient administration of justice.” *CRY, Inc. v. Mill Serv., Inc.*, 640 A.2d 372, 377 (Pa. 1994). In conducting the analysis, a court must consider “the nature of the claim and the relief sought.” *Id.* at 376.

With these principles in mind, the Court considers the factors identified by the Supreme Court as important in determining whether an absent party is indispensable. First, it is indisputable that every non-party school district and educational entity has an interest in this matter. Arguably, every student, parent, and resident does. This is a landmark case with potential far-reaching effects. However, the nature of the non-parties’ interests, the second consideration, is aligned with Petitioners’ interests. They are all part of the system of public education at issue and share an interest in an adequately funded education. The nature of the non-parties’ interests is not grounded in receipt of a fixed amount of educational funding; rather, it is based on provision and maintenance of a “thorough and efficient system of public education,” as required by the Constitution, which is the very nature of Petitioners’ claim. Next the Court considers whether the right or interest is essential to the merits. *Kline*, 431 A.2d at 957. “The concept of essentiality” has been described as “rights [being] so connected with the claims of the litigants that no decree can be made between them without impairing such rights.” *Id.* Given the shared interest, the Court cannot discern how the non-parties’ interest is essential to this matter as their interests are already represented and will not be impaired by any relief granted. It is also noteworthy that over the course of nearly a decade of litigation, none of these non-party school districts or educational entities sought to intervene to assert a different interest.

*282 Finally, the Court considers whether justice can be afforded in this case without violating the due process rights of the absent parties. For this analysis, the Court considers “the nature of the claim and the relief sought.” *CRY, Inc.*, 640 A.2d at 376. Petitioners’ claims are for alleged violations of constitutional rights, namely under the Education and Equal Protection Clauses, and they seek declaratory and injunctive relief. The relief sought is an order directing the General Assembly, in part, to “allocate sufficient funding to provide a high-quality education to **every student**” and, with the assistance of Executive Respondents, implement a new public school funding system. (Petitioners’ Proposed Conclusions of Law (COL) ¶ 86(e) (emphasis added).) In addition, the relief Petitioners seek is prospective only, and, if granted, will in no way affect the funding already allocated to any non-parties. Assuming Petitioners prevail, any plan devised by Respondents at the Court’s direction will have to provide **all** students in **every** district throughout Pennsylvania, not just Petitioners, with an adequately funded education, *i.e.*, a “thorough and efficient” one, and the absent parties will have an opportunity to participate in that process. In sum, after balancing the interests of Petitioners, Respondents, and the absent parties, along with the interest in the efficient administration of justice, *CRY, Inc.*, 640 A.2d at 377, the Court concludes the other school districts and educational entities are not indispensable.

The cases cited by the parties in their post-trial briefs support the Court’s conclusion. For example, in *Oas v. Commonwealth*, 301 A.2d 93 (Pa. Cmwlth. 1973), which involved a challenge to the constitutionality of financing public school education through real estate property taxes, the plaintiff taxpayers alleged, *inter alia*, that the school districts of Philadelphia and Pittsburgh received special grants from the Commonwealth through unconstitutional special legislation. See PA. CONST. art. III, § 32, cl. 1.⁷⁵ The Commonwealth defendants preliminarily objected to the plaintiffs’ failure to join necessary parties, *i.e.*, the Philadelphia and Pittsburgh school districts. This Court sustained the objection, holding that because the two districts would be directly and immediately affected by an order declaring their grants illegal, “their legal presence as parties to the proceeding is indispensable, without which this Court will not proceed.” *Oas*, 301 A.2d at 96.

William Penn School District; Panther Valley School..., Not Reported in Atl....

By contrast, in *Kline*, 431 A.2d 953, the Mechanicsburg Area School District filed a complaint in equity alleging that state officials had erred in the computation of the district's subsidy for the 1977-78 school year under now-repealed provisions of The Public School Code of 1949.⁷⁶ The district sought an order enjoining the officials from paying the final installment of school subsidies for the 1977-78 school year and compelling a recalculation of the district's subsidy. This Court dismissed the complaint without prejudice, holding that all other school districts in Pennsylvania were indispensable parties. Our Supreme Court reversed. In doing so, the Supreme Court observed that the right of the absent districts was the same as the appellant-district, specifically, a statutory right "to a correct and accurate determination of the amount of subsidy granted them." *Id.* at 956. The Supreme Court explained the right "is not one of entitlement to a determined portion of the total subsidy, but rather to a sum to be determined by correct computations ... with the state school subsidy formula." *Id.* Next, the Supreme Court determined the nature of the right was "to receive the benefit of the use of correct process by the state officials[.]" again reiterating "[i]t is not a vested right to receive a fixed or determined sum of money." *Id.* at 957. Furthermore, the Supreme Court held the absent districts' interests were not essential to deciding the merits of the correct computation of the district's subsidy. *Id.* The Supreme Court rejected the argument that recalculation of the district's subsidy would have a "ripple effect" on the subsidies calculated and paid to all school districts, without providing them an opportunity to protect their rights. *Id.* at 958. The Supreme Court concluded there was no implied due process infringement because there was no averment that the statutory ceiling on school subsidies had been reached, and because, even if it had, "[t]he other school districts are not entitled to benefit from any error that may have been made in the calculation." *Id.*

*283 The instant case is readily distinguishable from *Oas*, where the rights of the Philadelphia and Pittsburgh school districts would be prejudiced by the invalidation of grants they had already received, making their presence as parties indispensable. The Court agrees with Petitioners that this case is analogous to *Kline*. President Pro Tempore suggests that a ruling in Petitioners' favor will "alter the statutory regime and the manner in which school funding is distributed," thereby having a ripple effect on the vested rights and interests of non-party educational entities. (President Pro Tempore's Brief

(Br.) at 120.) However, there is nothing in Petitioners' prayer for relief that would remove funding from any other entity. There is no threat to the due process rights of any non-party entity. As noted above, the relief requested by Petitioners is prospective only and intended to benefit all students in Pennsylvania.⁷⁷

For all of the above reasons, the Court rejects President Pro Tempore's argument that judgment should be entered in favor of Respondents because Petitioners did not join as parties every school district and educational institution that relies on the Commonwealth's public school funding system.

IV. WHETHER THE WRONG PARTIES WERE SUED

Legislative Respondents also claim that Petitioners erred by suing the wrong parties. Specifically, they claim that Petitioners should have named the General Assembly, instead of President Pro Tempore and Speaker, because, if Petitioners prevail, Legislative Respondents will be unable to implement any order of this Court directing that the General Assembly take action.

Upon review of Legislative Respondents' answers with new matter, it does not appear this issue was raised until the parties' post-trial briefing. Admittedly, Legislative Respondents did raise the failure to join indispensable parties in their respective new matter. (President Pro Tempore's New Matter ¶ 71; Speaker's New Matter ¶ 327.) However, the indispensable party argument appears to be related to Petitioners' failure to join the other school districts or LEAs. For example, President Pro Tempore's new matter specifically lists the other school districts in the same paragraph in which the indispensable party argument was raised. (See President Pro Tempore's New Matter ¶ 71.) Furthermore, in post-trial briefing, President Pro Tempore appears to treat the indispensable party matter involving the other school districts and LEAs separately from the instant issue, which is labeled as "Petitioners Su[ing] the Wrong Parties." (Compare President Pro Tempore's Br. at 110-16, with *id.* at 116-22.) Thus, it is not clear that Legislative Respondents preserved the issue that the General Assembly also should have been a named party, not just Legislative Respondents.

Speaker also raised failure to join a necessary party in his new matter. (Speaker's New Matter ¶ 327.) Necessary parties are distinct from indispensable parties. *Pa. Hum. Rels. Comm'n v.*

William Penn School District; Panther Valley School..., Not Reported in Atl....

Sch. Dist. of Phila., 651 A.2d 177, 184 (Pa. Cmwlth. 1993). As discussed in Part III, *supra*, “a party is indispensable when his or her rights are so connected with the claims of the litigants that no decree can be made without impairing those rights.” *Sprague*, 550 A.2d at 189. In addition, failure to join an indispensable party is jurisdictional and cannot be waived. *Id.*; see also Pa.R.Civ.P. 1032(b). By contrast, “a necessary party is one whose presence, while not indispensable, is essential if the court is to resolve completely a controversy and to render complete relief.” *Pa. Hum. Rels. Comm’n*, 651 A.2d at 184. Nonjoinder of a necessary party must be raised in preliminary objections, an answer, or a reply or will be considered waived. Pa.R.Civ.P. 1032(a).

*284 Even if the issue of not naming the entire General Assembly was properly preserved by Legislative Respondents’ indispensable party argument, or as a necessary party as Speaker averred, the Court is not persuaded the General Assembly is an indispensable or necessary party for a variety of reasons. First and foremost, both President Pro Tempore and Speaker were named in their official capacity as President Pro Tempore of the Senate and Speaker of the House of Representatives, respectively. When a party’s designee is participating in litigation, the courts have concluded joinder may not be needed. *City of Philadelphia v. Commonwealth*, 838 A.2d 566, 582 (Pa. 2003). This is because “the interests of the two are identical, and thus, the participation of both would result in duplicative filings.” *Id.* In *City of Philadelphia*, the Supreme Court recognized that the General Assembly collectively may have “a general interest in defending the procedural regularity of the bills that it approves,” but concluded that the participation of the presiding officers and minority leaders of each chamber was sufficient as “these officials are capable of representing the interests of the Legislature as a whole.” *Id.* at 584. See also *Stilp v. Commonwealth*, 910 A.2d 775, 785-86 (Pa. Cmwlth. 2006) (*Stilp I*) (holding same). In addition to President Pro Tempore and Speaker, Bryan D. Cutler, who was Speaker at the time of trial, recently intervened in his current official capacity as Leader of the Republican Caucus of the House of Representatives, thereby extending the reach of the interests represented. Moreover, it is apparent that Legislative Respondents thought they were serving in a representative capacity for the General Assembly. For example, Speaker, in his new matter, asserts numerous defenses on behalf of the entire General Assembly. (See, e.g., Speaker’s New Matter ¶¶ 328 (“The Petition fails to

identify any injuries caused by the General Assembly.”); 329 (“The General Assembly has fulfilled its constitutional obligations under the Education Clause by enacting a funding system that provides for the maintenance and support of a thorough and efficient system of public education.”); 330 (“The determination of what constitutes a ‘thorough and efficient system of public education’ is a policy question to be determined by Pennsylvania’s General Assembly and educational administrators.”); 334 (“The General Assembly has fulfilled its duties under the Education Clause by establishing a mechanism for funding public schools that has a reasonable relation to providing for the maintenance and support of a thorough and efficient system of public education.”); 336 (“Petitioners failed to state a claim under the Equal Protection Clause because the General Assembly has a rational basis for a public education funding system that is based upon a combination of state funds, federal funds and local tax dollars and provides poorer school districts with a higher level of state funds than wealthier school districts.”); and 340 (“Petitioners’ demand for the Court to order the General Assembly to enact specified legislation violates the doctrine of separation of powers.”). (See also President Pro Tempore’s New Matter ¶¶ 2 (“When Petitioners commenced this matter in 2014, the Pennsylvania General Assembly was meeting any obligation that ... the []Education Clause[] placed on it. And the General Assembly continues to meet any such obligation.”); 3 (“When Petitioners commenced this matter in 2014, the Pennsylvania General Assembly was not violating ... the []Equal Protection Clause[] . And the General Assembly continues not to be in violation of the Equal Protection Clause.”); 62 (“The General Assembly fulfilled, and is fulfilling, its duty under the Education Clause of the Pennsylvania Constitution and did not violate, and is not violating, the Equal Protection Clause of the Pennsylvania Constitution.”); 65 (“Neither Respondent nor the General Assembly caused any of the Petitioners to sustain a legally cognizable injury.”); 66 (“Neither Respondent nor the General Assembly caused any Student Petitioner to be deprived of a constitutionally-required educational opportunity.”).) This conclusion is also consistent with how other courts have addressed the issue of naming only certain legislators and not the whole legislature in a school funding challenge. In *Rose v. The Council for Better Education, Inc.*, 790 S.W.2d 186 (Ky. 1989), the Supreme Court of Kentucky rejected the same argument Legislative Respondents make here, explaining:

While it is certainly true that the named appellants[, the president *pro tempore* of the Kentucky Senate and speaker of the Kentucky House of Representatives,] in the instant case cannot, by themselves, enact any legislation, they can defend the constitutionality of an act or acts. They have done so in this case. Furthermore, the trial court did not issue a writ of mandamus and appellants were not ordered to enact *specific legislation*, but to “proceed as rapidly as possible to establish an efficient system of elementary and secondary public schools within the guidelines laid down. ...”

Id. at 204 (emphasis in original).

Upon review of the complaint, the court in *Rose* found it was clear that the individual legislators were named in a representative capacity and were defending it on behalf of the Kentucky General Assembly. *Id.* Furthermore, the Supreme Court of Kentucky was “persuaded by authority from other jurisdictions that further obviates the need for serving all members of a legislative body.” *Id.* (citing, *inter alia*, *Seattle Sch. Dist. No. 1 of King Cnty. v. State*, 585 P.2d 71 (Wash. 1978) (naming President of Washington Senate and Speaker of Washington House), and *Barkley v. O’Neill*, 624 F. Supp. 664 (S.D. Ind. 1985) (Speaker of United States House of Representatives named as defendant in case against entire House)). The court in *Rose* concluded that:

[T]he case at bar attacks the constitutionality of an act or series of acts of a legislative body. This case of major statewide importance has been tried and practiced vigorously by all parties and was decided on the merits by the trial court. We will not now initiate useless circuitry of action by requiring the cumbersome process of serving all members of the General Assembly. ... We believe it is only common sense and practical to hold that service on both the President *Pro Tempore* of the Senate and the Speaker of the House of Representatives, named in their respective capacities is

sufficient to acquire jurisdiction over the General Assembly in this action.

Id. at 204-05 (internal citation omitted).

As this matter has proceeded for almost a decade, culminating in a four-month trial, throughout which legislative leaders purported to represent the interests of the General Assembly, Legislative Respondents cannot be permitted to raise the argument that Petitioners have named the wrong parties at this late stage of the proceedings.

V. PENNSYLVANIA'S EDUCATION CLAUSE

The Court begins with a brief overview of the Education Clause in the Pennsylvania Constitution.⁷⁸ An understanding of this history is useful in both determining the meaning of the Education Clause, and whether education is a fundamental right for equal protection purposes.

*285 The 1776 Constitution provided “[a] school or schools shall be established in each county by the legislature, for the convenient instruction of youth, with such salaries to the masters paid by the public, as may enable them to instruct youth at low prices.” PA. CONST. OF 1776, § 44. In 1790, it was replaced with the following: “The legislature shall, as soon as conveniently may be, provide, by law, for the establishment of schools throughout the State, in such manner that the poor may be taught gratis.” PA. CONST. OF 1790, art. VII, § 1.

No changes were made to the Education Clause again until 1874. [Article X, section 1 of the 1874 Pennsylvania Constitution](#) provided: “The General Assembly shall provide for the maintenance and support of a thorough and efficient system of public schools, wherein all the children of this Commonwealth above the age of six years may be educated, and shall appropriate at least one million dollars each year for that purpose.” PA. CONST. OF 1874, art. X, § 1. It was nearly a century later before the Education Clause was changed to provide what it does now: “The General Assembly shall provide for the maintenance and support of a thorough and efficient system of public education to serve the needs of the Commonwealth.” PA. CONST. art. III, § 14.

William Penn School District; Panther Valley School..., Not Reported in Atl....

Legislative Respondents' illustration of the most recent changes to the Education Clause proves quite helpful, particularly in light of the parties' arguments:

The General Assembly shall provide for the maintenance and support of a thorough and efficient system of public education schools, ~~wherein all the children of this Commonwealth above the age of six years may be educated, and shall appropriate at least one million dollars each year for that purpose~~ to serve the needs of the Commonwealth.”

PA. CONST. OF 1874, art. X, § 1; PA. CONST. art. III, § 14 (additions highlighted, deletions struck through in red).

With this backdrop in mind, the Court turns to Petitioners' Education Clause claim. This first claim requires a two-step analysis, beginning with defining what a “thorough and efficient system of public education to serve the needs of the Commonwealth” means followed by an analysis of whether the current system is satisfying that standard.

VI. DEFINING “A THOROUGH AND EFFICIENT SYSTEM OF PUBLIC EDUCATION TO SERVE THE NEEDS OF THE COMMONWEALTH”

A. Parties' Arguments

1. Petitioners

Petitioners argue the Education Clause not only requires the General Assembly to provide all students with a system of public education but also a “high-quality, contemporary” one that prepares students for college, careers, and civic participation. (Petitioners' Br. at 7-8.) According to Petitioners, this interpretation is supported by the plain language of the Education Clause, as well as the history behind it.

Petitioners maintain that the terms “thorough” and “efficient” in the Education Clause meant “complete” and “effective,”

respectively, at the time voters adopted the 1874 Constitution, which, in their view, is the relevant time period for construing that language. (*Id.* at 7-9.) From a review of the debates of the 1873 Convention, Petitioners assert it is apparent that the delegates also gave the terms similar meaning. Petitioners cite numerous excerpts of the debates in which delegates spoke of the importance of a high-quality education that could change with the times and help ensure self-sufficiency and democratic participation. (*Id.* at 15-17.) Although the delegates rejected using the term “uniform” to describe the system of public education, Petitioners argue this did not mean that inequality should be permitted. Rather, Petitioners assert the 1874 Education Clause expanded the system's reach from poor children to all children, and eliminating the word “uniform” from proposals was a method of providing some flexibility in how that system delivered education. (*Id.* at 17-18.) Petitioners also point out that, at the time of the 1873 Convention, there was great distrust in the legislature. (*Id.* at 19.) As a result, Petitioners argue, discretion was removed from the General Assembly in two ways. First, the deferential term “as soon as conveniently may be” was replaced with the word “shall,” a directive. (*Id.* at 20.) Second, the delegates set a quantitative floor requiring at least \$1 million to be allotted to funding the public system of education, a 40% increase. (*Id.*)

*286 Although the Education Clause was “modernize[d]” in 1967, (*id.* at 11), such as by removing the antiquated \$1 million benchmark, Petitioners observe the “thorough and efficient” language remained unchanged and the addition of the phrase “to serve the needs of the Commonwealth” did not alter the purpose of the Education Clause, (*id.* at 21). Rather, Petitioners posit, “the intent behind the addition of the phrase ... was simply to make it clear that this system would benefit the overall Commonwealth, in addition to just the children.” (*Id.* at 21 (quotation omitted).) To the extent Legislative Respondents assert the addition of the phrase “to serve the needs of the Commonwealth” instills in the General Assembly the exclusive right to determine what those needs are, Petitioners respond that Legislative Respondents are “attempt[ing] to relitigate the Supreme Court's justiciability decision in this case” and skirt “basic constitutional principles of checks and balances.” (*Id.* at 29-30.)

2. Legislative Respondents⁷⁹

Legislative Respondents agree with Petitioners that the plain language of the Education Clause controls and that the Education Clause should be interpreted as understood by the people at the time of adoption. (President Pro Tempore's Br. at 11; Speaker's Br. at 30-31.) Unlike Petitioners, however, Legislative Respondents assert the relevant time period is 1967, when the current version of the Education Clause was adopted, not 1874. (President Pro Tempore's Br. at 12, 27-28; Speaker's Br. at 30-31.) Speaker argues the term "thorough" in 1967 "still carried with it the meaning of completeness," as Petitioners contend, but "it certainly did not connote perfection." (Speaker's Br. at 31.) Speaker also posits that "efficient," in 1967, "was understood to include accomplishing something through the most effective and least wasteful means." (*Id.* at 32.)

President Pro Tempore argues the Education Clause in the 1874 Constitution was rendered inoperative upon the subsequent adoption of the current Education Clause. (President Pro Tempore's Br. at 28.) Legislative Respondents argue that, even if the 1874 version was relevant, Petitioners selectively highlight excerpts of individual delegates' statements, which support their position or are taken out of context, but ignore less favorable statements or information, such as rejection of a uniformity requirement and delegates' concerns about encroaching on the General Assembly's authority. (*Id.* at 29; Speaker's Br. at 27-28, 43.)

President Pro Tempore also disputes the opinion of Professor Black, Petitioners' expert, that the changes in the language of the Education Clause had no effect on its meaning, noting that "[w]ell-established precedent confirms that when the language of a constitutional provision changes, its meaning changes as well." (President Pro Tempore's Br. at 13-14 (citation omitted).) Equally well settled, in President Pro Tempore's view, is that removal of language from a constitutional provision "signals that, although something was once enshrined in the provision, it has been taken out," and that added "language should be given independent meaning, force, and effect and cannot be treated as mere surplusage." (*Id.* at 14 (citation omitted).) Thus, President Pro Tempore argues the "removal of the phrase 'wherein all the children of this Commonwealth above the age of

six years may be educated' signals that ... Pennsylvania's system of public education is not only for children."⁸⁰ (*Id.* at 15.) Moreover, the addition of the phrase "to serve the needs of the Commonwealth" connotes that, as the branch of government that determines the Commonwealth's needs, the General Assembly was afforded "significant deference." (*Id.*) President Pro Tempore contends the legislative branch is "uniquely positioned to determine the needs of the Commonwealth ... because it is the only branch of Pennsylvania's government that is made up entirely of the people's elected representatives." (*Id.* at 16.) Finally, President Pro Tempore argues that the removal of the \$1 million funding floor, which some delegates opposed in 1873 as removing the General Assembly's discretion, signaled the voters' return of that discretion to the General Assembly. (*Id.* at 16-17.)

*287 When the language of the current Education Clause is considered, along with the historical context in which it was adopted, Legislative Respondents devise a different standard than Petitioners under which they allege Petitioners' Education Clause claim should be evaluated. That standard, according to Legislative Respondents, is whether the General Assembly created a system of public education that is providing students with a "basic standard public school education." (*Id.* at 42; *see also* Speaker's Br. at 27 ("standard basic public school education").)

Legislative Respondents argue that while the General Assembly must provide students with a basic standard public school education, how that is accomplished is left to the discretion of the General Assembly. (*Id.* at 45; Speaker's Br. at 29.) President Pro Tempore explains this is necessary because the General Assembly, not courts, should be making policy choices regarding the needs of the Commonwealth and what best serves those needs, and courts should refrain from acting as "super school boards." (President Pro Tempore's Br. at 44-45, 50-51.)

This standard is also consistent with case law from Pennsylvania and other jurisdictions, in Legislative Respondents' view. For instance, Legislative Respondents argue that the Court held the petitioner in *PARSS* "had to show that the present system of funding education produced the result that a substantial number of districts did not have funds to provide a basic or minimal education for

William Penn School District; Panther Valley School..., Not Reported in Atl....

their students.” (President Pro Tempore’s Br. at 46 (quoting *PARSS*, slip op. at 129); Speaker’s Br. at 33 (quoting same).) See also *Connecticut Coal. for Justice in Educ. Funding, Inc. v. Rell*, 176 A.3d 28, 55-56 (Conn. 2018) (holding Connecticut’s education clause required the state to provide “minimally adequate” physical facilities, instrumentalities of learning, and teaching of basic curricula, and “sufficient personnel adequately trained to teach those subject areas”) (quoting *Campaign for Fiscal Equity, Inc. v. State of New York*, 655 N.E.2d 661 (N.Y. 1995)); *Morath v. The Texas Taxpayer & Student Fairness Coal.*, 490 S.W.3d 826, 855 (Tex. 2016) (holding Texas’s education clause “demands not the best education, but only an educational system that is adequate to provide a general diffusion of knowledge”); *Skeen v. Minnesota*, 505 N.W.2d 299, 312 (Minn. 1993) (holding Minnesota’s education clause required a system of education that met “the basic education needs of all districts”); *Hornbeck v. Somerset Cnty. Bd. of Educ.*, 458 A.2d 758, 776 (Md. 1983) (holding Maryland’s education clause required a statewide system of education that provides “a basic or adequate education to the State’s children”); and *McDaniel v. Thomas*, 285 S.E.2d 156, 165 (Ga. 1981) (holding Georgia’s education clause required “basic educational opportunities”). Furthermore, Legislative Respondents argue that there is no requirement that the system be uniform, so long as it is providing a basic standard public education. (Speaker’s Br. at 44-45.)

If the Court were to accept Petitioners’ proposed standard that the General Assembly must provide a “high-quality, contemporary education,” President Pro Tempore asserts, the Court “would quickly become mired in policy questions, which are outside of its purview.” (President Pro Tempore’s Br. at 52.) President Pro Tempore also claims that Petitioners’ proposed standard raises more questions than answers. (*Id.* at 53-55.) Finally, Legislative Respondents argue that the education of children is influenced by social, economic, family, and personal factors that are outside the control of the General Assembly and for which it cannot be held responsible to eliminate or remedy. (*Id.* at 50-51; Speaker’s Br. at 38-39.)

3. Executive Respondents

*288 In interpreting the Education Clause, Executive Respondents likewise acknowledge the plain language of the

Constitution controls, and it is the meaning as understood at the time of adoption that governs. (Executive Respondents’ Br. at 5.) If there is ambiguity, Executive Respondents assert, the Court can look at other factors, such as the occasion and necessity for the provision, the circumstances under which the provision was ratified, the mischief to be remedied, the object to be obtained, and contemporaneous legislative history, just as the Court would do in construing statutes. (*Id.*) They also argue that the Court can examine relevant decisional law and policy considerations, as well as how other jurisdictions have interpreted similar provisions. (*Id.* at 5-6.)

When this is done, Executive Respondents argue “that a thorough and efficient system [of public education] is one which provides a meaningful opportunity for substantially all children to achieve academic, social[,] and civic success.” (July 27, 2022 Tr. at 98.)⁸¹ Notably, Executive Respondents explain that their “formulation of the standard does not necessarily reject a definition that has been proposed by [] [L]egislative [R]espondents, provided that the basic minimum or the standard basic is defined pursuant to the proposed standard of a meaningful opportunity for substantially all children to achieve academic, civic[,] and social success.” (*Id.* at 104-05.)

4. State Board

The State Board proffers no standard or interpretation of the Education Clause and indicates it takes no position on the Education Clause claim. (State Bd.’s Br. at 23.)

5. Petitioners’ Reply

In their reply brief, Petitioners rebuff Legislative Respondents’ argument that the only relevant time period for interpreting the Education Clause is 1967, when the most recent version of the Education Clause was adopted. Petitioners reiterate that the “thorough and efficient” phrase first appeared in the 1874 Constitution, and under rules of construction, words that remain unchanged are given the same meaning as when they first appeared in a statute. (Petitioners’ Reply Br. at 3-4.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

Petitioners assert that Legislative Respondents' interpretation is not supported by the historical record. As to Legislative Respondents' argument that the omission of references to children in the 1967 Constitution indicated a shift in focus of the Education Clause, Petitioners argue the change was just removing the obvious, similar to the elimination of other provisions in the Education Clause.⁸² (*Id.* at 7-8.) According to Petitioners, neither the legislative history nor newspapers reporting on the amendments considered the 1967 amendments to the Constitution to be major. (*Id.* at 8-11.) Similarly, Petitioners assert there is no basis for the Legislative Respondents' argument that the General Assembly was granted more discretion with the addition of the phrase "to serve the needs of the Commonwealth" to the 1967 Constitution. (*Id.* at 12-16.)

Petitioners dispute that their proffered standard for a contemporary, high-quality education is unreasonable, unmanageable, or unfounded in the Constitution and its history, or counter to how courts of other jurisdictions have interpreted similar education clauses. (*Id.* at 17-21.) Instead, Petitioners assert that Legislative Respondents are attempting to relitigate whether this matter is justiciable without violating separation of powers, something the Pennsylvania Supreme Court and courts in other states have rejected. (*Id.* at 19-21.)

*289 In response to Legislative Respondents' proffered standard for a "standard basic" education, Petitioners argue there is no basis for such an interpretation. (*Id.* at 22-23.) Legislative Respondents' reliance on *PARSS* for support is misplaced, per Petitioners, because, although the Court in *PARSS* conducted an exhaustive review of the history of the phrase "thorough and efficient," the Court simply adopted that standard from *Danson v. Casey*, 399 A.2d 360 (Pa. 1979), and *Marrero v. Commonwealth*, 739 A.2d 110 (Pa. 1999) (*Marrero II*), which the Supreme Court called into doubt in *William Penn II*. (*Id.* at 24-25.) "Legislative Respondents' efforts to advance a 'basic standard' or 'minimum basic' conception of education are simply another attempt to demand that this Court surrender to the power of the General Assembly." (Petitioners' Reply Br. at 26.) Petitioners continue: "Implicit in this tautology is Respondents' view that their legislative power in the field of education is so plenary that it overrides the authority of every other elected official, supersedes Supreme Court precedent, and can even redefine the words of the Constitution itself." (*Id.*)

6. Amici⁸³

Pennsylvania's Attorney General⁸⁴ (Attorney General) urges the Court, in an amicus brief, to interpret the Education Clause as requiring "the General Assembly to provide continuing support for a comprehensive, effective, and contemporary system of education that prepares all Pennsylvania children for career and civic life." (Attorney General's Amicus Br. at 3.) Attorney General argues the rules of constitutional construction support this interpretation, (*id.* at 3-12), as does the legislative and contemporaneous history of the Education Clause, (*id.* at 12-28), and it is consistent with how other jurisdictions have interpreted their constitutions, (*id.* at 32-37). Attorney General further posits that the Education Clause creates a constitutional mandate on the General Assembly that cannot be delegated to local officials. (*Id.* at 29.) In addition, Attorney General asserts a "thorough and efficient" education was intended to be a rigorous one." (*Id.*) Attorney General contends that it must also be ever evolving. (*Id.* at 31.) Attorney General also claims educating all students is necessary "to allow them to be full participants in our democracy." (*Id.* at 31-32.) Lastly, Attorney General asks the Court to reject Legislative Respondents' arguments that they are entitled to deference as baseless, noting other public officials and government bodies, including the Governor, Secretary, and State Board also play key roles in education. (*Id.* at 37-40.)

B. Discussion

The "ultimate touchstone" in interpreting a constitutional provision "is the actual language of the Constitution itself." *Robinson Township, Washington County v. Commonwealth*, 83 A.3d 901, 943 (Pa. 2013). The language of the Constitution controls and "must be interpreted in its popular sense, as understood by the people when they voted on its adoption." *Id.* (citation omitted). Furthermore, the court should "avoid reading the provisions of the Constitution in any 'strained or technical manner.'" *Id.* (quoting *Jubelirer v. Rendell*, 953 A.2d 514, 528 (Pa. 2008)). Rather, the court "must favor a natural reading which avoids contradictions and difficulties in implementation, which completely conforms to the intent of the framers and which reflects the views of the ratifying

William Penn School District; Panther Valley School..., Not Reported in Atl....

voter.” *Commonwealth ex rel. Paulinski v. Isaac*, 397 A.2d 760, 766 (Pa. 1979).

*290 If a constitutional provision is “clear and explicit,” a court “will not delimit the meaning of the words used by reference to a supposed intent.” *Robinson Township*, 83 A.3d at 945. On the other hand, if an “ambiguity, conflict, or inconsistency becomes apparent” in the constitutional provision’s plain language, the court should follow the same rules of interpretation utilized when interpreting statutes. *Id.* That is, the court “may resort to considerations other than the plain language to discern intent, including ... the occasion and necessity for the provision; the circumstances under which the amendment was ratified; the mischief to be remedied; the object to be attained; and the contemporaneous legislative history.” *Id.* (citing Sections 1921, 1922 of the Statutory Construction Act of 1972 (Statutory Construction Act), 1 Pa. C.S. §§ 1921, 1922).

In *Commonwealth v. Edmunds*, the Pennsylvania Supreme Court set forth four factors that a court should consider in analyzing the Pennsylvania Constitution: “1) the text of the Pennsylvania constitutional provision; 2) history of the provision, including Pennsylvania case-law; 3) related case-law from other states; [and] 4) policy considerations, including unique issues of state and local concern, and applicability within modern Pennsylvania jurisprudence.” 586 A.2d 887, 985 (Pa. 1991). However, the Pennsylvania Supreme Court later clarified that an *Edmunds* analysis was not necessary where there is no federal counterpart to the constitutional provision, as is the case here. *Jubelirer*, 953 A.2d at 524. Notwithstanding that the *Edmunds* factors do not control, courts may still consider them to the extent they are helpful. *Id.* at 525 n.12; see also *Robinson Township*, 83 A.3d at 944.

With these principles in mind, the Court now considers what the Education Clause requires. As the Supreme Court previously stated, “creating a practicable standard by which courts might **define** and measure the thoroughness and efficiency” is a “formidable challenge.” *William Penn II*, 170 A.3d at 450 (emphasis added).

1. Plain Language

The Education Clause currently states: “The General Assembly shall provide for the maintenance and support of a thorough and efficient system of public education to serve the needs of the Commonwealth.” PA. CONST. art. III, § 14. In determining what the Education Clause requires, the Court begins with the understanding that it is the General Assembly that is tasked under the Constitution with providing for the maintenance and support of a system of public education. The parties do not dispute that, but they do offer differing interpretations of what “thorough and efficient” means and dispute the importance of the phrase “to serve the needs of the Commonwealth.” The Court addresses each of these phrases in turn.

Before the Court can determine what the phrase “thorough and efficient” means, the Court must first determine at what point in time the meaning of the phrase should be evaluated. It is well settled that the Constitution “must be interpreted in its popular sense, as understood by the people when they voted on its adoption.” *Robinson Township*, 83 A.3d at 943 (citation omitted). Petitioners assert that the relevant time period is **1874**, when the phrase was **first** adopted in the Education Clause. Legislative Respondents, on the other hand, argue that the relevant time period is **1967**, when the **current** version of the Education Clause was adopted, notwithstanding that the same phrase appeared earlier.

In resolving this dispute, the Court finds guidance in the Statutory Construction Act. Section 1953 of the Statutory Construction Act provides:

Whenever a section or part of a statute is amended, the amendment shall be construed as merging into the original statute, become a part thereof, and replace the part amended, and the remainder of the original statute and the amendment shall be read together and viewed as one statute passed at one time; but the **portions of the statute which were not altered by the amendment shall be construed as effective from the time of their original enactment**, and the new provisions shall be construed

William Penn School District; Panther Valley School..., Not Reported in Atl....

as effective only from the date when the amendment became effective.

*291 1 Pa. C.S. § 1953 (emphasis added). While the Education Clause was not technically “amended” in 1967 but was replaced with a new Education Clause, the Court is still persuaded that when the same language is used in a subsequent enactment, the meaning of the phrase should be construed in the same manner as when the language first appeared in 1874. When constitutional language remains unchanged despite revision to the Constitution, the courts “must consider the possibility that ... [voters] deliberately re-ratified” the provision. *McLinko v. Dep’t of State*, 279 A.3d 539, 583 (Pa. 2022) (Wecht, J., concurring); see also *id.* at 592 n.20 (“There can be no doubt that, where language is retained, its extant meaning and prior constructions are relevant to its present interpretation.”).⁸⁵ Had a different meaning been intended, different words could have been used. Instead, although voters in 1967 ratified a new Education Clause, it contained the same “thorough and efficient” language as the 1874 Constitution. Thus, it is this time period – 1874 – in which the Court considers that phrase's meaning.

Before ascertaining the meaning of the Education Clause, it is important to note that, although the Education Clause is interpreted as understood by the voters at the time of its adoption, that does not mean what constitutes a “thorough and efficient system of public education to serve the needs of the Commonwealth” should be gauged by what would have satisfied this standard at the time of adoption. The parties do not apparently dispute it should be a contemporary standard that has evolved with the passage of time. See *Danson*, 399 A.2d at 366 (recognizing that “educational philosophy and needs change constantly” and, thus, “the words ‘thorough and efficient’ must not be narrowly construed”); *Abbott by Abbott v. Burke*, 575 A.2d 359, 367 (N.J. 1990) (recognizing that “what a thorough and efficient education consists of is a continually changing concept”).

“In ascertaining the meaning of a word in accordance with its common and approved usage,” the Pennsylvania Supreme Court has determined it is “helpful to consult dictionaries.” *McLinko*, 279 A.3d at 577. Prior to the 1874 Constitution, “thorough” was defined as “[p]erfect; total; complete; entire; finished; full.” *Thorough*,

A DICTIONARY OF THE ENGLISH LANGUAGE 1503 (1873), available at <https://babel.hathitrust.org/cgi/pt?id=hvd.32044086908860&view=1up&seq=5&skin=2021> (last visited Feb. 6, 2023). Another dictionary defined “thorough,” in relevant part, as “complete; full.” *Thorough*, A COMPREHENSIVE DICTIONARY OF THE ENGLISH LANGUAGE 433 (1871), available at <https://babel.hathitrust.org/cgi/pt?id=hvd.hn2qn8&view=1up&seq=6&skin=2021> (last visited Feb. 6, 2023). See also *Thorough*, HIGH SCHOOL DICTIONARY OF THE ENGLISH LANGUAGE 303 (1871), available at <https://babel.hathitrust.org/cgi/pt?id=uva.x004011298&view=1up&seq=7&skin=2021> (last visited Feb. 6, 2023) (defining “thorough,” in relevant part, as “complete”). Thus, the Court finds a “thorough” education is one that is full or complete.⁸⁶

*292 The Court likewise examines dictionaries of the time to determine the meaning of the word “efficient.” “Efficient” was defined in the 1870s as “[a]ctually producing or helping to produce effects; that produces directly a certain effect; causing effects; effective; efficacious; effectual; competent; able; active; operative.” *Efficient*, A DICTIONARY OF THE ENGLISH LANGUAGE 465 (1873), available at <https://babel.hathitrust.org/cgi/pt?id=hvd.32044086908860&view=1up&seq=5&skin=2021> (last visited Feb. 6, 2023). See also *Efficient*, A COMPREHENSIVE DICTIONARY OF THE ENGLISH LANGUAGE 165 (1871), available at <https://babel.hathitrust.org/cgi/pt?id=hvd.hn2qn8&view=1up&seq=125&skin=2021&size=125&q1=complete> (last visited Feb. 6, 2023) (defining “efficient” as “[c]ausing effects; active; operative; effective”). Therefore, the Court finds that an “efficient” system of public education is one that is effective or competent to produce the intended effect.

This definition requires a determination as to the intended effect of the Education Clause. The next part of the Education Clause provides the system of public education is “to serve the needs of the Commonwealth.” PA. CONST. art. III, § 14. Both the plain language of that phrase and the discussion of the history of the Education Clause, *supra*, demonstrate that the purpose of the Education Clause is not only to educate children,⁸⁷ but also to ensure those children have the opportunity to become productive members of society when they become older. By arming children with the knowledge to

William Penn School District; Panther Valley School..., Not Reported in Atl....

succeed not just academically, but also socially and civically, the future of the Commonwealth is secured. In sum, the Education Clause requires the General Assembly to provide a full or complete system of public education that is effective in producing students who, as adults, can participate in society, academically, socially, and civically, which thus serves the needs of the Commonwealth.

At trial, the Court heard considerable testimony of the varying needs of students from virtually every witness, fact or expert, Petitioners' or Respondents'. (*See, e.g.*, FOF ¶¶ 1951 & 1954 (Petitioners' expert Dr. Barnett); 1984 (Petitioners' expert Dr. Noguera); 2142 (Legislative Respondents' expert Mr. Willis); 2157 (President Pro Tempore's expert Dr. Koury); 2206 (Legislative Respondents' expert Dr. Hanushek); 403 (Deputy Secretary Campanini); 412 (former Deputy Secretary Stem); 478 & 486 (Greater Johnstown Superintendent Dr. Arcurio); 1042 (Shenandoah Valley Superintendent Waite); 1160-1161 (Wilkes-Barre Superintendent Dr. Costello).) Moreover, the General Assembly has recognized these differing needs, and the necessity of additional funding, through its provision of such additional funding to those students and school districts that educate students who require additional services. (*See, e.g.*, FOF ¶¶ 313 (funding for early intervention programs for special education); 314 (Ready-To-Learn Block grants); 319 (Pre-K Counts).) This recognition culminated in the Fair Funding Formula, which distributes funds, at least in part, on a weighted basis, taking into consideration certain needs-based factors, such as poverty, ELL students, charter school attendance, and sparsity, (FOF ¶ 364), and in the Level Up Funding, which goes to the 100 lowest wealth districts, (FOF ¶ 368).

*293 Furthermore, it is clear from the history of the Education Clause that the system of public education was intended to reach as many children as possible. Moreover, it is equally apparent that children must be provided a meaningful opportunity to succeed. *See, e.g., Abbott by Abbott v. Burke*, 693 A.2d 417, 443 (N.J. 1997) (“The constitutional guarantee of a thorough and efficient education attaches to every school district, and indeed, to every individual school in the State. Of course, the right to a thorough and efficient education does not ensure that every student will succeed. It must, however, ensure that every child in New Jersey has the opportunity to achieve.”). “Opportunity” “does not mean achievement of guaranteed success,” but instead “connotes

availability and occasion.” *Abbeville Cnty. Sch. Dist. v. State of South Carolina*, 767 S.E.2d 157, 185 (S.C. 2014) (Kittredge, J., dissenting) (quotation omitted). Therefore, the Court concludes that the appropriate measure is whether every student is receiving a **meaningful opportunity** to succeed academically, socially, and civically, which requires that **all** students have access to a comprehensive, effective, and contemporary system of public education.

2. History

The above standard also finds support in the history of the Education Clause, which the Supreme Court has said other jurisdictions have considered in interpreting their respective education clauses and is “the most sensible approach.” *William Penn II*, 170 A.3d at 450. Education is rooted in the Commonwealth's earliest history. (FOF ¶ 33.) While earlier models of schools served select students fortunate enough to attend, the public schools evolved into pauper schools, focusing on the poor, until finally, in line with William Penn's vision, they were intended to educate all children. (*See, e.g.*, FOF ¶¶ 33-39, 44-45.) Thus, while uniformity may have been rejected, (FOF ¶¶ 53-55), equality was not. Moreover, the importance of educating all youth to ensure the future of the Commonwealth was a steadfast belief that survived centuries, ultimately culminating in it being explicitly memorialized in the 1967 Constitution with the addition of the phrase “to serve the needs of the Commonwealth.” (FOF ¶¶ 37, 56-57, 61.)

There was not agreement otherwise as to what a system of public education should require. This is perhaps best illustrated by the debates at the 1873 Convention. (*See generally* FOF ¶¶ 45-55.) On one side were delegates in favor of broad, sweeping requirements, and on the other side were delegates concerned with usurping legislative authority. (*Id.*)

Although a new Education Clause was adopted in 1967, portions of the 1874 Constitution were incorporated without change, most notably the “thorough and efficient” language. (FOF ¶ 66.) The age and appropriations thresholds were removed as obsolete, and it was made explicitly clear that the Commonwealth, not only the children, should benefit from the system. (FOF ¶¶ 60-61.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

What the history illustrates is the changes to the Education Clause in 1967 did not alter the purpose of the Education Clause as adopted in the 1874 Constitution. In addition to continuing to require a “thorough and efficient system of public education,” the new Education Clause made it explicitly clear that such a system was important to the future of the Commonwealth. Moreover, it is apparent that the system was intended to have far reach, serving as many students as possible. Finally, the history demonstrates that the system need not be uniform. Rather, so long as it provides all students with a meaningful opportunity to succeed academically, socially, and civically, by providing them a comprehensive, effective, and contemporary education, the system passes constitutional muster.

3. Other Jurisdictions

Although other jurisdictions’ legislative history may be different than ours, the Court still finds those jurisdictions’ interpretations of similar education clauses persuasive and supportive of the standard set forth above. Other states with “thorough and efficient” language in their respective education clauses have interpreted the phrase similarly to this Court’s interpretation.

*294 The Court finds the interpretation of Wyoming’s Constitution as one of the more persuasive interpretations, as its education clause was adopted contemporaneously with Pennsylvania’s.⁸⁸ [Article 7, section 9 of the Wyoming Constitution](#) provides, in relevant part:

The legislature shall make such further provision by taxation or otherwise, as with the income arising from the general school fund will create and maintain a **thorough and efficient system** of public schools, adequate to the proper instruction of all youth of the state, between the ages of six and twenty-one years, free of charge

[WYO. CONST. art. 7, § 9](#) (emphasis added). Similar to this Court, the Supreme Court of Wyoming interpreted its

constitution consistent with the meaning of the terms at the time of adoption but also in a contemporary fashion. The court explained:

Although the text of the constitutional provision in question must be given the common and ordinary meaning understood by the majority of voters which ratified it, [] we must be mindful our state constitution is, “in a sense, a living thing, designed to meet the need of progressive society, amid all the detail changes to which such society is subject.”

[Campbell Cnty. Sch. Dist. v. State of Wyoming](#), 907 P.2d 1238, 1257 (Wyo. 1995) (quoting [Chicago & Nw. Ry. Co. v. Hall](#), 26 P.2d 1071, 1073 (Wyo. 1933)). As did this Court, the Supreme Court of Wyoming examined dictionaries of the relevant time frame, there 1889, to discern the meaning of the terms “thorough” and “efficient.” The court stated that “thorough” was defined as “fully executed; having no deficiencies; hence, complete in all respects; unqualified; perfect,” and “efficient” as “acting or able to act with due effect; adequate in performance; bringing to bear the requisite knowledge, skill, and industry; capable; competent.” *Id.* at 1258 (quoting THE CENTURY DICTIONARY (1889)). Interestingly, similar to this Court, the Supreme Court of Wyoming saw “little difference” compared with today’s definitions, finding “thorough” now meant “marked by full detail, painstaking,” and “efficient” having been defined more precisely meant “productive without waste.” *Id.* (quoting WEBSTER’S COLLEGIATE DICTIONARY (10th ed. 1994)).

Synthesizing those definitions, the court held that “a thorough and efficient system of public schools adequate to the proper instruction of the state’s youth” is defined as “an organization forming a network for serving the common purpose of public schools which organization is marked by full detail or complete in all respects and productive without waste and is reasonably sufficient for the appropriate or suitable teaching/education/learning of the state’s school age children.” *Id.* at 1258-59. The court likewise considered the legislative history and

*295 conclude[d] the framers intended the education article as a mandate to the state legislature to

William Penn School District; Panther Valley School..., Not Reported in Atl....

provide an education system of a character which provides Wyoming students with a uniform opportunity to become equipped for their future roles as citizens, participants in the political system, and competitors both economically and intellectually.

Id. at 1259.

Maryland also has an analogous provision in its [Constitution, Article VII, section 1](#) of the Maryland Constitution provides: “The General Assembly ... shall by Law establish throughout the State a **thorough and efficient** System of Free Public Schools; and shall provide by taxation, or otherwise, for their maintenance.” [MD. CONST. art. VII, § 1](#) (emphasis added). In a school funding challenge, the Court of Appeals of Maryland held the language was susceptible to more than one meaning so it examined “the history of its enactment ... and its contemporaneous construction by officials charged with administration of the government, including the legislature.” [Hornbeck, 458 A.2d at 770](#). In the Maryland court's recounting of the history of its education clause, the similarities with Pennsylvania's history are striking. Similar to Pennsylvania, the early system of education in Maryland was largely ineffective. *Id.* at 771. In 1867, Maryland adopted an education clause identical to the current version using the “thorough and efficient” language. *Id.* at 772. While its 1864 Constitution required a uniform system, a few years later when it adopted its 1867 Constitution, uniformity was rejected as a matter best left for the legislature. *Id.* at 771-72. The court held that “thorough and efficient” did not require uniformity or for the legislature to provide the same amount of funds to all students; rather it only required a basic education.⁸⁹ *Id.* at 776. The court stated, “education need not be ‘equal’ in the sense of mathematical uniformity, so long as efforts are made, as here, to minimize the impact of undeniable and inevitable demographic and environmental disadvantages on any given student.” *Id.* at 780. It further stated “[s]imply to show that the educational resources available in the poorer school districts are inferior to those in the rich districts does not mean that there is insufficient funding provided by the State's financing system for all students to obtain an adequate education.” *Id.* According to the court, the state had adopted comprehensive

statewide qualitative standards and there was no evidence these “standards were not being met in any school district, or that the standards failed to make provision for an adequate education, or that the [s]tate's school financing scheme did not provide all school districts with the means essential to provide the basic education contemplated by” the Constitution. *Id.*

“Thorough and efficient” language may also be found in South Dakota's [Constitution, Article VIII, section 15](#) of the South Dakota Constitution provides, in relevant part: “The Legislature shall make such provision by general taxation and by authorizing the school corporations to levy such additional taxes as with the income from the permanent school fund shall secure a **thorough and efficient** system of common schools throughout the state. ...” [S.D. CONST. art. VIII, § 15](#) (emphasis added). As this Court and the Supreme Court of Wyoming found when comparing the 19th century definitions of “thorough” and “efficient” with their contemporary definitions, *see supra* n.85; [Campbell Cnty. Sch. Dist., 907 P.2d at 1258](#), the meaning of the terms was unchanged, [Davis v. The State of South Dakota, 804 N.W.2d 618, 624 \(S.D. 2011\)](#). The *Davis* Court explained “thorough” meant “so complete as to leave nothing unaffected or wanting,” and “efficient” meant “[c]apable, competent, [and] able.” *Id.* (quoting WEBSTER'S NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE 2631, 819 (1937)). The court continued:

*296 The constitutional language and intent of the framers guarantee *the children of South Dakota a constitutional right to an education that provides them with the opportunity to prepare for their future roles as citizens, participants in the political system, and competitors both economically and intellectually.* The constitutional mandate does not contemplate a system that fails to educate all children or leaves pockets of inadequate conditions and achievement as a result of insufficient funding. As General Beadle so eloquently stated, “The genius of the poorest must have equal chance with the opportunity of the rich.”

Id. at 627 (emphasis in original) (citation omitted).

The State of Ohio also has an education clause similar to Pennsylvania's. [Article VI, section 2 of the Ohio Constitution](#) provides:

William Penn School District; Panther Valley School..., Not Reported in Atl....

The general assembly shall make such provisions, by taxation, or otherwise, as, with the income arising from the school trust fund, will secure a **thorough and efficient** system of common schools throughout the [s]tate; but, no religious or other sect, or sects, shall ever have any exclusive right to, or control of, any part of the school funds of this state.

OHIO CONST. art. VI, § 2 (emphasis added). The Supreme Court of Ohio first opined on the meaning of “thorough and efficient” in *Board of Education of the City School District of the City of Cincinnati v. Walter*, 390 N.E.2d 813 (Ohio 1979). There, the court stated: “A thorough system could not mean one in which part of any number of the school districts of the state were starved for funds. An efficient system could not mean one in which part of any number of the school districts of the state lacked teachers, buildings, or equipment.” *Id.* at 825 (quoting *Miller v. Kornis*, 140 N.E. 773 (Ohio 1923)).

Several years later, the court reaffirmed its understanding of “thorough and efficient,” stating “[a] thorough and efficient system of common schools includes facilities in good repair and the supplies, materials, and funds necessary to maintain these facilities in a safe manner, in compliance with all local, state, and federal mandates.” *DeRolph v. State of Ohio*, 677 N.E.2d 733, 747 (Ohio 1997). According to the court, the delegates of the 1850-51 Constitutional Convention “stressed the importance of education and reaffirmed the policy that education shall be afforded to every child in the state regardless of race or economic standing.” *Id.* at 740. That did not mean the system necessarily would be uniform, though. The court stated:

We recognize that disparities between school districts will always exist. By our decision today, we are not stating that a new financing system must provide equal educational opportunities for all. In a Utopian society, this lofty goal would be realized. We, however, appreciate the limitations imposed upon us. Nor do we advocate a “Robin Hood” approach to school financing reform. We are not suggesting that funds be diverted from wealthy districts and given to

the less fortunate. There is no “leveling down” component in our decision today.

Moreover, in no way should our decision be construed as imposing spending ceilings on more affluent school districts. School districts are still free to augment their programs if they choose to do so. However, it is futile to lay the entire blame for the inadequacies of the present system on the taxpayers and the local boards of education. Although some districts have the luxury of deciding where to allocate extra dollars, many others have the burden of deciding which educational programs to cut or what financial institution to contact to obtain yet another emergency loan. Our state Constitution makes the state responsible for educating our youth. Thus, the state should not shirk its obligation by espousing cliches about “local control.”

*297 *Id.* at 746.

The Supreme Court of Appeals of West Virginia has also been tasked with defining “thorough” and “efficient.” *Pauley v. Kelly*, 255 S.E.2d 859 (W. Va. 1979). Article XII, section 1 of the West Virginia Constitution states: “The Legislature shall provide, by general law, for a **thorough and efficient** system of free schools.” W. VA. CONST. art. XII, § 1 (emphasis added). According to the West Virginia court, a thorough and efficient system of free schools “develops, as best the state of education expertise allows, the minds, bodies and social morality of its charges to prepare them for useful and happy occupations, recreation and citizenship, and does so economically.”⁹⁰ *Id.* at 877. The court further found:

Legally recognized elements in this definition are development in every child to his or her capacity of (1) literacy; (2) ability to add, subtract, multiply and divide numbers; (3) knowledge of government to the extent that the child will be equipped as a citizen to make informed choices among persons and issues that affect his own governance; (4) self-knowledge and knowledge of his or her total environment to allow the child to intelligently choose life work to know his or her options; (5) work-training and advanced academic training as the child may intelligently choose; (6) recreational pursuits; (7) interests in all creative arts, such as music, theatre, literature, and the visual arts; (8) social ethics, both behavioral and abstract, to facilitate compatibility with others in this society.

William Penn School District; Panther Valley School..., Not Reported in Atl....

Implicit are supportive services: (1) good physical facilities, instructional materials and personnel; (2) careful state and local supervision to prevent waste and to monitor pupil, teacher and administrative competency.

*Id.*⁹¹

*298 There are other states that also have “thorough and efficient” language in their respective constitutions. For instance, the New Jersey Constitution provides: “The Legislature shall provide for the maintenance and support of a **thorough and efficient** system of free public schools for the instruction of all the children in the State between the ages of five and eighteen years.” Article VIII, section 4 of the New Jersey Constitution of 1947, N.J. CONST. OF 1947, art. VIII, § 4, ¶ 1 (emphasis added). New Jersey is a state that has been embroiled in school funding challenges for decades. In one of the earliest cases, the Supreme Court of New Jersey did as many courts have done in interpreting their respective education clauses – recognized the importance of a “thorough and efficient” system of education to the state itself. See *Robinson v. Cahill*, 303 A.2d 273, 295 (N.J. 1973) (*Robinson I*) (“The Constitution's guarantee must be understood to embrace that educational opportunity which is needed in the contemporary setting to equip a child for his role as a citizen and as a competitor in the labor market.”); see also *Abbott*, 693 A.2d at 428 (“At its core, a constitutionally adequate education has been defined as an education that will prepare public school children for a meaningful role in society, one that will enable them to compete effectively in the economy and to contribute and to participate as citizens and members of their communities.”). Subsequently, New Jersey courts have largely left it to the legislature to define the constitutional standard, which the legislature ultimately did through legislation. *Abbott*, 693 A.2d at 428; *Robinson v. Cahill*, 355 A.2d 129, 132 (N.J. 1976) (*Robinson II*).⁹² While the Court understands and appreciates the legislative prerogative involved with education, the legislature does not define the Constitutional requirement and cannot be the final arbiter of whether it is meeting its constitutional obligation. It is the courts’ constitutional obligation to review the constitutionality of legislative action. See *William Penn II*, 170 A.3d at 450 (“Surely, it cannot be correct that we simply constitutionalize whatever standards the General Assembly relied upon at a moment in time, and then fix those as the constitutional minimum moving forward, if only because at

that point, our oversight would be merely symbolic.”). To hold otherwise would rubber stamp legislative action without regard for whether it passes constitutional muster.⁹³

To summarize, the Education Clause requires that every student be provided with a meaningful opportunity to succeed academically, socially, and civically, which requires that all students have access to a comprehensive, effective, and contemporary system of public education. This is consistent with the plain language of the Education Clause, as well as its history. Moreover, it is consistent with how other jurisdictions with similarly-worded education clauses have interpreted their constitutions.

VII. MEASURING WHETHER RESPONDENTS ARE FULFILLING THEIR CONSTITUTIONAL OBLIGATION AND MEETING THE STANDARD

A. Parties’ Arguments

1. Petitioners

*299 Having established what the Education Clause requires, Petitioners assert the next step is to develop a standard or framework for evaluating whether the General Assembly is fulfilling its duty. Petitioners argue that the “reasonable relation test” set forth in *Danson*, 399 A.2d at 366, and *Marrero II*, 739 A.2d at 113, was effectively overruled in *William Penn II*, and that the new standard is “whether the Commonwealth's education funding scheme ‘achieves or is reasonably likely to achieve the constitutionally prescribed end.’ ” (Petitioners’ Br. at 33-34 (quoting *McCleary v. State of Washington*, 269 P.3d 227, 248 (Wash. 2012)).) According to Petitioners, “[t]his standard requires the Court to assess ‘whether the education funding apparatus as a whole gives rise to a constitutional violation.’ ” (*Id.* (quoting *Abbeville Cnty. Sch. Dist.*, 767 S.E.2d at 161-62).)

Petitioners contend that the Court need not “start from scratch” in determining what measures or benchmarks to consider because the General Assembly, Department, and State Board, through enactment of legislation, promulgation of regulations, and adoption of academic standards, have already defined what constitutes a high-quality, contemporary education as one that “prepares children for self-sufficiency

William Penn School District; Panther Valley School..., Not Reported in Atl....

and civic participation.” (*Id.* at 21-22.) Petitioners argue it is against this backdrop – whether the system of public education is preparing children to be college and career ready and to participate in a modern economy and the democratic process – that the system of public education should be measured. (*Id.* at 23-24.) While “state academic standards in place at any given time do not define the limits of the Constitution,” Petitioners assert that “these standards, in these circumstances, appropriately reflect the Commonwealth’s understanding of the goals of a high-quality education in the 21st century.” (*Id.* at 24.) Petitioners also assert that the Commonwealth recognizes that some children need more resources to achieve these end goals, as evidenced by Pennsylvania’s funding distribution formulas, which weigh certain subgroups of students greater than others based on various needs. (*Id.* at 27-28.)

Petitioners further contend that to determine whether the standard is met, the Court should look at not just what the system provides, *i.e.*, inputs, as Legislative Respondents suggest, but also what it achieves, *i.e.*, outputs. (*Id.* at 24, 30-31, 36-37.) Stated another way, Petitioners assert the

Court should review the financial and educational “inputs” to determine whether they are deficient; the “outputs” – or results – to determine whether they demonstrate that the system is working or is instead suffering from systemic failure; and the Commonwealth’s actions, to determine whether they are a “substantial cause of the constitutional violation.”

(*Id.* at 36-37 (quoting *Campaign for Fiscal Equity, Inc. v. State of New York*, 801 N.E.2d 326, 328 (N.Y. 2003)).)

Starting with the financial inputs, Petitioners allege Respondents’ funding scheme is “inadequate, inequitable, and irrational.” (*Id.* at 37.) It is inadequate, according to Petitioners, because there are wide shortfalls between what school districts need and what they receive. Petitioners point to the Costing Out Study originally commissioned by the General Assembly and adequacy targets previously published by the Commonwealth as evidence of inadequacy. (*Id.* at 39-40 & n.10.) Instead of directly addressing the \$4.5 billion shortfall at the time, Petitioners assert the General Assembly chose to ignore it, cut funding further, and stopped calculating the adequacy targets. (*Id.* at 39-40.) The funding scheme is inequitable, in Petitioners’ view, because it places a

greater burden on the poorer districts, which have student populations with greater needs and a limited tax base, than on their wealthier counterparts, which results in wider adequacy gaps and higher tax rates. (*Id.* at 40, 44-46.) Lastly, Petitioners claim the funding scheme is irrational because its “hold harmless” provision creates a perpetual problem in that districts cannot get less funds than the base aid year, resulting in districts with greater needs not getting adequate adjustments to meet those needs. (*Id.* at 41-42.)

*300 When the standard is applied to the evidence adduced at trial, Petitioners maintain they have demonstrated, by a preponderance of the evidence, that Respondents are not in compliance with the Education Clause.⁹⁴ According to Petitioners, the evidence shows Petitioners and other low-wealth school districts lack the educational resources needed for their students to succeed, meaning they often have to “triage the educational needs of their students.” (*Id.* at 43.) Some of the resources they lack include interventionists, guidance counselors, social workers, full-day pre-K, summer school, after-school programs, and smaller class sizes, to name a few. (*Id.* at 44.)

Petitioners argue that an examination of the outcomes illustrates the system is failing lower wealth districts and their students. Petitioners assert the evidence shows students in these districts are not meeting proficiency in basic subjects and are not graduating and that those who do graduate are not pursuing postsecondary education at rates that will serve the needs of the Commonwealth. (*Id.* at 47-49.)

Petitioners rebuff Legislative Respondents’ argument that there are several competing demands which must be funded along with education, citing the Supreme Court’s statement in *William Penn II* that the General Assembly’s constitutional obligations under the Education Clause should not “jostle on equal terms with non-constitutional considerations that the people deemed unworthy of embodying in their Constitution.” (Petitioners’ Br. at 51-52 (quoting *William Penn II*, 170 A.3d at 464).) Petitioners likewise ask the Court to reject Legislative Respondents’ attempts to place the blame on local control or the school districts. (*Id.* at 53-57.) Petitioners assert there is no evidence of wasteful spending and that low-wealth districts do not really have meaningful control over the ability to raise tax funds and are constantly faced with tough choices. (*Id.* at 53-57.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

Regardless, Petitioners assert the amount of local control to afford districts is within the General Assembly's control, and, therefore, this does not relieve the General Assembly of its constitutional obligation. (*Id.* at 53-55.) Petitioners also dispute Legislative Respondents' argument that they are not responsible for poverty or other societal ills that influence education. (*Id.* at 58.) According to Petitioners, this is the "very reason for robust public education, not an excuse to short-change it." (*Id.*) Finally, Petitioners argue Legislative Respondents' argument concerning how Pennsylvania ranks nationally in terms of spending should be rejected. (*Id.* at 61.) Petitioners posit there are several flaws with this reasoning including reliability concerns about the data, an assumption that a dollar spent is equal in every state, and "a simpler reason: they have not explained which, if any, of those states are providing an education that meets the requirements of the Pennsylvania [C]onstitution, and which are not." (*Id.* at 61-62.)

2. Legislative Respondents

Legislative Respondents remind the Court that it cannot "substitute [its] judgment as to the public policy for that of the legislature." (Speaker's Br. at 21-22 (quoting *Nixon v. Commonwealth*, 839 A.2d 277, 286 (Pa. 2003)); see also President Pro Tempore's Br. at 45, 50-52.) Instead, Speaker argues that Petitioners' Education Clause claim should be evaluated using the "reasonable relationship" standard first set forth in *Malone v. Hayden*, 197 A. 344 (Pa. 1938) (*Teachers' Tenure Act Cases*). (Speaker's Br. at 21-22.) Under that standard, he argues that the Court should limit its evaluation to "whether the legislation has a reasonable relation to the purpose expressed' in the Education Clause." (*Id.* at 22 (quoting *Teachers' Tenure Act Cases*, 197 A. at 352).) Here, Speaker argues that a reasonable legislator, balancing the needs of the entire Commonwealth, could have different budget priorities than Petitioners who advocate for more educational funding. (*Id.* at 70.)

*301 Furthermore, Legislative Respondents maintain that because this matter involves a constitutional challenge, Petitioners bear a heavy burden to demonstrate that Pennsylvania's school funding scheme "clearly, palpably[,] and plainly violates the Constitution." (Speaker's Br. at 21 (citing *Pa. Env't Def. Found. v. Commonwealth*, 161 A.3d

911, 929 (Pa. 2017) (*PEDF*)); President Pro Tempore's Br. at 9 (quoting *Consumer Party v. Commonwealth*, 507 A.2d 323, 331-32 (Pa. 1986)).) They assert Petitioners' proposed preponderance of the evidence standard is counter to established jurisprudence. (Speaker's Br. at 22-23; President Pro Tempore's Br. at 9-10.)

Legislative Respondents argue that Petitioners presented evidence of only a small portion of the Commonwealth's 500 school districts, which is insufficient to meet their burden of proof pursuant to *PARSS*. (Speaker's Br. at 45; President Pro Tempore's Br. at 56, 83-85, 88.) This is particularly the case, President Pro Tempore asserts, because Petitioners are asserting a facial, not as-applied, challenge to the school financing scheme. (President Pro Tempore's Br. at 83.) Notwithstanding this preliminary hurdle, Legislative Respondents argue that when the evidence adduced at trial is considered, it shows the General Assembly has fulfilled its obligation under the Education Clause to provide a basic standard public education. (Speaker's Br. at 46.)

Legislative Respondents dispute that the academic standards should serve as a measure, pointing to the Supreme Court's statement in *William Penn II* that "academic standards 'necessarily are mutable, and are ill-suited, as such, to serve as a constitutional minimum now or in the future.'" (Speaker's Br. at 58 (quoting *William Penn II*, 170 A.3d at 449).) They argue the established goals are "ambitious" and "not developed with the Pennsylvania Constitution in mind." (*Id.* at 58-59.)

In determining whether the General Assembly has fulfilled its constitutional obligation, Legislative Respondents argue the Court should consider only the following factors in its analysis: (1) courses and curricula, specifically "whether students are being offered a standard curriculum in core subject matters with opportunities for advancement;" (2) teachers, specifically "whether students are served by sufficient, well-trained, and experienced teachers;" (3) facilities, specifically, "whether facilities are generally safe and appropriate for students;" and (4) instrumentalities of learning; specifically "whether students have access to the basic educational instrumentalities of learning." (President Pro Tempore's Br. at 42-43; see also Speaker's Br. at 46.) Legislative Respondents argue the evidence shows every Petitioner District provides their students with these and

William Penn School District; Panther Valley School..., Not Reported in Atl....

more. (Speaker's Br. at 46-54; President Pro Tempore's Br. at 42-43, 57-58.)

Specifically, Speaker asserts the curricula at all of Petitioner Districts offer a “robust course selection” of not just core subjects, but also of advanced course work and electives, including extracurricular activities and athletics. (Speaker's Br. at 46-47; *see also* President Pro Tempore's Br. at 57.) They also argue Petitioners did not establish that a substantial number of low-wealth districts lack qualified and competent teachers. (Speaker's Br. at 50; *see also* President Pro Tempore's Br. at 57.) To the contrary, Speaker avers that Pennsylvania's teaching certification standards are among the highest in the nation and data from the Department shows the average classroom teacher in Pennsylvania has 15.5 years of experience and has taught at the same school for 14.1 years. (Speaker's Br. at 49.) Furthermore, Speaker argues Pennsylvania teacher salaries rank in the top 10 nationwide and nearly all teachers statewide rate as “satisfactory” or higher under the Department's educator rating system. (*Id.*) Legislative Respondents also take issue with Petitioners' characterization of crumbling or inadequate facilities. (*Id.* at 50-51; President Pro Tempore's Br. at 57.) Speaker argues Petitioners' evidence in this regard suffers from similar shortcomings as the petitioners' evidence in *PARSS*. (Speaker's Br. at 50-51.) First, he claims, there was little to no evidence of systemic issues, and second, the facilities evidence that was presented was “plainly distorted” because the photographs depicted facilities no longer utilized, conditions that had been addressed, and close-up images with little to no context. (*Id.* at 51.) In fact, Speaker points out many Petitioner Districts are undergoing or have undergone renovations. (*Id.* at 52.) Legislative Respondents also argue there is no evidence that low-wealth school districts lack the basic instrumentalities of learning, again noting that several Petitioner Districts have recently revised their curricula and purchased new materials, including textbooks and online instructional tools. (*Id.* at 53; *see also* President Pro Tempore's Br. at 57.) Although Petitioners claimed there was a lack of student technology, Speaker points to testimony about one-to-one computers or tablets, provision of Wi-Fi hotspots, and other technology, albeit some were initiated as a result of the COVID pandemic. (Speaker's Br. at 53-54.) In terms of more traditional types of instrumentalities of learning, Speaker asserts there was no evidence presented that any low-wealth district lacks desks, chairs, tables, or writing materials. (*Id.* at 54.) In short, Speaker asserts that “[t]he evidence

presented at trial shows that not only are low-wealth districts in Pennsylvania, including Petitioner Districts, able to offer a basic education to their students, they offer opportunities that go far beyond.” (*Id.*; *see also* President Pro Tempore's Br. at 57 (“[T]he evidence that was presented at trial showed that each Petitioner District *exceeds* the constitutional standard.”) (emphasis in original).)

***302** President Pro Tempore asserts that the Court should not consider outcomes in determining whether the General Assembly has satisfied its constitutional duty because the Education Clause does not require the General Assembly to ensure a certain level of student outcomes. (President Pro Tempore's Br. at 64-65.) Also, the use of outcomes would render the Education Clause standard unmanageable in President Pro Tempore's view and require the Court to make policy judgments reserved for the General Assembly. (*Id.* at 65-66.) Should the Court determine that outcomes are a consideration, President Pro Tempore asserts standardized achievement scores should not be given more weight than other measures, including student growth, graduation rates, other exam scores, student grades, and other Future Ready PA Index Metrics, all of which do not support Petitioners' case. (*Id.* at 67-74.)

Legislative Respondents also argue the evidence that insufficient funding is responsible for alleged achievement gaps is specious. (Speaker's Br. at 68; President Pro Tempore's Br. at 58-59, 75-78.) To the extent Petitioners rely on the testimony of their expert Dr. Johnson to establish the connection, Legislative Respondents point out that the bulk of other research shows there is “*no* relationship between increased education spending and improved student achievement.” (Speaker's Br. at 68 (emphasis in original); *see also* President Pro Tempore's Br. at 76-77.) Legislative Respondents argue there are several personal, family, and community factors that can impact achievement and attainment outcomes. (Speaker's Br. at 69-70; President Pro Tempore's Br. at 60.) President Pro Tempore also asserts there is evidence local school districts are not spending their funding in a cost-effective manner, which also undercuts Petitioners' ability to establish causation. (President Pro Tempore's Br. at 78-79.) As for other initiatives that Petitioners advocate, such as reduced class sizes, summer and after-school programs, and preschool programs, Legislative Respondents assert the effectiveness of these initiatives has yet to be determined. (Speaker's Br. at 71-72; President Pro

William Penn School District; Panther Valley School..., Not Reported in Atl....

Tempore's Br. at 59, 62-63.) Given the mixed reviews, it is reasonable, in Legislative Respondents' view, for the General Assembly to allocate the limited tax dollars to other important priorities, including to other institutions better positioned to address the out-of-school factors. (Speaker's Br. at 73; President Pro Tempore's Br. at 60.) Moreover, President Pro Tempore reasserts that the initiatives are outside the purview of the Court to determine as they involve educational policy, which is reserved for the General Assembly. (President Pro Tempore's Br. at 59.)

Contrary to Petitioners' assertion that the General Assembly should calculate adequacy targets, Legislative Respondents argue there is no such requirement either in the Constitution or state law. (Speaker's Br. at 73-74; President Pro Tempore's Br. at 80-81.) Moreover, Legislative Respondents assert the validity and efficacy of costing out studies is questionable. (Speaker's Br. at 74; President Pro Tempore's Br. at 81.)

As for Petitioners' argument that the hold harmless provision is irrational, President Pro Tempore asserts the former Executive Director of Petitioner PARRS, Joseph Bard, testified in favor of hold harmless in 2015. (President Pro Tempore's Br. at 81-82.) Moreover, hold harmless provisions are important to ensure that there are not "[s]udden declines in funding levels [that] can hinder districts from satisfying long-term payment obligations that they incurred with the reasonable expectation that those declines would not occur." (*Id.* at 82.) Lastly, President Pro Tempore points out that "as more time passes, a larger percentage of BEF goes through the Fair Funding Formula, *i.e.*, the portion of the Act 35 formula that accounts for poverty levels, household income, and tax revenue, among other factors." (*Id.* (citing Section 2502.53 of the School Code, 24 P.S. § 25-2502.53).)

3. Executive Respondents

*303 Executive Respondents argue that the Court should consider both inputs and outputs when evaluating whether the General Assembly has met its constitutional obligation. They contend "[t]he plain language of the Education Clause imposes on the General Assembly an obligation to provide the necessary inputs (*i.e.*, the funding and provision of resources)." (Executive Respondents' Br. at 6.) However, to gauge whether the inputs are adequate, it is also necessary

to consider outputs or student educational outcomes. (*Id.* at 6-7.) This approach, according to Executive Respondents, is consistent with how the majority of other courts have evaluated the constitutionality of their respective systems. (*Id.* at 7 (citations omitted).)

Executive Respondents assert "[t]he equitable funding factors contained in Act 35 should be heavily weighted in the Court's inputs analysis." (*Id.* at 8.) They explain "Act 35 contains a legislative blueprint for assessing the increased funding needs of school districts by virtue of the characteristics of their student populations (*e.g.*, poverty), geography (*e.g.*, sparsity) and local ability and effort to pay." (*Id.*) Likewise, Executive Respondents claim the Level Up funding initiative should be considered. (*Id.* at 8-9.) As for outcomes, Executive Respondents suggest the Court "accord significant weight" to the PSSA, Keystone Exam, and PVAAS scores, which "are legislated measures to determine the effectiveness of the system of public education," in addition to the "outcome measures tracked in the Future Ready PA Index[, which] contain reliable metrics that reflect the results of disparate funding inputs in districts across the Commonwealth." (*Id.*) Executive Respondents proffer no opinion on whether the system is constitutional.

4. State Board

The State Board takes no position on whether Petitioners have demonstrated that the General Assembly has violated the Education Clause. (State Bd.'s Br. at 23.) The State Board, however, does state that it "has set rigorous standards for school districts for properly educating the school children of Pennsylvania" and "[r]elaxing those academic standards to levels accessible by lesser resources would not provide a thorough and efficient system of public education." (*Id.* at 22; *see also id.* at 27.)

5. Amici

Attorney General argues that "there is no single list of substantive content or resources that will define a constitutionally satisfactory education for all time" because education is evolving. (Attorney General's Amicus Br. at 40.) However, Attorney General posits "[t]he State Board's

William Penn School District; Panther Valley School..., Not Reported in Atl....

description of the ‘[p]urpose of public education,’ ” in its regulation at 22 Pa. Code § 4.11, “can play an important role in this analysis.” (*Id.* at 40-41 (first alteration added).) Attorney General explains:

That section lists the “knowledge and skills” that all public school students should “develop” and includes subjects no one can reasonably dispute are essential to working in the 21st century, such as mathematics, civics and government, science and technology, and [ELA]. [22 Pa. Code] § 4.11(g).[] That section also lists the characteristics of intelligence and character that no one can reasonably dispute are necessary for living in our shared community, including the development of integrity and the ability to think critically, process information, adapt to change, and work independently and collaboratively. [22 Pa. Code] § 4.11(c).[] These substantive elements are general enough that the Court can reasonably expect them to not significantly change, but specific enough to provide a concrete metric by which to measure Pennsylvania’s public education system.

(*Id.* at 41 (footnotes omitted).)

In its evaluation, Attorney General argues the Court must consider the inputs, as well as the outputs. (*Id.* at 42, 44.) When the evidence presented is considered, Attorney General asserts the fundamental elements of a thorough and efficient education are not provided. (*Id.*) Among the inadequacies Attorney General identifies are large class sizes, a shortage of certified teachers, curricula not aligned with state standards, a lack of advanced educational opportunities, and an inadequate number of counselors, social workers, reading specialists, and tutors, to name a few. (*Id.* at 42-44.) Attorney General claims the effect of these inadequacies is evidenced in the low levels

of proficiency on the PSSA and Keystone Exams and lower graduation rates. (*Id.* at 45.)

*304 Various representatives of Pennsylvania businesses/business organizations and institutions of higher learning (Business and Institutional Amici)⁹⁵ filed an amicus brief in which they argue the General Assembly is not ensuring that all students are college and career ready. (Business and Institutional Amici’s Br. at 2.) Business and Institutional Amici assert better funding is required to provide students with the tools they need to thrive, which is essential “for the health and competitiveness of our businesses.” (*Id.* at 2-3.) According to Business and Institutional Amici, “meeting Pennsylvania’s educational standards means much more than just building out important subject-matter competencies.” (*Id.* at 3.) They claim that for students to be college and career ready, “regardless of their role or field of work,” they must embrace the following skills: “analytical thinking, self-direction, responsible decision-making, problem solving, resilience, creativity, and the ability to collaborate and communicate effectively.” (*Id.*) Business and Institutional Amici argue “the needs of [their] businesses were a driving force” behind adopting the standards set forth in the State Board’s regulations. (*Id.*) Business and Institutional Amici argue institutions of higher learning “benefit directly when students come to [them] after having already received a high-quality education in elementary and secondary schools.” (*Id.* at 5.) They claim a high-quality education at those levels helps students persist in their studies and graduate. (*Id.* at 5-7.) When students attend their institutions ill-prepared, Business and Institutional Amici argue they “must divert scarce resources to engage in remedial programs to close proficiency gaps.” (*Id.* at 6.) As an example, they point to evidence at trial that 60% of graduates of the SDP who enrolled at Community College of Philadelphia required some type of remedial coursework. (*Id.* (citing Tr. at 7896).) Finally, Business and Institutional Amici acknowledge that not all high school graduates will further their studies, “[b]ut meeting the Commonwealth’s college and career ready standard means that every student will be prepared to either productively enter the workforce or flourish at institutions of higher learning based on their own choices and aspirations and not where in the Commonwealth they grew up or which school they attended.” (*Id.* at 7-8.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

A number of organizations (Organizational Amici)⁹⁶ filed an amicus brief to highlight the impact of the funding inadequacies, particularly on at-risk students who disproportionately attend schools in low-wealth districts. (Organizational Amici's Br. at 14.) Organizational Amici assert that, in order to receive an adequate education, at-risk students, such as those living in poverty, ELL students, and students with disabilities, require targeted programs, services, and interventions, including “early childhood education, small class sizes, qualified teachers, administrators, additional staff, including reading and math specialists, academic and social supports, a robust curriculum, extra-curricular activities, adequate facilities, and technology.” (*Id.* at 16.) However, to deliver these programs and services to students, Organizational Amici argue the districts need more funds. (*Id.* at 16-17.) They also claim minority students are disproportionately impacted by the inequities in education. (*Id.* at 17-22.) Organizational Amici point to several other states whose courts have ordered additional resources for at-risk students. (*Id.* at 22-26.) Finally, they assert that research shows that increased school funding has positive effects on academic and life outcomes of at-risk students. (*Id.* at 26-28.)

The Pennsylvania State Education Association (PSEA) also filed an amicus brief in support of Petitioners.⁹⁷ Therein, PSEA explain the funding sources of school districts and note that because of the “substantial difference between the household income and wealth” of the wealthiest and poorest districts, the wealthiest districts “have significantly more dollars of local revenue per student available to fund their public schools.” (PSEA's Amicus Br. at 4.) According to PSEA, “[i]f the state funding formula were perfectly aligned and funded, state subsidy money would bridge that gap and equalize the resources available for education from the wealthiest to the poorest school districts.” (*Id.* at 6.) PSEA further asserts that “critically important (but non[]mandated) personnel,” such as “counselors, social workers, nurses, psychologists, and instructional aides” are cut first when faced with budgetary constraints. (*Id.* at 9-10.) Accordingly, PSEA posits that “[t]he current funding system does not provide either a thorough or an efficient system of public education to the students, families, or communities that are currently ill-served by the lower income, low-wealth school districts.” (*Id.* at 19.)

***305** The Commonwealth Foundation filed an amicus brief in support of Respondents.⁹⁸ Therein, the Commonwealth Foundation claims that, “[i]n application, the precise definition of ... ‘a *thorough and efficient system of public education*’ that ‘serve[s] the needs of the Commonwealth’ [] is far less significant than this Court's determination of the funding levels necessary to provide a system of public education that satisfies the constitutional standard.” (Commonwealth Foundation's Amicus Br. at 13 (emphasis in original).) It asserts “[t]he mandate is ... defined by the funding level required.” (*Id.*) The Commonwealth Foundation goes on to cite statistics that allegedly show Pennsylvania spends more per student than the national average, ranking it within the top 10, and 470 of the Commonwealth's 500 districts have per student expenditures at or above the national average. (*Id.* at 14, 21.) It further asserts that “Pennsylvania recognizes the disparity created by reliance on revenues from local property taxes” and, as a result, “diverts significant state-level funding to struggling school districts,” which “is the structure for which Petitioners advocate.” (*Id.* at 17-18.) Therefore, the Commonwealth Foundation argues “the deficiency confronting Petitioners is not a deficiency in available funding, but rather a deficiency in performance outcomes.” (*Id.* at 23.) Because there are districts that expend a similar amount per student as the Petitioner Districts and perform better, the Commonwealth Foundation argues the “Court should ... infer that factors *aside from funding* are substantially responsible for the disparity in achievement.” (*Id.* (emphasis in original).) According to the Commonwealth Foundation, “[i]t defies logic to conclude that Pennsylvania has somehow violated the state constitution for failing to provide necessary funding to certain school districts, when other school districts in the Commonwealth have succeeded academically with the same funding levels.” (*Id.* at 23-24.) Moreover, the Commonwealth Foundation asserts that, while asking for additional funding, the school districts are sitting on “sizable reserve funds,” totaling \$4.84 billion across the state in 2019-20. (*Id.* at 26, 28.)

6. Petitioners' Reply

Petitioners contest Legislative Respondents' attempt to limit this Court's review to just curricula, teachers, facilities, and basic instrumentalities of learning, stating:

This bare-bones, input-only list is ultimately an attempt to secure a rubber stamp. That is not because the educational resources Respondents list are unimportant – personnel and books and facilities are part of any contemporary notion of education – but because Legislative Respondents seek to orphan those resources from any end goals that might give them qualitative meaning, turning compliance with the Education Clause into a simplistic exercise in box-checking.

(Petitioners’ Reply Br. at 27-28.) Petitioners indicate that while other jurisdictions may consider these factors, they are not a “punch list,” and courts still consider how they align to the end goals. (*Id.* at 28-29, 32-33.)

Petitioners also take issue with Legislative Respondents’ characterization of their claims as “facial” challenges. Petitioners contend they are neither facial nor as applied. (*Id.* at 37-40.) Petitioners claim the “facial/as-applied framework is inapplicable where, as here, the constitutionality of a specific statute or regulation has not been called into question.” (*Id.* at 37.) They urge the Court to follow the reasoning of *Martel v. Allegheny County*, (*id.* at 38), wherein the common pleas court stated:

[f]acial constitutional challenges arise where the language of the challenged law is, on its face, purportedly unconstitutional. “As applied” constitutional challenges arise where the government’s application of the challenged law is purportedly unconstitutional. Here, there is no real “challenged law” ... but rather [the laws] are not being applied at all.

Martel (Pa. Com. Pl., No. GD17-010704, filed Mar. 29, 2018), 2018 WL 10602105, at *2. For similar reasons, Petitioners maintain the preponderance of the evidence standard applies, but claim that even if it is the burden of proof proposed by Legislative Respondents – whether the funding scheme “clearly, plainly, and palpably” violates the Constitution – their evidence also satisfies this standard. (Petitioners’ Reply Br. at 39 n.15.)

Petitioners also dispute that their evidence is deficient because they have not shown funding is a systemic problem or established causation and cite multiple pieces of evidence to support their claims. (*Id.* at 41-46, 52-53.) In addition to evidence about the Petitioner Districts, Petitioners assert there are numerous exhibits that cover all 500 school districts within the Commonwealth. (*Id.* at 42.) Petitioners claim “Legislative Respondents cannot seriously dispute that” the challenges faced by Petitioner Districts, SDP, and Otto-Eldred, all of whom had representatives testify, “are not representative of the system’s problems,” especially since they are all “Level Up” districts with the highest need. (*Id.* at 43.)

*306 Finally, Petitioners ask the Court to reject the “reasonable relationship test” proposed by Legislative Respondents. Petitioners reiterate that *Danson*, from which the test is derived, was overruled by the Supreme Court in *William Penn II*. (*Id.* at 46-47.) Furthermore, Petitioners assert Speaker has morphed the “reasonable relationship” test into the “reasonable legislator” test, which has no basis in law. (*Id.* at 47, 49-51.)

B. Discussion

1. Applicable Standard of Review and Burden of Proof

The Court begins with several threshold issues raised by the parties, starting with the applicable standard of review and burden of proof. The parties offer competing viewpoints as to which standards apply. Petitioners contend that a court examining a claim under the Education Clause should evaluate whether the system achieves or is reasonably likely to achieve the constitutional mandate of a high-quality, contemporary education for all children. (Petitioner’s Br. at 33.) So long as Petitioners demonstrate the system does not do

William Penn School District; Panther Valley School..., Not Reported in Atl....

this, by a preponderance of the evidence, Petitioners contend they prevail. (*Id.* at 34 n.6.) Legislative Respondents, on the other hand, assert the Court should use the “reasonable relation” test from *Teachers’ Tenure Act Cases*. (Speaker’s Br. at 21.) Under this standard, Legislative Respondents contend the Court should “ ‘not inquire into the reason, wisdom, or expediency of the legislative policy with regard to education, but whether the legislation has a reasonable relation to the purpose expressed’ in the Education Clause.” (*Id.* at 22 (quoting *Teachers’ Tenure Act Cases*, 197 A. at 352).) Moreover, they assert the applicable burden of proof is not preponderance of the evidence; instead, Petitioners “bear[] the heavy burden of demonstrating that the statute clearly, plainly, and palpably violates the Constitution,” which is consistent with well settled constitutional jurisprudence. (*Id.* at 21-23 (quoting *PEDF*, 161 A.3d at 929); see also President Pro Tempore’s Br. at 9-10.) Petitioners respond that the Supreme Court in *William Penn II* has determined that the “reasonable relation” test is not controlling in this situation.

In the *Teachers’ Tenure Act Cases*, teachers who had been terminated prior to enactment of a new law brought a mandamus action seeking to require their school boards to execute new contracts with them, consistent with the new law. The appellant-school boards challenged the constitutionality of the new law, including on the grounds that it “abridge[d] the right of future Legislatures to enact appropriate laws in the exercise of the governmental function as prescribed by” the former Education Clause.⁹⁹ *Teachers’ Tenure Act Cases*, 197 A. at 352. “In considering laws relating to the public school system,” the Supreme Court stated, “courts will not inquire into the reason, wisdom, or expediency of the legislative policy with regard to education, but whether the legislation has a **reasonable relation to the purpose expressed** in [the 1874 Education Clause], and whether the fruits or effects of such legislation impinge the article by circumscribing it, or abridging its exercise by future Legislatures within the field of ‘a thorough and efficient system of public schools.’ ” *Id.* (quoting PA. CONST. OF 1874, art. X, § 1) (emphasis added).¹⁰⁰ The Supreme Court expressed concern that one Legislature could “bind the hands of a subsequent one,” thereby impeding a thorough and efficient system. *Id.* Because education was ever-evolving, the Supreme Court said it was necessary for future Legislatures to be able to adapt. *Id.* However, the Supreme Court found subsequent Legislatures could amend or abolish

the law through enactment of new legislation; therefore, the teachers’ cause of action failed. *Id.* at 353.

*307 Subsequent to the *Teachers’ Tenure Act Cases*, the Supreme Court cited to the reasonable relation test, this time in connection with a challenge brought by SDP and several parents against the state treasurer and secretary of education alleging violation of the present-day Education Clause. *Danson*, 399 A.2d at 366. In *Danson*, the school district and parents sought to enjoin disbursement of state subsidies to any school district until “sufficient funds” were paid to the petitioners to provide “a normal program of full educational services” or “substantially uniform” funds were distributed to all districts. *Id.* at 362-63. The action was dismissed based upon preliminary objections. On appeal, the Supreme Court held that “[i]t would be unreasonable to conclude that a greater duty has been delegated than that which the Legislature, through the statutory funding scheme, has provided the school district the means to fulfill.” *Id.* at 365. The Supreme Court then cited the reasonable relation test from the *Teachers’ Tenure Act Cases* and concluded:

The Constitution “makes it impossible for a legislature to set up an educational policy which future legislatures cannot change” because “the very essence of this section is to enable successive legislatures to adopt a changing program to keep abreast of educational advances.” It would be no less contrary to the “essence” of the Constitutional provision for this Court to bind future Legislatures and school boards to a present judicial view of a constitutionally required “normal” program of educational services. It is only through free experimentation that the best possible educational services can be achieved.

Danson, 399 A.2d at 366 (quoting *Teachers’ Tenure Act Cases*, 197 A. at 352). In essence, the Supreme Court held the issue was nonjusticiable.

However, the Supreme Court continued that if it were to define what was required by the Education Clause, the only judicially manageable method of defining “thorough and efficient” would be to impose “the rigid rule that each pupil must receive the same dollar expenditures,” although it was clear from a review of the Education Clause’s history that uniformity was not required. *Id.* at 366-67. The Supreme Court further held that “[a]s long as the legislative scheme for financing public education ‘has a reasonable relation’ to

William Penn School District; Panther Valley School..., Not Reported in Atl....

(providing) for the maintenance and support of a thorough and efficient system of public schools,' ... the General Assembly has fulfilled its constitutional duty to the public school students of Philadelphia." *Id.* at 367 (quoting *Teachers' Tenure Act Cases*, 197 A. at 352). The Supreme Court concluded that the General Assembly "enacted a financing scheme reasonably related to the maintenance and support of a system of public education in the Commonwealth" because "[t]he framework is neutral with regard to the [SDP] and provides it with its fair share of state subsidy funds." *Id.* Therefore, the Supreme Court concluded the funding scheme did not "[c]learly, palpably, and [p]lainly violate[] the Constitution." *Id.* (citation omitted).

Approximately two decades later, the SDP, along with the City of Philadelphia and various organizations, students, and parents, brought an action against the Commonwealth claiming the existing funding system did not provide the district with sufficient funds to meet the students' needs. This Court sustained preliminary objections, finding the claim was not justiciable, relying primarily on *Danson. Marrero by Tabales v. Commonwealth*, 709 A.2d 956, 965-66 (Pa. Cmwlth. 1998) (*Marrero I*). On appeal, the Supreme Court affirmed explaining this Court's decision was consistent with precedent. *Marrero II*, 739 A.2d at 112, 114.

The Supreme Court in *William Penn II*, however, did not follow this line of cases as it relates to claims under the Education Clause.¹⁰¹ Initially, the Supreme Court recognized that to decide the questions presented in this case required the Supreme Court to review the precedents upon which *Marrero II* relied, and, after a thorough discussion, it found "irreconcilable deficiencies in the rigor, clarity, and consistency of the line of cases that culminated in *Marrero II*." *William Penn II*, 170 A.3d at 457.

*308 The Supreme Court explained that in the *Teachers' Tenure Act Cases*, it

did not specifically decline to decide the constitutional challenge as a political question. Rather, [it] measured the challenged legislation against the Education Clause *substantively* without any express

reservation about [its] authority to do so. In adopting and applying the "reasonable relation" test, th[e Supreme] Court assumed a deferential posture towards the General Assembly's efforts, reflecting the judicial restraint ostensibly necessary to preserve free legislative development of education policy. However, in underscoring that any successor legislature would be free to amend or repeal the [new law], the Court spoke forcefully against the government's prerogative to "bargain[] away or fetter[]" education, and emphasized that no laws, or "legislative incursions," can be permitted to "destroy" the underlying constitutional purpose.

William Penn II, 170 A.3d at 441 (emphasis in original).

The Supreme Court called *Danson* a "case that defies confident interpretation," its approach "imprecise," and its "conclusory extension of the *Teachers' Tenure Act Case[s]* to the question of justiciability ... problematic." *William Penn II*, 170 A.3d at 441, 443-44. The Supreme Court also stated that *Danson* suffered from "internal tensions," explaining "[o]n the one hand, the *Danson* Court embraces and purported to apply the reasonable relation test from the *Teachers' Tenure Act Case[s]* to the challenge presented. On the other, it recited *Baker*.¹⁰² factors and held that the claim was not justiciable." *William Penn II*, 170 A.3d at 443.¹⁰³ The Court concluded that "the *Danson* Court's imprecise approach, especially viewed in tandem with the 'gross disparity' qualification, undermines any effort to derive a broad principle regarding the justiciability of Education Clause and equal protection claims in the instant matter." *William Penn II*, 170 A.3d at 443-44.

*309 The Supreme Court stated that this Court, in *Marrero I*, "[f]ollow[ed] *Danson*'s dubious lead."¹⁰⁴ *William Penn II*, 170 A.3d at 444. Although this Court in *Marrero I* purported to conclude that the funding scheme bore a reasonable relation to the Education Clause, the Supreme Court stated this Court

William Penn School District; Panther Valley School..., Not Reported in Atl....

then circled back to observe, in the same terminology applied in the *Teachers' Tenure Act Case[s]*, that it would “not inquire into the reason, wisdom, or expediency of the legislative policy with regard to education, nor any matters relating to legislative determinations of school policy or the scope of educational activity.” *William Penn II*, 170 A.3d at 445 (quoting *Marrero I*, 709 A.2d at 965). As a result, the Supreme Court observed that, “in *Marrero I*, as in *Danson*, and unlike in the *Teachers' Tenure Act Case[s]* upon which both decisions purported to rely, the court deemed the question non-justiciable, even as it utilized language suggesting its review and rejection of the underlying challenge on the merits.” *Id.*

Despite these concerns, the Supreme Court stated that “[t]he *Teachers' Tenure Act Case[s]*, *Danson*, and *Marrero II* necessarily inform[ed] [its] consideration of the justiciability of Petitioners’ ” claims. *William Penn II*, 170 A.3d at 445. However, it cautioned that “to rely uncritically upon their analyses and holdings would be to rest our decision upon an unstable three-legged stool.” *Id.* It continued:

The *Teachers' Tenure Act Case[s]* can be construed either as establishing a standard of review by which to review Education Clause challenges, in the form of the reasonable relation test, or as one cursorily dismissing plaintiffs’ claim upon the strength of future legislatures’ discretion to modify education policy. In fact, that future legislative discretion was not impaired by the [a]ct in question, given that the [a]ct could be repealed or amended at any time. Then, in *Danson*, the Court seemed to vindicate deferential merits review in its recitation and apparent application of the reasonable relation standard, only to follow that with what appeared to be a determination that the challenge was not justiciable. The Court based this pivot upon the manifestly debatable premises that: (a) the only judicially discoverable and manageable standard for resolving such a challenge would be to require equal per capita expenditures statewide; and (b) the imposition of any judicially-defined standard whatsoever necessarily would preclude the General Assembly's continued salutary experimentation with education policy. Then came *Marrero I* and *II*, wherein the Commonwealth Court, and then this Court, adopted *Danson* wholesale, warts and all, again applying the political question doctrine and reasonable relationship test simultaneously—and irreconcilably.

For what little developed reasoning there is to be gleaned from our prior three cases, we must conclude that the slate relative to the instant challenges is, if not clean, then at least relatively unadorned by any harmonious rule of law that controls the instant matter. ...

*310 *William Penn II*, 170 A.3d at 445. Thus, in determining whether the instant action was justiciable, the Supreme Court said it would “consider anew the *Baker* factors,” which it then applied. Ultimately, the Supreme Court majority did not rest its decision upon the “unstable three-legged stool” (the *Teachers' Tenure Act Cases*, *Danson*, and *Marrero II*) and, instead, concluded that this matter was, in fact, justiciable, and not a political question, reversing this Court's decision to the contrary, and thereby rejecting the contrary precedent upon which this Court had relied. *Id.*

The inter-connection between the “reasonable relation standard” and the justiciability of challenges to education funding was further elucidated by then-Chief Justice Saylor in his dissent in *William Penn II*. He called into question the reasonable relation standard, stating “its purpose has become distorted.” *Id.* at 484 (Saylor, C.J., dissenting). Like the majority, the dissent criticized *Marrero II* for not undertaking “any analysis of whether the particular funding scheme was likely to make the system ‘thorough and efficient,’ as it considered that question to be political in nature and unsuitable to judicial determination.” *Id.* Noting that the Court had “never invalidated an education-funding scheme on the grounds that it failed the reasonable-relation test,” the dissent recognized that, “[a]ppplied in this way, the reasonable-relation standard amounts to virtually **no standard at all** because any legislative scheme purportedly enacted to discharge the General Assembly's obligations under the Education Clause ... will pass scrutiny regardless of whether a thorough and efficient system exists in reality or in name only.” *Id.* at 484-85 (emphasis added). The dissent thus doubted “whether the reasonable-relation standard was intended to be used in such a fashion,” *id.* at 485, and so examined how the standard originated and its initial purpose. In the *Teachers' Tenure Act Cases*, “the seminal case in this regard,” the dissent explained the reasonable relation test was used “to assess whether the challenged legislation **fell within the scope** of legislative authority, **not whether it fulfilled** legislative obligations.” *William Penn II*, 170 A.3d at 485 (emphasis added). The dissent then reviewed the history and

William Penn School District; Panther Valley School..., Not Reported in Atl....

evolution of the reasonable relation standard in other contexts, such as the state's police powers, and other jurisdictions, including federal cases, and concluded

the **reasonable-relation test was not designed to evaluate whether a branch of state government has fulfilled its constitutional obligations. It was wrongly applied in this way** in *Danson* and *Marrero II*, and the experience of those cases teaches that the standard has little efficacy as means of enforcing legislative obligations in any event. Instead, the litmus, when applied properly, is utilized to ascertain whether the government has the authority to legislate, or otherwise act, in the manner subject to challenge, as reflected in *Teachers' Tenure Act* [*Cases* and other cases].

Id. at 486 (emphasis added). The dissent then considered that “[i]n the present controversy, the substance of [Petitioners’] allegations is that the political branches have not acted sufficiently to fulfill their duties, not that they have acted beyond the authority assigned to them by the state charter.” *Id.* at 486. The dissent thus concluded that **the reasonable relation test would not properly apply to these allegations.**

From this discussion, it is evident that, under the analysis in both the majority and dissenting opinions in *William Penn II*, the reasonable relation test would not properly apply or control the analysis in this case. The Court will, therefore, not rely upon it.

*311 Petitioners recognize that, in general, “acts of the General Assembly will be declared void only if they ‘clearly, palpably and plainly’ violate the Constitution.” (See Petitioners’ Proposed Conclusion of Law (Proposed COL) ¶ 5 (quoting *City of Philadelphia*, 838 A.2d at 585).) While questioning whether such a formulation is a burden of proof, Petitioners posit that the matter here is different, and argue that, in a case about whether the General Assembly

failed to carry out an affirmative mandate in violation of the Constitution, the preponderance of the evidence is the proper standard. (*Id.* ¶ 75.) Although Petitioners cite caselaw from South Carolina, Delaware, and Washington, that has applied this standard, they have provided no authority within Pennsylvania caselaw that would support their argument that this standard is applicable in the Commonwealth. (*Id.* ¶¶ 76-77.)

It is well settled that there is a presumption the General Assembly does not intend to violate the Pennsylvania Constitution. *McLinko*, 279 A.3d at 563; *Robinson Township*, 83 A.3d at 943; see also 1 Pa. C.S. § 1922(3). This is “in part because there exists a judicial presumption that our sister branches [of government] take seriously their constitutional oaths.” *Stilp v. Commonwealth*, 905 A.2d 918, 938-39 (Pa. 2006) (*Stilp II*). Generally, a party challenging the constitutionality of a statute bears the heavy burden of proving the statute “clearly, palpably, and plainly” violates the Constitution. *Robinson Township*, 83 A.3d at 943; *Stilp II*, 905 A.2d at 939. Furthermore, “[a]ny doubts are to be resolved in favor of a finding of constitutionality.” *Payne v. Dep’t of Corr.*, 871 A.2d 795, 800 (Pa. 2005) (citing 1 Pa.C.S. § 1922(3)).

Here, although Petitioners argue that this case is different because the issue is “whether the General Assembly's failure to properly carry out its affirmative mandate is a violation of the Constitution,” (Petitioners’ Proposed COL ¶ 75), it appears to be a distinction without a difference. While it is true that Petitioners are challenging whether the General Assembly is fulfilling its constitutional mandate to “provide for the maintenance and support of a thorough and efficient system of public education to serve the needs of the Commonwealth,” PA. CONST. art. III, § 14, the maintenance and support of the system is accomplished through the legislative process, including legislative appropriations and various legislation, that provides how those appropriations are allocated among districts. Thus, legislative acts are inextricably tied to resolving this issue. Therefore, the recognized standard applies, and to prevail on its claims, Petitioners must show Respondents are clearly, palpably, and plainly violating the Constitution.

2. Measuring whether the standard is being met

William Penn School District; Panther Valley School..., Not Reported in Atl....

With the above standard of review and burden of proof applicable to Petitioners' claims in mind, and having defined what a "thorough and efficient system of public education to serve the needs of the Commonwealth" means, the Court must next consider whether that standard is being met. As the Supreme Court of Minnesota explained,

some level of qualitative assessment is necessary to determine whether the State is meeting its obligation to provide an adequate education. This assessment is an intrinsic part of our power to interpret the meaning of the constitution's language. ... **The very act of defining the terms used in the Education Clause and determining whether the constitutional requirements have been met inevitably requires a measure of qualitative assessment.**

Cruz-Guzman v. State of Minnesota, 916 N.W.2d 1 (Minn. 2018) (emphasis added).

The parties offer differing views as to how the Court should measure thoroughness and efficiency. Petitioners, along with the State Board and some amici, argue the task is easier because the existing academic standards provide such a measure. Although they recognize "state academic standards in place at any given time do not define the limits of the Constitution," Petitioners assert that "these standards, in these circumstances, appropriately reflect the Commonwealth's understanding of the goals of a high-quality education in the 21st century." (Petitioners' Br. at 24.) Legislative Respondents argue the Supreme Court held the "academic standards 'necessarily are mutable, and ill-suited, as such, to serve as a constitutional minimum now or in the future.'" (Speaker's Br. at 58 (quoting *William Penn II*, 170 A.3d at 293).) They further assert the academic standards are "ambitious," as State Board and Department witnesses testified, and therefore should not be used to determine whether the constitutional standard is being met. (*Id.* at 58-59.)

*312 However, the Court finds it unnecessary to define the constitutional standard beyond that it requires that every student receive a meaningful opportunity to succeed academically, socially, and civically, by receiving a comprehensive, effective, and contemporary education. As discussed more fully below, it is apparent to the Court, based upon the credited testimony and evidence, that every student is not receiving that opportunity.

a. The Inputs

As the parties agree that the Court must examine the inputs into the system of public education in order to evaluate its constitutionality, the Court begins with those. The most obvious input is funding, and the resources provided to students are also inputs, such as courses and curricula, staff, facilities, and instrumentalities of learning. These resources inevitably are tied to funding to some degree, so the Court begins there.

i. Funding

The financial resources available to Pennsylvania public school districts come from federal, state, and local funding sources. As detailed in the above findings of fact, the state appropriates a large amount to education annually and that number continues to grow. (*See* Part II.E.2, *supra.*) This funding takes many forms, ranging from basic and special education funding subsidies to contributions towards PSERS for public school employee retirements, to Pre-K Counts, to name just a few. (FOF ¶¶ 312-320.) Under the Fair Funding Formula, distribution of funds is also weighted by taking into account certain factors largely based upon student need, such as poverty and ELL students. (FOF ¶ 364.) In addition, the Commonwealth provides an additional "Level Up Funding" to the 100 lowest wealth districts. (FOF ¶ 368-370.) In short, the Commonwealth invests billions annually.

While the Court does not intend to detract from the strides made in state educational funding, the fact remains that public schools are heavily reliant on local funding. While approximately one-third of school funding revenue comes from the state, more than half generally comes from local sources, primarily in the form of local property taxes. (FOF ¶¶

William Penn School District; Panther Valley School..., Not Reported in Atl....

296, 377-379, 1875.) As a result of this heavy reliance on local funding, low-wealth districts are negatively impacted. As Dr. Kelly illustrated, districts with the same equalized millage rate can generate significantly different amounts based on property wealth and income wealth. (FOF ¶¶ 1883-1884.) While a solution may seem evident – raise taxes to generate more revenue – as witnesses for the individual Petitioner Districts, all of which would be considered low wealth, credibly testified, they already tax at higher rates than the wealthier districts, and increasing taxes has, on occasion, decreased revenue. (*See, e.g.*, FOF ¶ 479.) Moreover, the tax increases do not keep pace with rising costs. (FOF ¶ 1483.) Dr. Kelly testified that pension expenses, one of the mandated costs districts face, dramatically increased from 2008-09 to 2018-19, from 2% to 15% of districts' total expenses, a sevenfold increase. (FOF ¶ 1900.) Legislative Respondents' expert, Mr. Willis, estimated that unreimbursed pension expenses grew to approximately \$1.4 billion from 2010 to 2019, when adjusted for inflation. (FOF ¶ 2155.)

Petitioners place a lot of weight on the Costing Out Study that was commissioned at the General Assembly's behest in 2007. They cite to it as evidence of a state recognized inadequacy in funding. Their expert, Dr. Kelly, testified at length about the Costing Out Study and conducted his own calculations of adequacy targets and shortfalls since the Department ceased calculating them over a decade ago when the School Code was amended to remove the goal of meeting the adequacy targets. The Costing Out Study, and the subsequent calculation of adequacy shortfalls, even if for only three years, does demonstrate a legislative recognition that there was a funding inadequacy. The BEF Commission, after study, recommended what is known as the Fair Funding Formula, initially adopted in 2016. The existence of the Fair Funding Formula is further legislative recognition of the unmet needs of school districts, like Petitioners, and like the initial legislative response to the Costing Out Study, demonstrates a legislative awareness and understanding of inadequate education funding in low wealth districts because of the heavy reliance on local funding.

***313** The Court finds the Costing Out Study, the subsequent calculation of adequacy targets and shortfalls, the BEF Commission, the Fair Funding Formula, and the Level Up Formula, all credibly establish the existence of inadequate education funding in low wealth districts like Petitioners, a situation known to the Legislature. The Costing Out Study

calculated a \$4.38 billion shortfall as of 2005-06. (FOF ¶ 337). However, that was 18 years ago, and given the passage of time, during which there have been innovations in technology, progress in educational pedagogies, fluctuations in the economy, and changes in so many other ways, this precise figure appears to be of limited relevance today. Similarly, Dr. Kelly's calculated \$4+ billion shortfall, which is premised on the relevance and accuracy of the Costing Out Study's shortfall, suffers from the same limitations. While the Court questions the current relevance of the figures from the original Costing Out Study and, therefore, Dr. Kelly's calculations based on those figures, it does accept the overarching principle that more equitable resources, whether monetary or otherwise, are needed, as will be seen in the discussion of other inputs and outputs.

Petitioners also take issue with the so-called hold harmless provision of the Fair Funding Formula, which reduces the funding that is distributed to the districts through the Fair Funding Formula. At trial, the parties presented evidence illustrating the pros and cons of this provision, which addresses perceived funding shortfalls that would occur without the hold harmless provision in districts whose funding would be adversely affected by the Fair Funding Formula. As Mr. Splain described, hold harmless is “sort of like rearranging ... the deck chairs on the Titanic[, and w]e're all going in the wrong direction” because while “[w]e can change things around,” “if we're not changing the direction with the funding that's available, we're headed in the wrong path when it comes to meeting the needs of our students and of our schools to support those students.” (FOF ¶ 1700.) The concerns that underlie the perceived need for the hold harmless provision provide further support for the existence of the funding shortfalls.

Finally, Legislative Respondents argue local control, particularly school boards' decisions to maintain large fund balances and/or expend funds on expenses they do not deem necessary, contributes to funding inadequacies, all of which are outside the General Assembly's control. Several of the districts' financial managers testified that while there are fund balances, many of these are required by GASB rules and are not actually expendable dollars. (FOF ¶¶ 387, 392.) Thus, the amounts and existence of fund balances can be somewhat misleading. Furthermore, the fund balances are extremely important to enable the districts to continue operations when state and other funding is delayed, or there are unexpected

William Penn School District; Panther Valley School..., Not Reported in Atl....

expenses, which even Mr. Donley acknowledged, adding the General Assembly also has fund balances. (FOF ¶ 391.) For instance, rating agencies view districts with smaller fund balances as a credit risk. (FOF ¶ 393.) Mr. Przywara of Lancaster testified the state sets a cap on unassigned fund balances and that a best practice is for a district to have a minimum of 60 to 90 days' worth of an unassigned fund balance at all times to cover expenses, for example, in the event of a budget impasse, which has occurred. (FOF ¶¶ 393-397.) Without a fund balance, districts would be forced to incur interest with tax anticipation loans. (FOF ¶ 397.) William Penn's fund balance dwindled to about two days' worth of operations at one point despite routine tax increases and budget cuts. (FOF ¶ 1483.) Moreover, while Greater Johnstown projected a \$9.5 million unassigned fund balance at the end of the 2021-22 school year, Superintendent Dr. Arcurio testified half of it is earmarked for sewage system repairs. (FOF ¶¶ 609, 611.) Similarly, Shenandoah Valley's fund balance will be used to replace a decades-old boiler, purchase vans to transport special education students, and replace technology. (FOF ¶ 1148.) And absent ESSER funding, Superintendent McAndrew testified Panther Valley's fund balance would have been negative. (FOF ¶ 806.) Dr. Costello testified Wilkes-Barre was in a similar situation in 2015-16 but is in a better financial position today solely because of the "draconian" cuts the district made. (FOF ¶¶ 1271-1273.) Thus, based on the credited evidence presented, the Court does not find district fund balances contribute to funding inadequacies.

*314 What the Court's findings illustrate is local control by the districts is largely illusory. Low-wealth districts cannot generate enough revenue to meet the needs of their students, and the pot of money on which Legislative Respondents allege they sit is not truly disposable income.

ii. Courses, curricula, and other programs

There are also other inputs to consider. Legislative Respondents agree curriculum is an essential element of a thorough and efficient system of public education. With that, the Court would also include courses and other programs that are available. Legislative Respondents focus on the lists of electives and the other courses and programs some of Petitioner Districts offer. However, although some districts'

course listings can appear comprehensive, there are still deficiencies. For example, in some cases, while there is an extensive list of electives in a course guide, those electives are not always actually offered. (*See, e.g.*, FOF ¶ 886.) In other circumstances, students do not have the requisite skills or knowledge, or have not taken a prerequisite necessary to take advantage of a particular course. (FOF ¶¶ 925, 1207, 1370.) Other times, students are precluded because of limits on enrollment due to space and/or money. (*See, e.g.*, FOF ¶¶ 542, 1210.) In some districts, the same teacher is teaching multiple courses at the same time. For instance, at Lancaster, although the district offers multiple levels of IB Spanish, they are taught at the same time in the same room by the same teacher. (FOF ¶ 884.) Alternatively, some districts added new courses utilizing ESSER funds, but acknowledge that when those funds run out, the courses likely will no longer be offered. For example, Panther Valley added 37 new courses to its high school to provide students with a more rounded education and to better prepare them for the state assessments, but once ESSER funds run out, Superintendent McAndrew testified the district will not be able to sustain these courses. (FOF ¶ 689.) William Penn and Otto-Eldred also used ESSER funds to bring some of their curricula up to date. (FOF ¶¶ 1475, 1667.) Panther Valley found itself in the unusual situation of receiving funding to purchase STEM equipment for its intermediate school, but having no one able to teach the course. (FOF ¶ 688.)

The Department recognizes access to art and music as important to helping students become college and career ready, (FOF ¶ 249(I)), but many districts have had to cut or modify such programs due to funding. For example, Ms. Yuricheck testified that while Panther Valley offers "specials" like art, music, computer classes, and gym, these are the first classes that are cancelled if there are not enough substitutes to fill teacher vacancies on a given day, which is often the case. (FOF ¶ 669.) At Greater Johnstown, because the art and music classrooms were needed for kindergarten and first grade classroom space, art teachers teach from a cart. (FOF ¶ 579.) Shenandoah Valley and Wilkes Barre were forced to furlough their art teachers and have no art teachers in their elementary schools. (FOF ¶¶ 1060, 1180.) William Penn tries to promote art, music, and other special classes and in 2017, 21 of its Penn Wood High School students were inducted into the National Art Honor Society, but Ms. Harbert, William Penn's former superintendent, questioned "how many more could have made it if they had sufficient opportunities?" (FOF

William Penn School District; Panther Valley School..., Not Reported in Atl....

¶ 1408.) Due to insufficient space at one of William Penn's elementary schools, art and music is taught in the basement in a room that has an opening to a sump pump, a large drainage pipe running through it, and bundles of wires snaking across the walls. (FOF ¶ 1454.) As part of its cutting of 20% of its workforce in 2012-13, SDP eliminated several art and music teacher positions, among others, that have not been fully replaced. (FOF ¶ 1617.)

*315 Furthermore, the Court heard testimony that some districts' curricula does not align with state standards, despite Board regulations requiring same, because they lack the resources – money, personnel, and time – to revise them. (FOF ¶¶ 520, 880, 1088.) Petitioner Districts largely lack dedicated curriculum writers and instead pay their teachers to help write the curriculum. (FOF ¶¶ 497, 840, 880.) While the Department does provide some support, (FOF ¶¶ 105, 437-439), those resources are the framework, or “bones,” to which the districts must add the “meat.” (FOF ¶ 881).

Another strategy identified by the Department to help students become college and career ready is the opportunity for AP, IB, or college-level courses. (FOF ¶ 249(i).) While Legislative Respondents presented evidence that many of Petitioner Districts offer such courses, Petitioners countered with evidence that they are not widely available and are often out of reach of some students, for a variety of reasons. More than 80% of Greater Johnstown's high school students took rigorous courses of study in 2018-19, which includes AP, IB, and dual enrollment courses. (FOF ¶ 528.) However, because Greater Johnstown had to cease covering the cost of its dual-enrollment program, that number is expected to significantly decline as the cost of tuition will now fall on students' families, who live in the poorest district by median income in the state. (FOF ¶ 532.) Therefore, only students fortunate enough to be able to afford to pay the tuition have the chance to enroll in one of the various dual enrollment courses offered. (FOF ¶ 535.) Approximately 12-24 students out of the 200-225 student classes at Greater Johnstown have the opportunity to attend the dual enrollment program. (FOF ¶ 533.) At Lancaster, a little over half of McCaskey High School students took a rigorous course of study, which is just below the state average. (FOF ¶ 925.) However, while 2,400 students attended McCaskey High School in 2021, only 342 AP exams and 256 IB exams were taken, of which 119 and 166 were passing scores. (FOF ¶ 923.) As home to just 1 of 6 or 7 IB programs in the Commonwealth, Lancaster

graduated 25-30 students from the program in 2020-21. (FOF ¶ 921.) Dr. Costello of Wilkes-Barre stated that many students cannot take AP classes that may be offered “because of their track. ... [F]rom elementary school on, there was an achievement gap and we didn't have the necessary resources to get those individuals or those children up to speed so that they were able to be set up in a situation where they would be able to succeed in a math sequence that would allow for them to enter AP courses.” (FOF ¶ 1207.) Dr. Rau of Lancaster, Dr. Hite of SDP, and Ms. Harbert of William Penn echoed this sentiment. (See FOF ¶¶ 925, 1370, 1535.) Because of “learning gaps,” Ms. Harbert explained William Penn students' exposure to AP courses is limited, despite the district receiving awards in 2015 for increasing exposure to AP courses. (FOF ¶¶ 1370-1373.) Ms. Harbert testified that out of 1,200 sophomores, juniors, and seniors, approximately 130 students or less took AP classes each year. (FOF ¶ 1373.) At William Penn's Penn Wood High School, less than a quarter of seniors who took an AP or IB exam (23.97%) scored high enough on an AP or IB exam to receive credit. (FOF ¶ 1369.) At Shenandoah Valley, 26.5% of students are dual enrolled in college courses and 9.6% participate in an AP/IB program. (FOF ¶ 1101.) At SDP, although the district offers 35 rigorous courses of study and programs are offered, Dr. Hite explained it is insufficient to meet the needs of all interested students. (FOF ¶¶ 1534-1535.) In 2015, the district implemented a plan to increase AP and dual enrollment and under that plan, more than 6,700 students have enrolled such courses. (FOF ¶ 1536.) In the 2019-20 school year, there were 130,617 students attending SDP, meaning less than 5% of SDP's students are enrolled in AP or dual enrollment courses. (FOF ¶¶ 1490, 1536.) Of the SDP seniors enrolled in a rigorous course of study, slightly over a quarter (27%) scored high enough to pass and receive credit in the 2018-19 school year. (FOF ¶ 1571.) Statewide in 2019, the percentage of all students scoring 3 or higher on an AP exam, which is one type of rigorous course of study, was 68.41%. (FOF ¶ 2258.)

*316 The Department has also recognized a number of other strategies related to programming that can help students become college and career ready. Specifically, the Department recognizes the importance of early intensive resources for kindergarten to third grade focusing on literacy, mathematics, and numeracy, remediation in math and reading and other intervention services, personalized learning experiences focusing on individual needs, programs to address emotional needs, and afterschool programs.

William Penn School District; Panther Valley School..., Not Reported in Atl....

(FOF ¶ 249(c)-(f), (k).) Former Deputy Secretary Stem, for example, testified that small group instruction, tutoring programs, and reading and math specialists can improve student achievement and educational outcomes and are particularly important for students living in poverty or children in kindergarten through third grade who are in their early formative years. (FOF ¶ 412.) He also recognized the importance of addressing the social, emotional, and psychological needs of students, which can create barriers to learning. (FOF ¶¶ 421-424.) However, as discussed more fully in the section below, (*see* Part VII.(B)(2)(a) (iii)), low-wealth districts, such as Petitioner Districts, often lack the staff to implement such programs. When they do have such staff, it is not enough to meet the needs of their students. For example, instead of providing one-on-one intervention, Greater Johnstown's two reading specialists in an elementary school of approximately 1,200 students must spend the bulk of their time in larger groups. (FOF ¶ 508.) Superintendent McAndrew testified Panther Valley's three reading specialists are insufficient to allow them to follow the MTSS framework or provide small group instruction, adding "we know the students need it, and sometimes it's a coin flip on who gets it." (FOF ¶ 643.) Because it has just one psychologist, Panther Valley prioritizes evaluations of students with behavioral challenges over evaluations of students struggling academically. (FOF ¶ 646.) Superintendent Waite of Shenandoah Valley testified he has witnessed behavioral interventionists make a difference such that the student can be reintegrated into the classroom, but the district does not have enough to serve all of the students who need it because the behavioral interventionist spends half his time also serving as a social worker for the district. (FOF ¶¶ 1068-1069.) Wilkes-Barre's Superintendent Dr. Costello described how, when the district tries to implement a new program or service for its students, it is usually to the detriment of another program or service the district already offers because it does not have the ability to sustain both. (FOF ¶ 1176.)

The availability of tutoring and afterschool programs also does not meet the demand. The afterschool SHINE program at Shenandoah Valley has a limited number of students who can participate. (FOF ¶ 1113.) While Wilkes-Barre offers either a 30- or 45-minute remediation period daily to its middle and high school students, respectively, there are frequently 120 or more students in the block of time seeking assistance. (FOF ¶ 1184.) William Penn cut its afterschool tutoring program as a

result of lack of funding. (FOF ¶ 1423.) SDP's STEP program, which is funded by the City of Philadelphia, provides support services needed to some of SDP's schools, but 100 of SDP's schools still need these services, which the district cannot afford to offer. (FOF ¶ 1529.)

Another program that multiple witnesses identified as important to student success is high-quality pre-K. The Board's Master Plan for Basic Education identifies this as essential, (FOF ¶ 138), as does the Department, identifying it as a strategy to help students become college and career ready, ensure student success, and close achievement gaps, (FOF ¶ 249(a), 407). Deputy Secretary Campanini and former Deputy Secretary Stem testified high-quality preschool or pre-K is a tool that can improve attainment and achievement. (FOF ¶¶ 400, 402.) For example, Deputy Secretary Campanini testified that students who attend a high-quality program are more likely to enter kindergarten with the skills needed. (FOF ¶ 403.) Ms. Miller, who teaches kindergarten at William Penn, has witnessed the effect of the lack of pre-K firsthand, testifying that some students cannot hold a pencil or do not recognize their letters or numbers up to 10. (FOF ¶ 1426.) Greater Johnstown's Dr. Arcurio described having to show some kindergarteners how to hold books, as they were not exposed to them before. (FOF ¶ 478.) There is also objective evidence that students who do not attend pre-K are behind their peers when they begin kindergarten. According to an assessment administered to William Penn students, more than half of the entering kindergarten class in 2019-20 lacked expressive language skills, such as the oral language and vocabulary needed to express needs or carry on a conversation. (FOF ¶ 1426.) Dr. Becoats testified:

[w]e cannot control how children come to us, but what we can control is what happens within our school buildings. ... And so if a student comes to us and they are behind grade level, we have to address the needs of that student, and we have to have the resources to do that.

(FOF ¶ 1330.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

Dr. Barnett confirmed the importance of high-quality early childhood education, stating “the first five years of life are a time of learning and development where children acquire foundational skills that help them succeed in kindergarten and the early grades but also provide a foundation for lifelong success in school and beyond.” (FOF ¶ 1951; *see also* FOF ¶ 1952 (identifying numerous long-term effects).) Dr. Johnson testified that approximately half of the achievement gap observed in third grade was apparent when the student started kindergarten. (FOF ¶ 2037.) Mr. Willis also acknowledged the positive impacts high-quality early education can have. (FOF ¶ 2146.)

*317 The Department also recognizes access to a high-quality pre-K program is particularly important for children living in poverty. (FOF ¶¶ 401, 404.) Deputy Secretary Campanini explained such programs help mitigate adverse childhood experiences vulnerable children experience. (FOF ¶ 404.) Dr. Barnett testified that “it’s much easier to prevent and more cost effective to prevent the children from falling far behind than it is to remediate the problem later.” (FOF ¶ 1953.) He explained that students living in poverty generally are exposed less to “rich language interaction” at home and have fewer opportunities to develop fundamental verbal skills, gaps that can be filled with early childhood education. (FOF ¶ 1954.) Dr. Barnett further explained that children who live in poverty enter kindergarten 12 to 18 months behind an average child. (FOF ¶ 1955.)

Petitioners presented testimony that there are limited spots available in their pre-K and/or preschool programs, and such programs are not reaching all of the students who need and could benefit from them. Although more than 29,000 children participated in the state-run Pre-K Counts program as of December 2021, the Department estimates it only serves approximately 40% of the students who would be eligible. (FOF ¶¶ 111, 406.) Participation in the pre-K and/or preschool programs at the Petitioner Districts is about the same or worse. Based upon Dr. Barnett’s review of those programs, 42% of 3- and 4-year-olds in Greater Johnstown attend 1 of the programs, 31% at Lancaster, 37% at Panther Valley, 36% at Wilkes-Barre, and 43% at William Penn. (FOF ¶ 1949.) District administrators told of similar issues. Greater Johnstown, for instance, reduced its pre-K enrollment to 100 students due to financial issues, leaving a wait list for students that would otherwise be eligible. (FOF ¶ 566.) An assessment administered to students shows 62% of kindergarteners at

Greater Johnstown cannot identify at least 9 letters, 76% cannot relate at least 6 letters to their sounds, and 63% cannot count to 20. (FOF ¶ 567.) Only recently did Panther Valley begin offering a pre-K program, which is funded by a grant from the Department, for only 18 students; the district cannot expand the program due to lack of funds, space, and staff, and it needs to reapply for the grant annually. (FOF ¶ 719.) Lancaster has limited seats and has always had a waitlist of students. (FOF ¶ 949.)

While not technically curricula or courses in the traditional sense, the Court would group extracurricular activities and sports into this category. The Department recognizes these activities help students develop leadership, collaboration, and persistence skills, in addition to resiliency. (FOF ¶ 249(m).) Panther Valley, however, is one example of a district that cut numerous sports and extracurricular programs. (FOF ¶ 707.) Panther Valley’s Future Business Leaders of America club has not been cut but only because students pay fees to participate. (*Id.*) Mr. Curry also described how lack of facilities, equipment, and transportation detrimentally impacts William Penn’s athletic program. (FOF ¶¶ 1406, 1465-1466.)

The above is just a small sampling of how courses, curricula, and programs are lacking.

iii. Staffing

Another component of a thorough and efficient system of public education about which there appears to be no dispute involves teachers, specifically sufficient, well-trained, and experienced ones. Former Deputy Secretary Stem testified that a sufficient number of qualified and effective teachers and stability in the teaching force are needed to increase student success in school. (FOF ¶¶ 408, 410-411.) Dr. Noguera echoed this testimony, stating that qualified teachers are important because their subject matter expertise correlates with greater student success and teacher turnover can have negative impacts. (FOF ¶ 1976.) Yet, Superintendent McAndrew believes Panther Valley has a significant problem with turnover. (FOF ¶ 637.) While Greater Johnstown has 191 teachers, (FOF ¶ 489), the district froze teacher salaries and reduced them at one time, and has not replaced teachers as they retire due to inadequate funding, (FOF ¶¶ 501-502).

William Penn School District; Panther Valley School..., Not Reported in Atl....

In many of the Petitioner Districts, teachers have to teach multiple classes of different subjects **simultaneously**. (FOF ¶¶ 501, 1067.) For example, at Shenandoah Valley, there were more than 10 teachers conducting multiple classes of different subjects to different students at the same time. (FOF ¶ 1067.) It is beyond cavil to say that this is not effective learning.

*318 While Legislative Respondents claim Panther Valley's teachers all hold teaching certificates, some of those certifications are in subject areas that differ from the courses they teach, such as the social studies teacher hired to teach Algebra I. (FOF ¶ 631.) Lancaster faces similar staffing issues and has approximately 30 teachers with emergency certifications, while SDP has more than 700 teachers every year working under emergency certifications. (FOF ¶¶ 834, 1518.) Further, as a district with a significant number of ELL students that require additional supports, Lancaster's student-teacher ratio is between 29 and 40 ELL students per ELL teacher. (FOF ¶ 850.) At Shenandoah Valley, an ELL teacher has approximately 35 students. (FOF ¶ 1063.)

Large classes undermine student success. At Greater Johnstown, Ms. Kobal described a third and fourth grade classroom with 26 and 27 students, respectively. (FOF ¶ 518.) Its high school classes are capped at 30 students. (FOF ¶ 519.) At Panther Valley, Superintendent McAndrew expressed his frustration with consistently large kindergarten classes, explaining:

These are five-year-olds. These are kids that just learned how to use the bathroom, some of them still having issues in the bathroom. And we have one teacher in that room dealing with those students What does that look like? That looks like one student that may have an issue that day that's crying – again, they're 5 – having a bad day and the teacher goes over to address that, what are the other 28 kids getting right then? They're waiting. They're waiting for their education. ...

(FOF ¶ 662.) Superintendent McAndrew also testified that he has witnessed first graders raise their hands asking for assistance, but the teacher is not able to go over and help because of large class sizes. (FOF ¶ 661.) Elsewhere at Panther Valley, classes range from 23-24 students in grades 1-3, approximately 25 students in a class in the intermediate and junior high school, and up to 30 students per class in the high school, although some AP courses are considerably smaller. (FOF ¶¶ 658-659.) Compared to past years, class sizes at Panther Valley are larger than normal due to the deaths of two teachers that have yet to be replaced and the number of students held back as a result of remote learning and the COVID pandemic. (FOF ¶ 660.) Lancaster has similarly sized kindergarten classes as Panther Valley, with 25 students, on average, in a class. (FOF ¶ 867.) At Lancaster, elementary class average 24-27 students, but may reach as many as 28-29 students, and high school core classes typically include 25-30 students. (*Id.*) Ms. Aikens, a former teacher at Lancaster, described the struggles she faced and the resultant impact on her students:

I had a full classroom, barely had enough desks for all of my students. They had very high needs. I had language learners in there, I had students with learning disabilities, and very high social-emotional needs, and I was one person to 28 students. So the relationships that I was able to build with them were not as strong. I wasn't able to see them all every day in small group, which is best practice; and I wasn't able to assess their levels and their needs to the same depth that I was able to when I had 20 students.

(FOF ¶ 868.) To assist with lowering class sizes, Lancaster plans to utilize some ESSER funds. (FOF ¶ 875.) Shenandoah Valley made a similar decision. (FOF ¶ 1151.) Prior to 2019, Shenandoah Valley's elementary class sizes usually did not exceed 19 students, (FOF ¶ 1077), but since that time has grown with up to 27-29 students per class in grades 4-6. (FOF ¶ 1078.) Wilkes-Barre has been working to reduce class size at the elementary level (currently between 16-22

William Penn School District; Panther Valley School..., Not Reported in Atl....

students though some classes are approaching the mid-20s), and at the high school saw an increase in class size following consolidation of its high school (from 16-18 students to up to 24 students in core subjects). (FOF ¶¶ 1182-1183.) However, Dr. Costello testified this was achieved through ESSER funds and he is not sure how the district will fund the extra teachers it hired to achieve lower class sizes once that money runs out. (FOF ¶ 1183.) Faced with significant cuts in state funding in 2011, William Penn made the difficult decision to cut staff and increase class sizes up to 30 students. (FOF ¶ 1335.) It does not appear to have fully recovered as, in 2019-20, its average kindergarten class was 15-29 students, first grade class was 20-30 students, second grade class was 21-29 students, third grade class was 17-26 students, fourth grade class was 21-28 students, fifth grade class was 19-29 students, and sixth grade class was 10-29 students. (FOF ¶ 1362.) Ms. Miller, who teaches kindergarten at William Penn without the assistance of any support staff, testified her classes averaged 25 students and her “biggest challenge” was meeting the “diverse needs” of her students. (FOF ¶ 1356.) Former superintendent Ms. Harbert said large class sizes “make[] it very difficult for one teacher, one adult in that classroom,” explaining the teacher “has 28 children that have — may have 28 different needs in various ways, and so for [the teacher] to be able to address the needs of those students and then make sure that [the teacher] is meeting them at their level and giving them what they need academically is very difficult.” (*Id.*)

*319 Legislative Respondents presented evidence of student-to-teacher ratio and student-to-personnel ratio that, on their face, appear lower. (*See, e.g.*, FOF ¶¶ 517, 663-664, 869-872, 1076, 1181, 2139.) However, those numbers are misleading. As Mr. Przywara of Lancaster testified, student-teacher ratios are **not** the same as class sizes because teacher counts include non-regular classroom teachers, such as those who teach ELL students and Title I students, as well as atypically sized classes, such as self-contained special education classrooms, where there are few students. (FOF ¶ 869; *see also* FOF ¶¶ 873, 1076, 2139.)

Petitioners presented credible evidence that smaller class sizes can improve student achievement. The Department even provides Ready-to-Learn Block Grants to promote, among other strategies, smaller class sizes. (FOF ¶ 314; *see also* FOF 249(e) (identifying as a strategy personalized learning experiences focusing on individual needs).) Numerous expert witnesses also testified as to its

importance. For instance, Dr. Noguera credibly testified smaller class sizes, particularly in core subject areas, improve student achievement especially for economically-disadvantaged students and minority students who likely need individualized support. (FOF ¶¶ 1980-1981.) Dr. Koury likewise acknowledged that research supports the conclusion that smaller class sizes benefit economically-disadvantaged and minority students. (FOF ¶ 2157.) Dr. Johnson also identified smaller class sizes as one of the factors that have positively impacted student achievement. (FOF ¶¶ 2040, 2042.)

Furthermore, the Court heard extensive credible testimony from educational professionals and experts as to how other professional staff, such as administrators, guidance counselors, social workers, nurses, psychologists, and other support staff, including instructional aides, interventionists, reading specialists, and tutors help students succeed. As an example, former Deputy Secretary Stem testified that reading and math specialists improve student achievement and educational outcomes. (FOF ¶ 412.) In addition, there was evidence that low-income students often require more support, so an adequate number of counselors is needed to meet those needs. (FOF ¶ 424.) In its ESSA Plan, the Department identified the importance of employing a sufficient number of effective teachers to meet student needs, (FOF ¶ 249(b)), and also professionals in math and reading to provide remediation services and other types of intervention, (FOF ¶ 249(d), (f)), school counselors, (FOF ¶ 249(g)), and school librarians, (FOF ¶ 249(h)), as a few of the strategies that could improve student outcomes. Dr. Noguera also credibly testified that reading specialists help students living in poverty or rural areas who lack certain resources at home and counselors, school psychologists, and social workers can provide students with the social and emotional support they need to succeed. (FOF ¶¶ 1971-1973.) Dr. Noguera also explained that professionals, such as truancy officers, who work with chronically absent students and to increase attendance, are important for combatting adverse educational outcomes. (FOF ¶ 1979.) The Department also recognizes programs designed to increase school attendance serve as a strategy to help prepare students to be college and career ready, ensure student success, and close achievement gaps. (FOF ¶ 249(j).)

While it is true that there was testimony that several of the districts have some of these personnel, there was also

William Penn School District; Panther Valley School..., Not Reported in Atl....

testimony that it was the bare minimum required by law, of an insufficient quantity to actually meet student needs, or was funded through outside sources or one-time ESSER funds, which districts have been cautioned against using for such purposes. Dr. Arcurio, for example, acknowledged Greater Johnstown has the number of special education teachers it is required to have given its student population, but it does not have enough to provide the more individualized support some students need, resulting in those students being “sentence[d]” to special education, although they could be removed from special education with that extra assistance. (FOF ¶ 487; *see also* FOF ¶ 632.) Similarly, Greater Johnstown, Wilkes-Barre, William Penn, and SDP have guidance counselors, but the student-to-counselor ratio is in the mid to high hundreds or higher. (FOF ¶¶ 504, 1177, 1419, 1525.) Likewise, Lancaster's 20 Student and Family Resource Specialists, who are social workers, have a caseload of 500-600 students each, and its 11 psychologists carry caseloads of around 1,000 students each. (FOF ¶¶ 857, 859.) Panther Valley has three reading specialists but needs to figuratively flip a coin to determine which students get access to that service. (FOF ¶ 643) Shenandoah Valley likewise has an elementary assistant principal doubling as a school psychologist and an elementary principal who assumed the responsibilities of a reading specialist, (FOF ¶¶ 1066, 1153), and William Penn has one principal covering two elementary schools, (FOF ¶ 1338). Panther Valley's elementary principal is also a school counselor, as well as being responsible for coordinating federal grants, and the principal at its intermediate school handles safety and security districtwide. (FOF ¶ 642.)

*320 In addition, William Penn has zero reading or math specialists, (FOF ¶ 1353), and Otto-Eldred has no reading specialists, (FOF ¶ 1654). Greater Johnstown has no licensed social workers and uses grants to fund six non-licensed staff to provide some services. (FOF ¶ 507.) Just as vital courses and curricula are often lacking, librarians in Petitioner Districts are few. Greater Johnstown has two librarians, one at its elementary school and one split between its middle and high schools. (FOF ¶ 511.) The second librarian also serves as the middle school's reading interventionist. (*Id.*) SDP has certified librarians at just 6 of its more than 200 schools. (FOF ¶ 1528.) Panther Valley has no librarian, (FOF ¶ 650); rather, the intermediate school library is overseen by a Title I reading teacher, and a group of sixth grade students help shelve books, (FOF ¶ 708.) Shenandoah Valley has no librarian. (FOF ¶ 1073.)

Out of necessity, some of the districts have become resourceful and utilize outside funding and donations to fill some of the gaps in staffing. An anonymous donor funds a college advisor at Panther Valley. (FOF ¶ 667.) St. Luke's Hospital provides various funding and other resources to Panther Valley, including a grant for a one day per week social worker and, in conjunction with another local business, St. Luke's helps fund a family development specialist. (FOF ¶¶ 648-649.)

Some districts also took advantage of the ESSER funds to fill some of their staffing gaps. For instance, Otto-Eldred hired a social worker and two behavior specialists using ESSER funds. (FOF ¶ 1657.) William Penn was able to afford to put a counselor in each of its schools with ESSER funds. (FOF ¶ 1349.) However, the ratio of students to counselors at William Penn will still be between 320:1 to 350:1. (FOF ¶ 1350.) Its ratio of students to psychologists is even higher – 830:1. (FOF ¶ 1351.) Until ESSER funds became available, the ratio of students to social workers at William Penn was 2,500:1. (FOF ¶ 1352.)

Any effect of the hiring may also be short-lived. Dr. Becoats testified he is not sure William Penn will be able to maintain some of the staff it hired with ESSER funds once those funds expire in a few years. (FOF ¶ 1349.) Districts across the state faced a similar situation in 2011 when an influx of federal stimulus expired, causing the state to cut BEF funding. (*See* FOF ¶¶ 1336, 1658.) As a result of those cuts, numerous districts were faced with making significant cuts, such as Lancaster. (FOF ¶ 864.) William Penn also made drastic cuts that year, eliminating several positions, which resulted in increased class sizes. (FOF ¶ 1335.)

Perhaps cognizant that history could repeat itself, the Department and President Pro Tempore admonished districts to avoid using ESSER funds for recurring costs. (FOF ¶¶ 308-310.) Notwithstanding, some districts still felt they had no choice if they were to meet the immediate needs of their students, especially in the wake of the COVID pandemic. (FOF ¶ 1034.) Absent an increase in funding, Mr. Przywara of Lancaster foresees a financial “cliff” when ESSER funds expire, which could lead to “draconian” cuts two times worse than what occurred in 2011 when the federal stimulus money expired and the state reduced BEF. (FOF ¶ 1035.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

Low-wealth districts across the state are forced to make these difficult decisions because, although the Education Clause imposes a duty on the General Assembly to maintain and support a thorough and efficient system of public education, PA. CONST. art. III, § 14, as discussed, the system is heavily dependent on local tax revenue, which the lower wealth districts cannot generate like their more affluent counterparts. (See Part VII.B.2.a.i, *supra*.)

iv. Facilities

Another component of a thorough and efficient system of public education that is generally not in dispute is the need for facilities. However, it is not enough that the facilities in which students learn are “generally safe,” as Legislative Respondents contend. (President Pro Tempore’s Br. at 42-43; see also Speaker’s Br. at 46.) Rather, they must be safe, and adequate. The Department and State Board have identified adequate facilities as being conducive to learning. (FOF ¶ 430.) Dr. Noguera also testified that quality and cleanliness of facilities are important for academic achievement. (FOF ¶ 1982.) Yet, credible testimony was presented to the Court of makeshift classrooms set up in hallways, closets, and basements, (FOF ¶¶ 579, 990-992, 1210, 1252, 1454); insufficient numbers of nearby restrooms to serve students, (FOF ¶¶ 583, 765); and schools without functioning heat and air conditioning. (FOF ¶¶ 586, 763-764, 994, 1279, 1452.) For instance, Dr. Arcurio described Greater Johnstown High School as a “pizza oven” as it does not have air conditioning. (FOF ¶ 586.) Students at Panther Valley have to navigate a severely cracked wheelchair ramp, depicted below: (FOF ¶ 760; PD-00001-0009.)

*321 Tabular or graphical material
not displayable at this time.

Depicted below, a dry erase board appears to partition one classroom into two at a Wilkes-Barre school:

Tabular or graphical material not
displayable at this time.

(FOF ¶ 1252.) Also at Wilkes-Barre, a closet was converted into a space for occupational therapy:

Tabular or graphical material not
displayable at this time.

(*Id.*)

Dr. Arcurio also described how Greater Johnstown Middle School students use classroom tables to create lab space to conduct STEM/STEAM and science experiments. (FOF ¶ 585.) Panther Valley likewise improvises to provide its students with lab tables, utilizing “different tables that [the students] can do experiments on.” (FOF ¶ 767.) While Panther Valley’s library at its high school was converted into a STEM lab and media center, which was possible because of local grants, Panther Valley’s science labs are “much older,” “outdated,” and “not as nice or fitted as the other buildings.” (FOF ¶¶ 688, 767.) These are just a few examples of inadequate facilities.

In addition, the Court has concerns whether all the facilities are, in fact, safe. Many of Petitioner Districts, as well as SDP, have leaking roofs. (See, e.g., FOF ¶¶ 758-759, 773, 988, 993, 1243, 1253, 1254, 1451, 1583, 1587.) Ms. Yuricheck testified “in [her] first grade classroom[,] you could see the sky. There was a hole in the ceiling ... that you could literally look up and see the sky.” (FOF ¶ 759.) In addition, during significant rainfall, someone at Panther Valley’s elementary school needs to flip a switch for a pump in the courtyard to prevent the school from flooding. (*Id.*) SDP also has had to deal with lead paint and mold remediation and asbestos abatement. (FOF ¶¶ 1584-1588.) Student Petitioner S.A. testified about mold in the lunchroom, a leaking roof, chipping paint, water that was non-potable, and the lack of any climate control in his classes, which caused health complications. (FOF ¶ 1587.) Student Petitioner Mr. Horvath had similar experiences at Wilkes-Barre, describing a chipping façade, an opening in

William Penn School District; Panther Valley School..., Not Reported in Atl....

the ceiling, rodents and roaches, a lack of working water fountains, bathrooms he avoided using due to disrepair, and temperatures that were not regulated in the building. (FOF ¶ 1279.) Furthermore, before consolidating three of its high schools, Wilkes-Barre had to erect fencing around the perimeter of two of its buildings to shield students from falling masonry. (FOF ¶ 1235.)

The Court is not persuaded by the rosy pictures posted on Petitioner Districts' websites or portrayed to the community in communications. Just as Legislative Respondents focus on the positives of the districts, it is understandable that the districts also focus on the positive when reaching out to their students and parents, but this does not mean there are no issues, or that they are unaware of the issues their districts face as they deal with them on a daily basis. As Superintendent McAndrew of Panther Valley explained, the district recorded the videos of its schools over the summer, while the schools were "at their cleanest," or depicted the newest wing of the school because they wanted to encourage students to return. (FOF ¶¶ 771, 773.) He further explained:

*322 [O]ur job is to promote and get morale and have our kids here and be positive. You know, we're not showing them things that look at this science lab that has nothing and has, you know, cables coming down from the – you know, from the ceiling or our roof leaking or those type of things. We try to keep it positive[] because that's what we do. That's what we do as educators. There's negative, but we promote the positive.

(FOF ¶ 773.) While there certainly are new facilities at some of the districts, there are many that need repair, but the districts lack the funding to do so.

v. Instrumentalities of learning

Finally, instrumentalities of learning are an essential element of a quality public education in the Commonwealth, though

they are not as rudimentary as Legislative Respondents suggest. In the 21st century, students need more than a desk, chair, pen, paper, and textbooks, (some of which are outdated in Petitioner Districts) for such items do not constitute a thorough and efficient system of public education under any measure. Education must evolve if students are to be provided a meaningful opportunity to succeed academically, socially, and civically. That is the only way students will meet the ever-changing needs of the modern-day workforce and become productive members of society, as our forebearers had envisioned. The Department's ESSA Plan recognizes that "meaningful access to cutting-edge technology is a prerequisite for success in today's classroom and in the 21st century economy." (FOF ¶ 250.) In addition, the Board's Master Plan for Basic Education recognizes the importance of technology and expresses concern that "differences in infrastructure and capabilities" in the Commonwealth's school districts "will lead to opportunity gaps for some students that will have lasting ramifications for the individuals and their communities." (FOF ¶ 137.) As a result, the State Board has urged the Department to "monitor unequal investments in technology and infrastructure that could widen the college career readiness gap for some students." (*Id.*) The superintendents also testified about the importance of their students having access to technology and labs, and other specialized equipment so they can compete in the workforce. (*See* FOF ¶¶ 681, 1727)

Before the COVID pandemic, many of the Petitioner Districts did not have a sufficient number of computers for their students. Greater Johnstown, for instance, carted Chromebooks from classroom to classroom and, if additional Chromebooks were needed at the middle or high school building, maintenance staff would transport them between buildings. (FOF ¶ 588.) When the pandemic hit and schools were ordered shuttered, the SDP, through donations from philanthropic organizations in Philadelphia, initially ordered 40,000 Chromebooks for students and worked with Philadelphia and other organizations to provide connectivity. (FOF ¶¶ 1595-1596.) It subsequently purchased another 100,000 Chromebooks. (*Id.*) Many districts that were not one-to-one with laptops or tablets before the pandemic, like Greater Johnstown, are presently, due to ESSER funds, but now districts are faced with other challenges. Dr. Arcurio testified to being "ke[pt] up at night" because she does not know what Greater Johnstown will do once ESSER funds expire, as it does not have the money to otherwise maintain or

William Penn School District; Panther Valley School..., Not Reported in Atl....

replace the Chromebooks. (FOF ¶ 589; *see also* FOF ¶ 779.) And Panther Valley Superintendent McAndrew and Lancaster Superintendent Dr. Rau described the challenges students and staff had in transitioning to one-to-one technology without any training. (FOF ¶¶ 780, 909-910.)

*323 Superintendent McAndrew also described an unreliable internet connection in Panther Valley's buildings. (FOF ¶ 783.) The district received a grant and is using some of its ESSER funds to improve its Wi-Fi but because it lacks sufficient maintenance staff, it has been unable to complete the upgrade. (*Id.*) Greater Johnstown, meanwhile, used ESSER funds and a grant from T-Mobile to purchase Wi-Fi hotspots for students who lacked internet access, but the district was not able to purchase enough to meet all students' needs. (FOF ¶ 597.) Lancaster also relied upon a donation by the Steinman Foundation to provide internet services to students without access. (FOF ¶ 910.) William Penn expects to receive a \$2.8 million grant from CARES-Delco to fund technology and infrastructure updates, and Dr. Becoats testified that the district has "applied for grants and will continue to apply for grants ... [to] continue to address the pandemic." (FOF ¶ 1487.)

Moreover, there was evidence that even one of the most basic instrumentalities of learning – textbooks – are not up to par. Multiple Petitioner Districts testified to possessing classroom sets of textbooks that multiple classes share, meaning students who may need to take a textbook home cannot do so. (FOF ¶¶ 520, 775, 878, 1474.) Another consequence of not having enough textbooks for each student to have his or her own is that teachers expend additional time and money, sometimes their own money, obtaining other resources to supplement their lessons. (FOF ¶¶ 520, 776, 878, 1474.) Not only are textbooks in short supply, but they are also, in some circumstances, severely outdated. Ms. Yuricheck utilizes a textbook for her social studies class that lists Bill Clinton as the last president. (FOF ¶ 775.) Lancaster's physics textbook is 12 years old, and some of its high school textbooks list countries that no longer exist. (FOF ¶ 879.) Mr. Splain testified the high school grammar textbooks at Otto-Eldred are so old that one has his name in it from when he was a student. (FOF ¶ 1666.) Because of their age, the textbooks are also tattered and worn. (FOF ¶¶ 775, 1474.) For instance, Student Petitioner Mr. Horvath testified that several pages of some of his textbooks were missing. (FOF ¶ 1281.) Otto-Eldred rebinds its books "quite often." (FOF ¶ 1666.) Also

because of their age, the textbooks are not compatible with online learning, which resulted in Ms. Yuricheck scanning in every page of her textbook with her phone and uploading it to Google Classroom for students to have access. (FOF ¶ 777.) In short, instrumentalities of learning, especially technology, are not a one-and-done but are continually evolving components of a thorough and efficient system of public education in which resources are necessary.

The evidence demonstrates that low-wealth districts like Petitioner Districts, which struggle to raise enough revenue through local taxes to cover the greater needs of their students, lack the inputs that are essential elements of a thorough and efficient system of public education – adequate funding; courses, curricula, and other programs that prepare students to be college and career ready; sufficient, qualified, and effective staff; safe and adequate facilities; and modern, quality instrumentalities of learning. The COVID pandemic highlighted these deficiencies, which the Department recognizes. (FOF ¶ 454.) When Petitioner Districts, which were already experiencing financial difficulties, were forced to close and rely upon online learning for an extended period of time, they were unable to transition quickly and effectively due to the lack of technology that was sufficient to meet their students' varying needs. (*See, e.g.*, FOF ¶¶ 455, 596-597, 780, 906-907, 1136, 1472, 1597, 1855.) This created both short-term and long-term problems, which illustrate the compounding nature of underfunding. For example, students in the poorer districts were those most likely to be without access to a laptop and the means to utilize it at home, including reliable Wi-Fi. (FOF ¶¶ 455, 596-597, 780, 906-907, 910, 1136, 1472, 1597.) Other students were thrust into online learning when neither they nor their family had familiarity with the technology they were now forced to use. (FOF ¶¶ 780, 909-910.) The high-need students who disproportionately attend these low-wealth districts, such as ELL students, students with disabilities, and economically-disadvantaged students, lost access to important support and services, as well as valuable learning and socialization opportunities, thereby exacerbating the achievement gaps that already were evident. (FOF ¶¶ 599, 781, 911-912, 1136, 1260, 1473, 1598, 1600, 1659.) Aside from the immediate effect on the students who were deprived of much needed support and services, the students and districts they attend face a difficult road to recovery. As numerous superintendents testified, but for the ESSER funds, many of the programs that were saved or added, (*see, e.g.*, FOF ¶¶ 689, 874, 882, 912, 1031, 1185,

William Penn School District; Panther Valley School..., Not Reported in Atl....

1266, 1475, 1667), the staff that was retained or welcomed, (*see, e.g.*, FOF ¶¶ 504, 506, 512, 521, 1183, 1266, 1269, 1349, 1352, 1473, 1657), the facilities that were repaired and developed, (*see, e.g.*, FOF ¶¶ 606, 995, 1150, 1244, 1266, 1456), and technology that was provided to students or improved upon, (*see, e.g.*, FOF ¶¶ 589, 591, 783, 790, 907-908, 1030, 1139, 1150, 1257, 1470, 1659), would still be lacking, and will likely be lost when those funds run out if changes to the funding system currently in place are not made, (*see, e.g.*, FOF ¶¶ 589, 598, 689, 1035, 1261, 1349). This will create the ironic situation that just as the full effects of the loss of learning and socialization suffered by students in low-wealth districts continue to manifest, (*see, e.g.*, FOF ¶¶ 599, 781, 912, 1260, 1473), the funding to hire the staff or put into place necessary programs to combat these problems will not be available.

b. The Outcomes

*324 Legislative Respondents argue that the Court's inquiry ends once it examines inputs. They assert the Education Clause is silent as to outcomes, and, because there are a variety of economic, community, family, and personal factors that exist outside of school that impact learning, it would be improper to gauge whether the General Assembly is meeting its obligations based on outcomes.

The Court cannot agree. Whether the system of public education is “thorough and efficient” and “serv[ing] the needs of the Commonwealth,” PA. CONST. art. III, § 14, necessarily requires an examination, not just of the inputs, but also the outcomes. Otherwise, there would be no way to gauge the adequacy of the system, and whether it is working to provide the opportunity to succeed to all students. *See, e.g., Morath*, 490 S.W.3d at 863 (“Because the adequacy standard ‘is plainly result-oriented,’ [] the proper focus on a constitutional adequacy analysis should be on outputs that measure student performance.”) (quoting *Neeley v. W. Orange-Cove Consol. Indep. Sch. Dist.*, 176 S.W.3d 746, 788 (Tex. 2005) (footnote omitted));¹⁰⁵ *Abbeville Cnty. Sch. Dist.*, 767 S.E.2d at 171 n.17 (finding outputs are “highly relevant” and necessary to determine whether students received the opportunity for a minimally adequate education under South Carolina's education clause)).¹⁰⁶ Moreover, as the Supreme Court of South Dakota explained, Petitioners “still must show the

correlation between funding levels and a constitutionally adequate education. Thus, educational results are also a factor in determining constitutionality of the system.” *Davis*, 804 N.W.2d at 633-34. In addition, to the extent evidence demonstrates that subgroups of certain students are not performing at a sufficient level, this, too, can serve as evidence that the system is broken and not meeting the constitutional mandate. *See Morath*, 490 S.W.3d at 858 (“[T]he performance of student subpopulations, especially a large group such as economically[]disadvantaged students who comprise more than 60% of students, is relevant to whether the system as a whole is constitutionally adequate.”).¹⁰⁷

*325 There are outcomes that assist the Court in determining whether every student is receiving a meaningful opportunity to succeed academically, socially, and civically, which require that all students have access to a comprehensive, effective, and contemporary system of public education. These include the statewide assessments, the PSSAs and Keystone Exams; PVAAS, which measures growth; national measures, such as NAEP; high school graduation rates; and postsecondary attainment rates, among others.

i. State Assessments

The first outcome that the Court considers are the state assessments – the PSSAs and Keystone Exams. During trial, extensive evidence was presented about the state assessments, and the parties and their experts gave varying weight to their importance. While Petitioners argue that state assessments are perhaps the best measure of whether the system is working, Legislative Respondents argue they are not relevant to the constitutional inquiry.

Based upon the evidence presented, that the state assessments have value cannot legitimately be challenged. These assessments were established at the direction of the General Assembly to the State Board, to develop a method of “measur[ing] objectively the adequacy and efficiency of the educational programs offered by the public schools of the Commonwealth.” (FOF ¶ 170 (quoting 24 P.S. § 2-290.1).) As previously comprehensively described in the findings, the assessments were carefully developed in consultation with educators, students, parents, and citizens. (FOF ¶ 181.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

They are also subject to intensive and rigorous testing to ensure validity and reliability. (FOF ¶ 188.) Annually, the PSSAs are subject to a 15-step development cycle, which ranges from developing new items, reviewing them for bias, fairness, and sensitivity, field testing, reviewing field test results, and modification. (FOF ¶¶ 190-191.) Items are reviewed by content specialists and editors before going to a content committee comprised of educators from across the state and then a Bias, Fairness, and Sensitivity Committee. (FOF ¶¶ 192-196.) Items are then field tested on a PSSA exam, although those items are not scored. (FOF ¶ 197.) After field testing, some items are “flagged” by development specialists and psychometric specialists and further scrutinized by another committee of Pennsylvania educators. (FOF ¶¶ 198-199.) There is also an extensive procedure called bookmarking, which is used to determine the cut scores for the four levels of performance – advanced, proficient, basic, and below basic. (FOF ¶¶ 201-203.) The bookmarking process uses the same process as used to establish cut scores for NAEP and is validated by the Center for Assessment, a nationally recognized assessment organization. (FOF ¶¶ 202, 204.)

Legislative Respondents rely on their expert's testimony, Dr. Rossell, who testified that in her opinion, standardized tests, including the PSSAs, are designed to generate bell curves with half of the test takers scoring above the midpoint and the other half below it. (FOF ¶¶ 2080-2081.) However, the Court does not credit this testimony for multiple reasons. (FOF ¶ 2083.) First, Dr. Rossell admitted she was not familiar with the 15-step development process credibly described in detail by former Deputy Secretary Stem or with some of the statistical terminology. (FOF ¶¶ 190-204, 2083-2085.) Yet, she testified that she was able to “eyeball” a “rough bell curve.” (FOF ¶¶ 2081, 2084.) Based on her experience and on taking examinations herself, she also opined that there was a curve because “no one would respect the test” if everyone scored high or low. (FOF ¶ 2082.) However, this is not supported by former Deputy Secretary Stem's or Executive Director Molchanow's credible testimony that the tests are standards-based and criterion-based, and not a normed test that would generate a curve. (FOF ¶¶ 173, 205.) According to their testimony, the tests were designed so that “you could have ... high percentages of students that are below basic or you could have very high percentages that are advanced as well” and “every student has the ability to achieve the highest performance level expected because

they are aligned to a concrete standard.” (FOF ¶ 173.) Given their experience at the Department, knowledge and understanding of the process of design, and the consistency of former Deputy Secretary Stem's and Executive Director Molchanow's testimony with one another, the Court finds their testimony regarding the exams' design more credible than that of Dr. Rossell, who is not a psychometrician and did not consult with any psychometricians involved in the design or with the Department. (FOF ¶ 2083.)

*326 In addition, the state assessments serve a variety of purposes and are used by a variety of audiences, including students, parents, educators, employers, and the general public, as well as by policymakers including the General Assembly, the Department, and the State Board. (FOF ¶ 180.) Pursuant to its regulations, the State Board uses the state assessments to measure whether a student is achieving proficiency. (FOF ¶ 171 (citing 22 Pa. Code § 4.51(a)(1)-(2)).) The Department believes the assessments are an important method of measuring the system's effectiveness and “shed an important light on equity within the educational system.” (FOF ¶ 215.) The state assessments are the sole criteria used by the Commonwealth when designating “low-achieving schools,” after which the students are eligible to leave those schools with an “opportunity scholarship.” (FOF ¶¶ 220-221.) As part of the evaluation process, the Department uses these assessments for designating schools as CSI, ATSI, and TSI. (FOF ¶ 248.) The assessments are also used to evaluate teachers, administrators, and charter schools. (FOF ¶ 222.) Moreover, proficiency on the state assessments is built into the state's ESSA Plan as a goal, (FOF ¶¶ 228, 234-236), and is one of many measures in the Future Ready PA Index, (FOF ¶ 270). Proficiency on the state assessments is one of the pathways in Act 158 for students to graduate high school. The fact that the Commonwealth so broadly utilizes these assessments undercuts Dr. Rossell's testimony that they are not reliable indicators of whether a student is receiving an adequate education. (FOF ¶ 2078.)

A review of the results of the PSSAs and Keystone Exams shows that, across the state, students are not reaching “proficiency,” defined as “satisfactory academic performance,” which “demonstrates an adequate command of and ability to apply the knowledge, skills, and practices represented in the Pennsylvania standards.” (FOF ¶¶ 184, 2215-2216.) From 2015-19, nearly 325,000 students of the approximate 870,000 students taking the PSSAs and

William Penn School District; Panther Valley School..., Not Reported in Atl....

Keystone Exams each year were not proficient or advanced in ELA/literature. (FOF ¶ 2215.) Almost half a million students did not meet proficiency or higher on the math/algebra PSSAs and Keystone Exams for each of the same five years. (FOF ¶ 2216.) These students tested at “basic,” meaning they “demonstrate[d] a partial command of” ELA/literature or “below basic,” meaning they “demonstrate[d] a minimal command of” ELA/literature. (FOF ¶¶ 185-186, 2215.)

The results in Petitioner Districts and other low-wealth districts students are scoring proficient at even lower rates, illustrating significant achievement gaps between students who attend those districts and students who attend a more affluent district, as well as achievement gaps between other student subgroups. As Dr. Kelly credibly testified, students who attend one of the districts in the poorest quintile test significantly lower on state assessments than those who attend richer districts that can afford more educational resources. (FOF ¶ 2217) The gap between students in the lowest wealth districts and highest wealth districts scoring proficient or advanced is 24.5 percentage points in science and biology (56.5% versus 81.0%), 28 percentage points in ELA/literature (49.4% versus 77.4%), and 30.8 percentage points on math and algebra (31.2% versus 62.0%). (*Id.*) There are also large gaps between the second poorest quintile and the wealthiest district. (*Id.*) Dr. Johnson similarly opined that there is a gap between the most affluent and least affluent districts, with students in the most affluent performing two to three grade levels above those in the least affluent. (FOF ¶¶ 2048, 2218.) Nearly 80% of schools designated CSI are from the poorest quintile districts. (FOF ¶ 2227.)

The above statistics were compiled using data from districts statewide. Petitioner Districts and SDP, the largest district in the Commonwealth, face similar gaps. No more than 35% of students at Greater Johnstown and SDP scored proficient or advanced on the ELA PSSA during the five-year period between 2015 and 2019. (FOF ¶ 2221.) Statewide during the same time period, approximately 60% of students scored proficient or advanced on the same exam. (*Id.*) On the math PSSAs in 2019, approximately 9 out of every 10 students in Greater Johnstown and William Penn scored basic or below basic. (*Id.*) The other Petitioner Districts fared not much better: 8 out of 10 students at Lancaster, Panther Valley, and Wilkes-Barre scored basic or below basic. (*Id.*) Of the Petitioner Districts, Shenandoah Valley had the smallest

percentage of students scoring basic or below basic; yet, 7 out of every 10 students did not score at proficient or better. (*Id.*) Statewide, just 42.37% of students scored proficient or advanced on the 2019 PSSA in math. (*Id.*)

*327 Students can take the Keystone Exams more than once if they do not achieve proficiency, so one would expect those results to be better, but they are not. (FOF ¶ 2222.) On the biology Keystone Exam, 59-66% of students statewide scored proficient or advanced between 2015 and 2019. (*Id.*) With a few exceptions, the percentage of students attending Petitioner Districts who scored proficient or advanced was about half the rate of the state. (*Id.*) This trend is similar for the Algebra I Keystone Exam. (*Id.*) And while percentages trend upwards on the Literature Keystone Exam, with three-quarters of students scoring proficient or advanced statewide, only approximately half of the students in Petitioner Districts did so. (*Id.*) As a result of their performance, a number of schools within the Petitioner Districts find themselves labeled as “low achieving” by the Commonwealth, and some are designated as CSI or A-TSI. (FOF ¶¶ 2225-2226.)

There is also evidence of achievement gaps based on race within the Commonwealth. Dr. Johnson described a two-grade level gap between White and Black students. (FOF ¶ 2050.) He attributes the achievement gap to the higher concentration of minority students of low-wealth districts that lack the financial resources to support those students’ needs. (FOF ¶ 2049.) Statewide, Black students scored advanced or proficient at a rate 34% lower than their White peers in ELA, 37% lower than their White peers in math, and 36% lower than their White peers in science on the 2018-19 state assessments. (FOF ¶ 2235.) Of Hispanic students, only 42.39% scored proficient/advanced in ELA, 24.54% in math, and 42.36% in science, compared to the statewide average for all students of 62.98% in ELA, 45.52% in math, and 64.28% for science. (FOF ¶ 2234.) Because of these existing gaps, the Department set lower goals in its ESSA Plan for future achievement for children of color than it set for children who did not fall into a subgroup. (FOF ¶¶ 2229-2230.)

Economically-disadvantaged students, ELL students, and students with disabilities also struggle to attain proficiency on the state assessments. For instance, in 2018-19, fewer than half of all economically-disadvantaged students scored advanced or proficient in ELA and science, and less than one third scored advanced or proficient in math, trailing at least

William Penn School District; Panther Valley School..., Not Reported in Atl....

15 percentage points behind the statewide average in every subject area. (FOF ¶ 2237.) Economically-disadvantaged students saw lower rates of advanced or proficient scoring by 16% in ELA, 17% in math, and 16% in science than their non-economically-disadvantaged peers. (*Id.*) For students with disabilities, only 27.69% scored advanced or proficient in ELA, 19.17% in math, and 32.29% in science. (FOF ¶ 2238.) Of ELL students, 25.78% scored advanced or proficient in ELA, 18.72% in math, and 28.95% in science. (*Id.*) Statewide between 2015 and 2019, approximately 40-44% of historically underperforming students scored proficient or advanced on the ELA PSSA and approximately 22%-25% on the math PSSA. (FOF ¶ 2239.) On the Keystone Exams during the same period, 42%-48% of historically underperforming students scored proficient or advanced on the Algebra I Keystone, 52%-59% on the Literature Keystone, and 37%-44% on the Biology Keystone. (FOF ¶ 2240.)

The evidence presented did not show students who attend charter schools fare any better, especially those attending cyber charter schools. Former Deputy Secretary Stem testified that outcomes of students attending cyber charter schools are not only, on average, lower than traditional public schools but lower than the brick-and-mortar charter schools. (FOF ¶ 2257) Dr. Kelly concurred in this conclusion, adding that this is especially true of economically-disadvantaged students. (FOF ¶¶ 1929, 2255) The testimony of Dr. Flurie of CCA, a cyber charter school in the Commonwealth, supports these conclusions. In 2019, only 40.7% of CCA students scored proficient or advanced on the ELA PSSA, 50.5% scored proficient or advanced in science, and only 11.5% scored proficient or advanced in math. (FOF ¶ 1775.) On the other state assessment, the Keystone Exams, in 2019, 48% of CCA students scored proficient or advanced in literature, 28.1% in biology, and 28.6% in algebra. (FOF ¶ 1776.) Student performance was relatively consistent at CCA and, for all but maybe one year, CCA was designated by the Department as a CSI school. (FOF ¶¶ 1775-1777.)

*328 Legislative Respondents dispute that the difference in achievement is related to wealth and, instead, suggest it is attributable to other factors outside of the districts' control. Their expert, Dr. Rossell, for instance, testified that economically-disadvantaged children typically score lower on standardized tests than non-economically-disadvantaged students, (FOF ¶ 2079), but attributed the different outcomes to personal, family, and community factors, (FOF ¶ 2078.)

Several other experts testified to this effect, as well. (*See* FOF ¶¶ 1985, 1962, 2017, 2030, 2196.) Dr. Noguera testified that out of school factors can explain achievement variations, (FOF ¶ 1985), and cannot be entirely eliminated, but that great progress has been made to dramatically reduce educational disparities caused by poverty, (FOF ¶ 1988). This is supported by the evidence that economically-disadvantaged students who attend a wealthier district outperform their peers in less wealthy districts by 16 to 20 percentage points. Dr. Kelly's analysis, which the Court credits, showed that 62% of economically-disadvantaged students meet state ELA/literature standards in the wealthiest quintile compared to only 42.6% in the poorest, 43.1% meet math/algebra standards in the wealthiest quintile compared to only 24.5% in the poorest, and 67.2% meet science/biology standards in the wealthiest compared to only 51% in the poorest. (FOF ¶¶ 1917, 2242.) Performance improves across each of the quintiles. (FOF ¶¶ 1917, 2243.) The wealthier the quintile, the more likely economically-disadvantaged students are to graduate from college. (FOF ¶¶ 1922, 2278-2279.) These findings are not limited to the subset of economically-disadvantaged students, but also hold true for other historically underperforming student subgroups, which include ELL students and students with disabilities. (FOF ¶¶ 1920, 2238-2240.) For example, historically underperforming students in high-wealth districts outperform their peers in low-wealth districts, 45.1% to 25.2%. (FOF ¶ 2047.)

From these statistics, the Court concludes that money does matter, and economically-disadvantaged students and historically underperforming students can overcome challenges if they have access to the right resources that wealthier districts are financially able to provide. This is consistent with Dr. Noguera's credible testimony that additional school resources can dramatically reduce disparities that exist between low-income children and their more affluent peers, (FOF ¶ 1973), as well as Dr. Johnson's credible testimony that sustained increases in funding can help eliminate achievement gaps between economically-disadvantaged students and their non-economically-disadvantaged peers. (FOF ¶ 2035, 2037.) In short, these statistics confirm what numerous witnesses testified as to: **every child can learn**, regardless of individual circumstances, with the right resources, albeit sometimes in different ways. (*See* FOF ¶¶ 103, 251, 730, 1329, 1953.)

ii. PVAAS

Legislative Respondents argue, if the Court is going to consider outcomes, the most appropriate measure is academic growth, which can be evaluated using PVAAS. When examining growth with PVAAS, Petitioner Districts exceed the statewide averages. For instance, in 2018-19, Greater Johnstown's PVAAS growth score in ELA was 90, which exceeded the statewide average growth score by 15 points and the "meeting statewide growth standard" by 20 points. (FOF ¶ 571.) Likewise, Panther Valley met or exceeded the PVAAS growth standard in various subjects between the 2013-14 and the 2018-19 school year. (FOF ¶¶ 734-739.) Special education students and economically-disadvantaged students at Panther Valley also met or exceeded the PVAAS growth standard in 58-60% of "single grade levels" and 75% of "across grade levels." (FOF ¶¶ 741-742.) Lancaster saw similar results: between 2017 and 2019, across all grade levels, 53% of economically-disadvantaged students, 66% of ELL students, 57% of Hispanic students, and 72% of special education students met or exceeded the PVAAS growth standard on PSSAs. (FOF ¶¶ 972-975.) Between the 2016-17 and 2018-19 school years, Shenandoah Valley met or exceeded the PVAAS growth standard for various exams multiple times. (FOF ¶¶ 1128-1132.) Schools within William Penn also showed positive PVAAS growth scores exceeding statewide averages, and many of its student subgroups also met or exceeded the growth measure. (FOF ¶¶ 1444-1447) In addition, Dr. Costello testified Wilkes-Barre ranked 14th out of 587 districts and charter schools in growth, which, he explained shows the district is "making strides." (FOF ¶¶ 1230-1231.)

There is no dispute that the growth numbers are encouraging. However, while important as an indicator of progression or improvement, PVAAS growth must be examined in the context of the other measures, and not in isolation. Dr. Rau of Lancaster credibly explained the shortcomings of PVAAS/growth scores, testifying they "hide[] the fact that students are not proficient or advanced on their achievement" and they are not a "truthful representation of how that child is doing meeting the target standards." (FOF ¶ 980.) Shenandoah Valley Elementary School's scores illustrate this well. For the 2021-22 school year, in ELA/literature, the academic growth score was 76.0 compared to a statewide average growth score

of 75.0, and in math, the academic growth score was 100 compared to the statewide average of 75.3. (FOF ¶ 1128.) However, only 48.7% of its students scored proficient or advanced in ELA/literature, which is 13.4 percentage points below the statewide average, and only 38.4% of its students scored proficient or advanced in math/algebra, which is 6.8 percentage points below the statewide average. (FOF ¶ 1129.) Thus, a high growth PVAAS score does not translate to high achievement.

*329 Unlike achievement, which is a snapshot of a student's performance at a single point in time, PVAAS follows groups of students over time and estimates their growth based upon a comparison of their performance on the state assessments during that interval, which is then aggregated into a larger group. (FOF ¶¶ 252-253, 450.) The growth measure that is calculated is stated to be an "estimate of a district's or school's influence on students' academic growth" in state-tested subject areas. (FOF ¶ 256.) A growth measure of zero signifies that a student, relative to other students, grew one year in a year's time or, as former Deputy Secretary Stem explained, "they haven't fallen behind, but they haven't necessarily advanced significantly either." (FOF ¶ 257.) Dr. Johnson testified that growth is helpful in measuring the impact of school funding on outcomes, but it has its limitations. (FOF ¶¶ 2051-2052.) Because PVAAS is said to measure students and districts against each other, Dr. Johnson explained it does not measure whether students are moving toward proficiency. (*Id.*)

PVAAS also calculates AGI, which is derived by dividing the growth measure by a standard error. (FOF ¶ 259.) Information about PVAAS states that using a standard error is important for purposes of reliability or confidence in the results. (FOF ¶ 260.) The more data available, the smaller the standard error, which allegedly making the growth measure more precise. (*Id.*) However, because standard error, which is tied to district size, is the denominator in calculating AGI, former Deputy Secretary Stem testified that AGI can be misleading and cannot be used to rank school districts or to make mathematical claims about their difference in growth. (FOF ¶ 449.) For example, it can cause districts with identical growth scores to have significantly different AGI. (FOF ¶ 446) He used SDP, the largest district in the Commonwealth, and Johnsonburg, a small district, as an example. According to former Deputy Secretary Stem, SDP and Johnsonburg had identical growth scores of 1.3 on the 2018-19 math

William Penn School District; Panther Valley School..., Not Reported in Atl....

PSSA; however, because of their size, their standard errors greatly differed resulting in SDP having an AGI of 24.65 and Johnsonburg having an AGI of only 1.73. (*Id.*) Thus, an examination of just the AGI for both districts would suggest that SDP students are growing at a rate 15 times more than Johnsonburg, when their growth is actually identical. (*Id.*) Instead, the different AGI scores only depict greater “statistical confidence” in the accuracy of SDP’s growth score because of the larger data set. (FOF ¶¶ 260, 265, 446-448.) Similarly, Deputy Secretary Stem cautioned that a district can have a larger growth measure than another district, but a lower AGI score. (FOF ¶ 447.) As an example, he testified that Chambersburg’s growth measure for 2018-19 PSSA math was 2.0, which was greater than SDP, but Chambersburg’s AGI was 10.52, less than half of SDP. (*Id.*) Thus, the use of AGI in studies must be carefully undertaken to avoid misinterpreting its meaning.

Dr. Koury, Legislative Respondents’ expert, focused on AGI as part of his analysis in which he opined that there is no clear relationship between spending and academic growth. (*See generally* FOF ¶¶ 2158-2166.) This drew criticism from Dr. Kelly and Dr. Johnson, who both explained AGI eliminates other factors that could impact a student’s achievement. (FOF ¶¶ 1933, 2052, 2168.) Focusing on the AGI as a measure of academic growth provides limited benefit when trying to identify a relationship between academic growth and funding, or a relationship between academic achievement and funding. (FOF ¶¶ 1933, 2052.) Furthermore, Dr. Koury’s opinion appeared to be based on a misconception that the larger the AGI, the higher a district’s students’ academic growth, which, as discussed above, is not consistent with the credible testimony of former Deputy Secretary Stem regarding what AGI reflects or measures or with the statement on the PVAAS Report. (FOF ¶¶ 446, 2167.) Dr. Rau identified PVAAS can be misleading of whether students are proficient, stating “the biggest shortcoming is that PVAAS does not tell you that the students are not meeting the standard as defined by the Department of Education.” (FOF ¶ 980.) For example, Dr. Rau highlighted that for several subgroups, Lancaster students received the highest AGI designation of “dark blue” even when every single student in that subgroup scored “Below Basic” or “Basic” on the PSSAs for that year. (FOF ¶ 981.) Given the fact that a high AGI score can be obtained when students are uniformly scoring at the lowest level of PSSA scores, Dr. Rau testified that PVAAS results therefore

shed little, if any, light on the underlying performance of students. (*Id.*)

*330 Dr. Kelly also demonstrated the volatility of PVAAS scores, illustrating “extreme swings in the results one year to another, which is a concern raised by several professional organizations, which Dr. Koury did not appear to take into account. (FOF ¶¶ 1935-1937; *see also* FOF ¶ 2170.)

Accordingly, while academic growth figures may be encouraging, they can be misleading when viewed alone or out of context and should be considered in the context of other measures of achievement.

iii. National measures

Legislative Respondents also presented evidence of Pennsylvania students’ performance on some national measures. For instance, Mr. Willis testified as to Pennsylvania students’ performance on NAEP, which is an exam testing fourth and eighth grade students across the country every two years in the subjects of ELA, math, and science. (FOF ¶¶ 284, 2112.) According to Mr. Willis, “Pennsylvania outperforms its peers” in national reading and math metrics. (FOF ¶ 2112.) Dr. Hanushek also testified that fourth grade reading and math and eighth grade math improved significantly relative to other states between 2005 and 2019, while Pennsylvania’s eighth grade reading slightly declined. (FOF ¶ 2204.)

Former Deputy Secretary Stem, however, credibly testified that when student subgroups, such as racial and ethnic minorities and economically-disadvantaged students are considered, Pennsylvania has one of the largest NAEP achievement gaps in the nation. (FOF ¶ 2228.) For example, on the fourth grade reading NAEP exam in 2015, Black students scored 205 and Hispanic students scored 201, compared to White students who scored 234. (*Id.*) Low-income students who were eligible for the National School Lunch Program scored 28 points lower than students who were not eligible for free or reduced lunches on the same exam. (*Id.*) Thus, as the testimony of Dr. Kelly and Dr. Johnson revealed with regard to growth scores, while some NAEP figures are encouraging, there are others that illustrate an achievement gap.

William Penn School District; Panther Valley School..., Not Reported in Atl....

Furthermore, as previously described, Mr. Willis's selection of peer states is suspect, at best.¹⁰⁸ (FOF ¶ 2091.) Therefore, his opinion that Pennsylvania is outperforming its “peers” is not persuasive. (*Id.*) Finally, it is noteworthy that NAEP is not a state-specific test, and Pennsylvania regulations prohibit NAEP from being used as part of the state assessment system unless permitted by the Board or authorized by the General Assembly, which has not occurred. (FOF ¶¶ 286-287.)

iv. High school graduation rates

Another measure of whether the system of public education is providing all students with a thorough and efficient education is high school graduation rates. As Dr. Belfield credibly testified, high school graduation has a “very significant positive impact on Pennsylvania’s finances.” (FOF ¶ 2008.)

*331 At Petitioner Districts, however, 10 to 20 out of every 100 students do not graduate high school. For example, at Lancaster, between 2015-16 and 2019-20, the four-year cohort graduation rate ranged between 77.37% to 84.06%, and the five-year cohort graduation rate ranged between 83.12% and 87.47%. (FOF ¶¶ 956, 963.) While these numbers were above statewide averages for Lancaster's McCaskey High School in 2018-19, districtwide in 2019-20, Lancaster's four-year cohort graduation rate was less than 80%, placing it in the bottom 25 of 499 districts, along with Greater Johnstown and William Penn. (FOF ¶¶ 574, 957-958, 2261.) At Shenandoah Valley, the four-year cohort graduation rate for the 2019-20 school year was 87.18%. (FOF ¶ 1122.) Wilkes-Barre's five-year cohort graduation rate for the same time period ranged between 85.40% to 89.81%. (FOF ¶ 1225.)

Contrary to Legislative Respondents’ assertion, there is evidence that similar graduation rates extend beyond the Petitioner Districts. In 2018-19, the largest district in the Commonwealth, SDP, increased its graduation rate by five percent over the prior school year. (FOF ¶ 1561.) However, 3 out of every 10 students in the district did not graduate in 2019-20. (FOF ¶ 1563.) That year, its four-year cohort rate was 70.12%, five-year cohort rate was 74.16%, and six-year cohort rate was 70.19%. (*Id.*)

In 2015, the four-year cohort graduation rate for all students in the Commonwealth was 84.8%. (FOF ¶ 238.) The baseline

rates were lower for minority students: 71.8% for Black students and 69.5% for Hispanic students. (*Id.*) Other student subgroups also had lower four-year cohort rates: 71.5% for students with disabilities, 62.6% for ELL students, and 75.9% for economically-disadvantaged students. (FOF ¶ 240.) In 2019, the four-year cohort graduation rate for all students was 87.36%. (FOF ¶ 2264.) However, the four-year cohort graduation rate for Black students was 76.53% and for Hispanic students it was 77.21% compared to a rate of 91.40% for White students. (*Id.*) During the same time period, the four-year cohort graduation rates for economically-disadvantaged students, ELL students, and special education students was 79.60%, 68.99%, and 72.82%, respectively. (*Id.*) And as former Deputy Secretary Stem explained, because the “all students” group includes economically-disadvantaged students, the achievement gap with non-economically-disadvantaged students is even larger. (FOF ¶ 2263.)

In addition to achievement gaps among student subgroups, there are also achievement gaps among school districts. Less affluent districts have students graduating at lower rates than their more affluent counterparts. Dr. Kelly testified that students who attend a district in the lowest-wealth quintile had a five-year high school graduation rate nearly 10 percentage points lower than those attending a district in the highest-wealth quintile. (FOF ¶¶ 1924, 2262.) The rate in the lowest-wealth quintile was 88.2% versus 96.0% in the highest-wealth district. (FOF ¶ 1924.)

Like the statistics introduced regarding proficiency on academic achievement exams, evidence was presented that students who attend charter schools or cyber charter schools graduate at lower rates than students who attend a traditional public school. For instance, at CCA, the four-year cohort graduation rate was 56.1%, which was approximately 30 percentage points lower than the statewide average. (FOF ¶ 1778.) At 21st Century, the combined graduation rate – including four- and five-year cohorts, students with disabilities, and economically-disadvantaged students – is 65.94%. (FOF ¶ 1812.) For 21st Century students with disabilities the graduation rate is 50.9%, and for economically-disadvantaged students the graduation rate is 42.6%. (*Id.*) Because of the lower percentage of economically-disadvantaged students graduating from 21st Century, the Department designated 21st Century an ATSI school. (*Id.*) Across the state, the attrition rate for students

William Penn School District; Panther Valley School..., Not Reported in Atl....

who attend charter schools (brick-and-mortar or cyber) is almost three times greater (5.09%) than the overall combined average rate of students who drop out of all public school types (1.73%). (FOF ¶ 1778.)

***332** As with other measures, there are gaps between the number of students who graduate from low-wealth districts versus students who graduate from more affluent districts. There are similar gaps between various student subgroups and those that attend charter schools.

v. Postsecondary enrollment and attainment

Obviously, when considering whether the system of public education is preparing students to be college and career ready, it is necessary to examine postsecondary enrollment and attainment rates. As Dr. Belfield credibly testified, there is a positive causal relationship between increased educational attainment and higher earnings. (FOF ¶ 1999.) Furthermore, he testified that the Commonwealth, as well as its citizens, benefit economically from increases in educational attainment. (FOF ¶ 2000.) Increased attainment, according to Dr. Belfield, results in human capital and “the more human capital a worker has, the more productive that worker can be,” thereby increasing economic growth. (*Id.*) There are also “spill-over productivity gains” and “social health gains,” among other benefits. (FOF ¶¶ 2000-2005.) Legislative Respondents’ expert, Mr. Willis, acknowledged research that would support these findings. (FOF ¶ 2145.) The State Board has also recognized the importance of postsecondary attainment, setting a goal that 60% of Pennsylvanians aged 25-65 attain a postsecondary degree or industry credential by 2025. (FOF ¶¶ 279, 2272.) In 2021, the rate was approximately 50%. (*Id.*)

Before obtaining a postsecondary degree or credential, though, students must enroll. The statewide average for college enrollment among the class of 2013, for instance, was 61.99%. (FOF ¶ 2267.) At all of Petitioner Districts, the percentage of students in the class of 2013 enrolling in college within one year of high school graduation was lower than the statewide average, with Greater Johnstown having the lowest enrollment rate of 39.34%. (*Id.*) As with other statistics, Black students and Hispanic students also enroll at lower rates than

the state average: 53.48% and 45.09%, respectively. (FOF ¶ 2269.)

Students in the class of 2017 did not enroll in college at a higher percentage rate than previous years. In fact, the statewide average decreased nominally, to 61.98%. (FOF ¶ 2270.) Once again, Petitioner Districts fell below the state average by as much as 20 percentage points. (*Id.*) Similarly, Black and Hispanic enrollment rates among the class of 2017 were below the state average: 53.58% and 47.75%, respectively. (*Id.*) Economically-disadvantaged students in the class of 2017 also enrolled within one year of high school graduation at significantly lower rates than non-economically-disadvantaged students – 48% versus 70.8%. (FOF ¶ 2271.)

Of the students enrolling in a postsecondary institution from the class of 2013, the percentage actually obtaining a college degree is low. Statewide, 42% of students receive a two- or four-year degree within six years of high school graduation. (FOF ¶ 2273.) Among the Petitioner Districts, the rate is anywhere from 18.45% for Lancaster to 33.40% for Wilkes-Barre, meaning less than one-third of students who graduated from Petitioner Districts obtained a college degree within six years. (FOF ¶ 2274.) The rates among student subgroups within these districts is lower: 15-21% of Black students; 12-20% of Hispanic students, and 13-22% of economically-disadvantaged students. (*Id.*) Statewide, minority students or economically-disadvantaged students are completing postsecondary programs at half the rate of all students. (FOF ¶ 2275.) Former Secretary Ortega commented on the disparities, noting that as of 2019, 47% of White 25- to 64-year-olds had a postsecondary credential, compared to 30% of Blacks and 24% of Latinx in the same age group. (FOF ¶ 2276.)

***333** For the class of 2013, 21.4% of economically-disadvantaged students obtained a degree, compared to 52.3% of non-economically-disadvantaged students. (FOF ¶ 2277.) Notably, economically-disadvantaged students who attend a school district in the wealthiest quintile see their odds of graduating from a postsecondary institution increase by roughly 10 percentage points compared to economically-disadvantaged students attending a district in the lowest-wealth quintile. (FOF ¶ 2279.) Student Petitioner Mr. Horvath is an example of a student who did withdraw early from college because he felt inadequately prepared. (FOF ¶ 2280.)

vi. Other measures

Finally, there are other measures that are indicative of whether the system is thorough and efficient. For instance, on the SAT exams, none of Petitioner Districts has an average score of 1,000. (FOF ¶ 2259.) Black and Hispanic students take the SAT at lower rates and their average scores are 140 to 200 points lower than White students. (FOF ¶ 2260.)

Statewide on the AP exams in 2019, two-thirds of students score between 3 and 5. (FOF ¶ 2258.) When looking at student demographics, 32% of Black test takers and 53% of Hispanic test takers score 3 or higher, compared to 70% of White test takers. (*Id.*) In addition, only 11% of the students taking AP exams are Black or Hispanic. (*Id.*) For the 2019-20 school year, the Future Ready PA Index data represents that, statewide, 57.5% of students are enrolled in rigorous courses of study. (FOF ¶¶ 925, 1671.)

Overall, there are consistent gaps when the inputs and outcomes described above are evaluated: gaps of achievement for economically-disadvantaged students, Black and Hispanic students and other historically underperforming students. The consistency of these gaps over the variety of inputs and outputs leads to the inescapable conclusion that these students are not receiving a meaningful opportunity to succeed academically, socially, and civically, which requires that **all** students have access to a comprehensive, effective, and contemporary system of public education.

Based upon the foregoing, Petitioners have established they are entitled to judgment in their favor as to Count I of the Petition for Review.

VIII. WHAT TYPE OF RIGHT IS EDUCATION AND WHAT LEVEL OF SCRUTINY APPLIES TO PETITIONERS' EQUAL PROTECTION CLAIM

A. Parties' Arguments

1. Petitioners

In Count II of the Petition, Petitioners assert Respondents are violating the Equal Protection Clause of the Pennsylvania

Constitution, PA. CONST. art III, § 32. Specifically, "Petitioners claim that Pennsylvania's funding scheme discriminates against students in low-wealth districts by creating resource disparities that deprive these students of an equal opportunity to receive the high-quality education to which they are entitled." (Petitioners' Br. at 63.) Petitioners acknowledge that "no right to education has been recognized under federal equal protection principles," but Petitioners contend that education is a fundamental right under the Pennsylvania Constitution and, thus, entitled to strict scrutiny. (*Id.* at 64-66.)

Petitioners argue the right to education is explicitly and implicitly provided in the Pennsylvania Constitution. Petitioners argue it is explicitly guaranteed by the Education Clause, which requires the General Assembly to provide a "thorough and efficient" system of public education to all children. (*Id.* at 66.) Petitioners argue further evidence that education is a fundamental right is implicitly found in the fact that education is included in the general appropriations bills and the Secretary is "the only constitutionally prescribed executive officer who is not subject to election." (*Id.*)

*334 In addition, Petitioners assert the history of the Education Clause demonstrates that education is a fundamental right in Pennsylvania, detailing the emphasis that the delegates put on the subject. (*Id.* at 67-68.) Petitioners also claim that "[f]or more than a century, Pennsylvania courts have endorsed" the same view. (*Id.* at 68-69 (citing *William Penn II*, 170 A.3d at 424; *Teachers' Tenure Act Cases*, 197 A. at 352; *Appeal of Albert*, 92 A.2d 663, 665 (Pa. 1952); and *Bovino v. Bd. of Sch. Dirs. of the Ind. Area Sch. Dist.*, 377 A.2d 1284, 1289 (Pa. Cmwlth. 1977).) To the extent PARSS determined education was not a fundamental right, Petitioners claim it was based upon *Danson*, which has now been abrogated by the Supreme Court in *William Penn II*. (*Id.* at 69.)

Petitioners also claim that states with similarly-worded education clauses have found education to be a fundamental right, including Minnesota, Kentucky, Wyoming, and West Virginia. (*Id.* at 70-71 (citing *Skeen*, 505 N.W.2d at 309, 313; *Rose*, 790 S.W.2d at 200, 206, 212; *Washakie Cnty. Sch. Dist. No. One v. Herschler*, 606 P.2d 310, 320-21, 333 (Wyo. 1980); and *Pauley*, 255 S.E.2d at 878).) Petitioners note other states have likewise found education to be a fundamental right under their respective state constitutions, such as New

William Penn School District; Panther Valley School..., Not Reported in Atl....

Mexico, North Carolina, New Hampshire, and California. (*Id.* at 71 (citing *Martinez v. The State of New Mexico*, (N.M. Dist. Ct., No. D-101-CV-2014-00793, filed July 20, 2018), 2018 WL 9489378, at *25; *Leandro v. North Carolina*, 488 S.E.2d 249, 255 (N.C. 1997); *Claremont Sch. Dist. v. Governor*, 703 A.2d 1353, 1358-59 (N.H. 1997); and *Serrano v. Priest*, 487 P.2d 1241, 1248, 1258 (Cal. 1971) (*Serrano I*)).)

Finally, Petitioners assert that policy considerations also support the conclusion that education is a fundamental right in the Commonwealth. Specifically, Petitioners argue “[t]he Commonwealth has clearly and repeatedly recognized both an individual and societal interest in providing a comprehensive and effective system of public education to its citizens.” (*Id.* at 72.)

Because education is a fundamental right, Petitioners argue that their equal protection claim should be evaluated using strict scrutiny, meaning Respondents must show the disparities experienced by low-wealth districts are “necessary to advance a compelling state interest.” (*Id.* at 73 (quoting *William Penn II*, 170 A.3d at 458).) Alternatively, Petitioners argue that Legislative Respondents have conceded “education is, at a minimum, an important right” subject to intermediate scrutiny. (*Id.* at 73-74 (citing various statements by Respondents’ counsel during opening and closing statements about the importance of education).) Under intermediate scrutiny, Petitioners argue Respondents must demonstrate the disparate treatment of low-wealth districts is “‘substantially related’ to the system’s ‘purpose.’ ” (*Id.* at 74-75 (quoting *Yanakos v. UPMC*, 218 A.3d 1214, 1225 (Pa. 2019)).)

2. Legislative Respondents

First and foremost, Legislative Respondents argue that there was no equal protection violation as Petitioners have not demonstrated that anyone was deprived of an opportunity for an adequate education. (President Pro Tempore's Br. at 90-91; Speaker's Br. at 94-95, 100.) Assuming the Court reaches an equal protection analysis, Legislative Respondents argue wealth is not a suspect class, so strict scrutiny applies only if education is a fundamental right, which Legislative Respondents assert it is not. (President Pro Tempore's Br. at 92-94; Speaker's Br. at 82-84.) Legislative Respondents argue that “simply because something is ‘important’ does not

mean that it is a fundamental right,” giving, as an example, holding and using property, which has been found not to be a fundamental right despite its importance. (President Pro Tempore's Br. at 93 (citing *McSwain v. Commonwealth*, 520 A.2d 527, 530 (Pa. Cmwlth. 1987)).) Instead, Legislative Respondents claim the focus is on whether the right is conferred by the plain language of the Constitution itself, which, here, it is not. (*Id.* at 93-95.) According to Legislative Respondents,

*335 the Education Clause does *not* expressly grant any rights to anyone. It does not mention any particular person or group at all, including children, minors, or people living in poverty. Rather, the Education Clause is directed at our legislature, giving it the duty to provide for the maintenance and support of a system of public education.

(*Id.* at 95 (emphasis in original).) Legislative Respondents explain this is unlike other provisions of the Constitution that do confer rights by expressly referencing people who hold the right and identifying the nature of that right. (*Id.* at 95-96 (listing examples).) Legislative Respondents further argue that “[m]ost provisions of the Constitution that confer individual rights are found in [a]rticle I, which is aptly titled the ‘Declaration of Rights,’ ” whereas the Education Clause is located in article III, entitled “Legislation,” which “sets forth the procedures for enacting legislation and otherwise addresses the manner in which the General Assembly operates.” (*Id.* at 97.)

Legislative Respondents argue the history of the Education Clause further supports that education is not a fundamental right. For example, they contend, the 1967 amendment to the Education Clause removed reference to children, thereby confirming it was not intended to create a right in anyone. (*Id.* at 98-99.) They contend the 1874 Education Clause “was more akin to the rights-conferring constitutional provisions ... that make an express reference to the people who hold a right and identify the nature of the right” than the current Education Clause. (*Id.* at 99.) Legislative Respondents

William Penn School District; Panther Valley School..., Not Reported in Atl....

contend Petitioners read “all children” into the Education Clause, where it does not exist. (*Id.* at 99-100.)

Contrary to Petitioners’ assertions, Legislative Respondents argue no court in Pennsylvania has determined education is a fundamental right, noting that the Supreme Court in *William Penn II* even acknowledged it was “not a settled question.” (President Pro Tempore’s Br. at 100 (quoting *William Penn II*, 170 A.3d at 461); *see also* Speaker’s Br. at 83 (citing same).) However, Legislative Respondents point out that the Court in *PARSS* did conclude that education was not a fundamental right. (Speaker’s Br. at 83-84; President Pro Tempore’s Br. at 101.) Legislative Respondents also point to a number of states that have found education is not a fundamental right, including New York, Maryland, Colorado, Idaho, and others. (President Pro Tempore’s Br. at 102-03 (citing *Bd. of Educ., Levittown Union Free Sch. Dist. v. Nyquist*, 439 N.E.2d 359, 366 (N.Y. 1982) (*Nyquist*); *Hornbeck*, 458 A.2d at 786; *Lujan v. Colorado State Bd. of Educ.*, 649 P.2d 1005, 1017 (Colo. 1982); *Idaho Schs. for Equal Educ. Opportunity v. Evans*, 850 P.2d 724, 733 (Idaho 1993) (*Evans*); and *William Penn II*, 170 A.3d at 462 n.69 (compiling others)); *see also* Speaker’s Br. at 84 (incorporating President Pro Tempore’s argument regarding same).) Therefore, Legislative Respondents contend that the rational basis test should apply to Petitioners’ equal protection claim.

Even if the Court were to determine education is a fundamental right, Legislative Respondents argue that it should still be evaluated using the rational basis test and not strict scrutiny. (Speaker’s Br. at 84; *see also* President Pro Tempore’s Br. at 104 (incorporating Speaker’s argument on this issue).) According to Legislative Respondents,

*336 even where education is recognized as a fundamental right, a rational basis analysis is appropriate where the lawsuit challenges the system for funding public schools, as opposed to any particular government action that is alleged to have deprived or interfered with an individual

student’s right to receive a basic public education.

(Speaker’s Br. at 84-85.)

For support of this proposition, Legislative Respondents cite *Skeen*, 505 N.W.2d at 316, and *Kukor v. Grover*, 436 N.W.2d 568, 580 (Wis. 1989), in which the Minnesota Supreme Court and Wisconsin Supreme Court applied the rational basis test, notwithstanding that each court determined education was a fundamental right. (Speaker’s Br. at 85.) Applying the rational basis standard, according to Legislative Respondents, is also consistent with how other jurisdictions have evaluated social or economic legislation. (*Id.* at 86 (citing *Walter*, 390 N.E.2d at 819; and *King v. Iowa*, 818 N.W.2d 1, 27 (Iowa 2012)).) Legislative Respondents also argue that “[b]ecause any ‘fundamental’ or ‘important’ right to education would necessarily derive from the Education Clause, it logically follows that a similar standard should apply to both of Petitioners’ claims,” and since the reasonable relation standard should apply, in Legislative Respondents’ view, to Petitioners’ Education Clause claim, “it logically follows” that the rational basis test should apply to Petitioners’ Equal Protection Clause claim. (*Id.* at 87.)

3. Executive Respondents & State Board

Neither Executive Respondents nor the State Board take a position on the level of judicial scrutiny that the Court should apply to the Petitioners’ equal protection claim or whether the Equal Protection Clause was violated. (Executive Respondents’ Br. at 5 n.2; State Board’s Br. at 3.)

4. Amici

A group of constitutional law professors (Law Professor Amici) filed an amicus brief specifically addressing the level of scrutiny that should apply to Petitioners’ equal protection claim.¹⁰⁹ According to Law Professor Amici, “[t]he right to an opportunity for a meaningful education is a fundamental right under the Pennsylvania Constitution, warranting strict scrutiny.” (Law Professor Amici’s Br. at 2.) Law Professor Amici contend the right to an opportunity

William Penn School District; Panther Valley School..., Not Reported in Atl....

for an adequate education is derived from the Constitution, which does not impose any limits upon the right. (*Id.* at 3.) Although they acknowledge the Education Clause creates a duty on the General Assembly to maintain and support a thorough and efficient system of public education, Law Professor Amici dispute that the Education Clause does not create a “correlative ‘right’ in the people,” explaining “the duty is for the benefit of the people.” (*Id.* at 4.)

*337 According to Law Professor Amici:

Every attribute that we would expect to render a right as fundamental is present with respect to the right to education under the Pennsylvania Constitution: (1) explicit constitutional text prescribing the governmental duty ... ; (2) Supreme Court recognition that the duty is enforceable ... ; (3) a historical constitutional commitment, mandating that the government educate its citizens ... ; (4) a similar longstanding recognition that education is a prerequisite to the exercise of other rights guaranteed by the Constitution and is essential to the proper functioning of a democracy ... ; and (5) recognition of education as a fundamental right by the highest courts of other states when interpreting analogous constitutional language.

(*Id.* at 4-5 (internal citations and footnote omitted).) Law Professor Amici focus their amicus brief on this last point – how other jurisdictions have treated education.

Law Professor Amici cite numerous cases from other jurisdictions, in which courts have concluded education is a fundamental right under their respective constitutions, such as: *Serrano v. Priest*, 557 P.2d 929, 951-52 (Cal. 1976) (*Serrano II*), reaffirming *Serrano I*, 487 P.2d at 1255-59; *Horton v. Meskill*, 376 A.2d 359, 372-75 (Conn. 1977); *Rose*, 790 S.W.2d at 205; *Claremont School District*, 703 A.2d

at 1358-59; *Leandro*, 488 S.E.2d at 255; *Campbell County School District*, 907 P.2d at 1257; *Bismarck Public School District No. 1 v. State By & Through North Dakota Legislative Assembly*, 511 N.W.2d 247, 256, 259 (N.D. 1994); *Kukor*, 436 N.W.2d at 579; *Skeen*, 505 N.W.2d at 313; *Pauley*, 255 S.E.2d at 878.¹¹⁰ (Law Professor Amici's Br. at 7-13.) Law Professor Amici argue “the reasoning of these decisions can be summarized in one sentence:”

Standing alone (and consistent with Pennsylvania precedent ...), the importance placed upon education by the text and history of the state constitution points toward its status as a “fundamental right”; but, *in combination with* the critical importance of education in the life of a citizen in a democratic society, the right to a meaningful education is surely “fundamental” for purposes of equal protection analysis.

(*Id.* at 7 (internal citation omitted) (emphasis in original).)

To the extent there are cases from other jurisdictions that determined education is not a fundamental right, Law Professor Amici assert those cases are inapposite. For instance, Law Professor Amici argue that the court's decision in *McDaniel*, 285 S.E.2d 156, is distinguishable because Georgia's education clause is very detailed and so it was not surprising that “the [c]ourt was unwilling to find a system that was largely *dictated* by the constitution to be in *violation* of that same constitution.” (Law Professor Amici's Br. at 15 (emphasis in original).) The Georgia court also expressed a justiciability concern, which Law Professor Amici point out has been rejected as a concern in *William Penn II*. (*Id.* at 16.) Law Professor Amici argue that the court in *Thompson v. Engelking*, 537 P.2d 635 (Idaho 1975), “was also plainly influenced by justiciability concerns.” (Law Professor Amici Br. at 17.) Moreover, they note, that at the time *Thompson* was decided, rational basis was the only standard of review available in Idaho; thus, the decision should be given little weight. (*Id.*; *see also id.* at 18-24 (distinguishing cases from

William Penn School District; Panther Valley School..., Not Reported in Atl....

Indiana, Kansas, Illinois, Maryland, Michigan, Missouri, Rhode Island, Colorado, and Ohio on various grounds.)

*338 Law Professor Amici assert “the record is replete with evidence” that demonstrates the importance of education to individual improvement and selfgovernment. (*Id.* at 25.) Thus, Law Professor Amici posit strict scrutiny should apply, and Respondents “must demonstrate that the disparities in educational opportunity, based on wealth of the local tax base, constitute a *necessary* and *narrowly tailored* means to serve a *compelling interest*.” (*Id.* at 26 (emphasis in original).)

Various labor organizations representing educators (AFL-CIO Amici) also filed an amicus brief addressing the equal protection claim.¹¹¹ AFL-CIO Amici argue the “importance of public education in a democratic republic” has been recognized as early as the mid-1700s and continues to be recognized through the present day. (AFL-CIO Amici’s Br. at 8-18.) AFL-CIO Amici further argue that the courts have also recognized its importance to democracy, citing the *Teachers’ Tenure Act Cases*, 197 A. at 352; *Wilkinsburg Education Association v. School District of Wilkinsburg*, 667 A.2d 5, 9 (Pa. 1995); and *Pennsylvania Human Relations Commission v. School District of Philadelphia*, 681 A.2d 1366, 1383 (Pa. Cmwlth. 1996). “Through their acknowledgement that public education is ‘an indispensable governmental function’ and/or ‘a fundamental right,’ ” AFL-CIO Amici maintain “our appellate courts correctly understand the significance of the Education Clause.” (AFL-CIO Amici’s Br. at 22.) According to AFL-CIO Amici, this is consistent with what other jurisdictions have done with similarly-worded education clauses. (*Id.* at 23-25.) Finally, AFL-CIO Amici argue that the policy behind the Education Clause also supports a conclusion that it is a fundamental right, explaining that “it was well understood that providing a quality public education was not only something that would benefit individual students but also represented a constitutional necessity to ensure that the citizenry could effectively participate in the Commonwealth’s republican form of government.” (*Id.* at 25.)

In its amicus brief, the Commonwealth Foundation asserts that Petitioners’ “[e]qual [p]rotection claim is vulnerable” because:

First, the targeted laws are facially neutral, and no evidence demonstrates that the Commonwealth purposefully distributed scarce educational resources based upon certain classifications. Second, even assuming a heightened level of scrutiny, the relief sought does not address the root cause of the alleged disparities identified in the Petition for Review.

(Commonwealth Foundation’s Amicus Br. at 30.)

The Commonwealth Foundation explains the “school funding arrangement applies, on its face, the same throughout the Commonwealth.” (*Id.* at 31.) To be invalidated, any disproportionate impact on a particular class of people “must be traceable to purposeful discrimination.” (*Id.* at 32 (quoting *Klesh v. Dep’t of Pub. Welfare*, 423 A.2d 1348, 1351 (Pa. Cmwlth. 1980) (emphasis omitted).) Here, the Commonwealth Foundation argues there is no such evidence of purposeful discrimination. (Commonwealth Foundation’s Amicus Br. at 33.) It argues “[t]he different compositions of Pennsylvania’s 500 school districts create the obvious disparities involved, not the law itself.” (*Id.*) The Commonwealth Foundation also notes that state funding is distributed to districts “largely based upon financial need,” which “belies any suggestion that Pennsylvania policymakers intentionally or purposefully created [a] disparity.” (*Id.* at 34.)

*339 As to their second point, that the relief sought does not address the cause, the Commonwealth Foundation argues that funding disparities will continue due to the high level of local funding. The Commonwealth Foundation explains the dilemma, as follows:

If the Pennsylvania Constitution permits wealthier districts to continue raising greater revenues through local property taxes, the amount of such revenues must be capped at

some ceiling-level or else the cited disparities will persist indefinitely. The alleged disparities in available resources cannot be remedied entirely through spending increases as Petitioners imply. The relatively low percentage of state-level funding—at a relatively high per-student—for public schools in Pennsylvania is the result of the remarkably high level of local revenue. The two are inversely proportional. Complaining of one without addressing the other is inconsistent and ignores, at least, half the problem.

(*Id.* at 36 (emphasis in original).)

5. Petitioners' Reply

In their reply brief, Petitioners argue that Legislative Respondents' argument that the Education Clause does not confer a right to education is baseless because it ignores the delegates' intent, cites no authority for the proposition that a right cannot be inferred absent an express reference to the holder of the right, and ignores that rights do not have to reside in the declaration of rights to be fundamental. (Petitioners' Reply Br. at 55-57.) Petitioners also argue that Legislative Respondents' argument that the rational basis test should apply, even if education is determined to be a fundamental right, "relies on a critical misinterpretation of case law." (*Id.* at 59.) Petitioners claim Legislative Respondents misstate the holding of *Skeen* and that strict scrutiny would have been applied, but due to the plaintiffs' concession in that matter that uniform funding was provided sufficient to provide an adequate level of education, the Minnesota's system of public education withstood strict scrutiny. (*Id.* at 59-60 (citing *Skeen*, 505 N.W.2d at 315).) Petitioners assert that the court in *Skeen* "was not being asked to evaluate an adequacy claim, but rather a challenge to 'the particular means employed to finance state education,'" so the court applied the rational basis test. (*Id.* at 60 (quoting *Skeen*, 505 N.W.2d at 315).) The other cases relied upon are inapplicable, according to Petitioners, because here "Petitioners have presented

overwhelming evidence that [the] funding scheme *does* deprive students in low-wealth districts of an equal access to their education, leaving [those] students ... with significantly fewer financial resources ... and resulting in the deprivation of basic educational resources and highly disproportionate rates of academic failure." (*Id.* at 62 (emphasis in original).)

B. Discussion

"In its most simplistic formulation, equal protection 'demands that uniform treatment be given to similarly situated parties.'" *Lohr v. Saratoga Partners, L.P.*, 238 A.3d 1198, 1209-10 (Pa. 2020) (quoting *Zauflik v. Pennsbury Sch. Dist.*, 104 A.3d 1096, 1117 (Pa. 2014)). Equal protection is generally embodied in multiple sections of the Pennsylvania Constitution. However, as the Supreme Court noted, "Petitioners state their equal protection claim solely in terms of Article III, Section 32 of [the Pennsylvania] Constitution," *William Penn II*, 170 A.3d at 242 n.3, which provides, in relevant part, that "[t]he General Assembly shall pass no local or special law in any case which has been or can be provided for by general law ...," PA. CONST. art. III, § 32. Although "Section 32 does not speak expressly in terms of equal protection," the Supreme Court explained that it "long ha[s] gleaned equal protection principles from Section 32, which [it] h[as] held is substantially coterminous with the federal Equal Protection Clause[, U.S. CONST. amend. XIV, § 1]." *William Penn II*, 170 A.3d at 242 n.3. See also *Harrisburg Sch. Dist. v. Zogby*, 828 A.2d 1079, 1088 (Pa. 2003) ("[I]t is now generally accepted that the meaning and purpose of the Equal Protection Clause of the United States Constitution, see U.S. CONST. amend. XIV, § 1, and the state Constitution's prohibition against special laws, see PA. CONST. art. III, § 32, are sufficiently similar to warrant like treatment.") Accordingly, it is well settled that Pennsylvania's equal protection provisions are analyzed under the same standards as federal equal protection under the Fourteenth Amendment. *Love v. Borough of Stroudsburg*, 597 A.2d 1137, 1139 (Pa. 1991).

*340 Moreover, as an initial matter, the Court is cognizant that

[t]he right to equal protection under the law does not absolutely prohibit the Commonwealth from

classifying individuals for the purpose of receiving different treatment ... and does not require equal treatment of people having different needs The prohibition against treating people differently under the law does not preclude the Commonwealth from resorting to legislative classifications ... provided that those classifications are reasonable rather than arbitrary and bear a reasonable relationship to the object of the legislation.

Curtis v. Kline, 666 A.2d 265, 267-68 (Pa. 1995) (internal citations omitted). “Whether a classification is justified depends upon the type of classification, what the governmental interest is in creating the classification, and the relationship of that interest to the classification.” *Sadler v. Workers’ Comp. Appeal Bd. (Phila. Coca-Cola Co.)*, 244 A.3d 1208, 1216 (Pa. 2021). Thus, to evaluate an equal protection claim, a court must first determine “the type of interest at issue.” *Love*, 597 A.2d at 1139. “[T]here are three different types of classifications calling for three different standards of judicial review.” *James v. Se. Pa. Transp. Auth.*, 477 A.2d 1302, 1305 (Pa. 1984).

The first type—classifications implicating neither suspect classes nor fundamental rights—will be sustained if it meets a “rational basis” test. ... In the second type of cases, where a suspect classification has been made or a fundamental right has been burdened, another standard of review is applied: that of strict scrutiny. ... Finally, in the third type of cases, if “important,” though not fundamental rights are affected by the classification, or if “sensitive” classifications have been made, the United States Supreme Court has employed what may be called an intermediate standard of

review, or a heightened standard of review.

Id. at 1305-06 (internal citations omitted). This Court has previously explained the different standards of judicial review as follows:

To survive strict scrutiny, a classification must be justified by a compelling government interest and ... must be strictly construed. ... If the classification involves an important government interest, then intermediate judicial scrutiny is applied to determine whether the classification serve[s] important governmental objectives and is substantially related to the achievement of those objectives. ... Finally, if the classification does not involve either fundamental rights, suspect classes, or sensitive or important government interests, it will be upheld if there is any rational basis for the classification.

Fouse v. Saratoga Partners, L.P., 204 A.3d 1028, 1035 (Pa. Cmwlth. 2019) (internal citations and quotations omitted, second and fourth alteration added), *aff’d sub nom.*, *Lohr*, 238 A.3d 1198.

In *William Penn II*, the Pennsylvania Supreme Court stated “[s]ince Petitioners undisputedly do not claim to comprise a class historically recognized as ‘suspect’ under the ... Pennsylvania Constitution[], they are entitled to elevated scrutiny only if they establish that they have an important or fundamental right to education.” 170 A.3d at 458. Petitioners contend education is a fundamental right, and, thus, their claim is entitled to strict scrutiny. Whether education is a fundamental right is unresolved in Pennsylvania. The Pennsylvania Supreme Court stated that it “do[es] not read any of [its] prior cases as settling whether the Pennsylvania Constitution confers an individual right to education—and, if so, of what sort.” *William Penn II*, 170 A.3d at 461.

William Penn School District; Panther Valley School..., Not Reported in Atl....

Moreover, although the United States Supreme Court held there was no individual right to education under the United States Constitution, as it was silent on the topic, *San Antonio Independent School District v. Rodriguez*, 411 U.S. 1 (1973), the Pennsylvania Supreme Court explained that *Rodriguez* was “immaterial” here where Petitioners are proceeding under “the Pennsylvania Constitution, which, obviously, is not at all silent on the topic.” *William Penn II*, 170 A.3d at 460.

*341 Even though the issue of whether education is a fundamental right is a matter of first impression in Pennsylvania, there are some general equal protection principles that will be helpful in the Court's analysis. In *James*, the Pennsylvania Supreme Court considered the United States Supreme Court's approach to defining a fundamental right: “In determining whether a class-based denial of a particular right is deserving of strict scrutiny under the Equal Protection Clause, we look to the Constitution to see if the right infringed has its source, explicitly or implicitly, therein.” 477 A.2d at 1306 (quoting *Plyler v. Doe*, 457 U.S. 202, 217 n.15 (1982)).¹¹² The Supreme Court later elaborated that if a right is not found anywhere in the constitution, it is not a fundamental right. *Fischer v. Dep't of Pub. Welfare*, 502 A.2d 114, 121 (Pa. 1985.) More recently, the Supreme Court reaffirmed *James*, stating that “[f]undamental rights generally are those which have their source in the Constitution.” *Zauflik*, 104 A.3d at 1118.

Aside from *James*, there is little guidance as to what makes a right fundamental. As previously discussed, the Supreme Court uses the *Edmunds* test to determine the contours of a Pennsylvania constitutional right vis-à-vis an analogous federal constitutional right. However, where, as here, there is no corresponding right to education under the United States Constitution, *Rodriguez*, 411 U.S. 1, an *Edmunds* analysis is not necessary, though it may still be helpful, *Jubelirer*, 953 A.2d at 524, 525 n.12; see also *League of Women Voters v. Commonwealth*, 178 A.3d 737, 803-04 (Pa. 2018); *Robinson Township*, 83 A.3d at 944. The *Edmunds* factors focus on: “1) [the] text of the Pennsylvania constitutional provision; 2) history of the provision, including Pennsylvania case-law; [and] 3) related caselaw from other states.”¹¹³ *Edmunds*, 586 A.2d at 895.

With the above principles in mind, the Court turns to whether education is a fundamental or important right under the Pennsylvania Constitution.

1. Type of Right

As the first *Edmunds* factor, the text of the Constitution, dovetails with whether the Constitution explicitly or implicitly creates a fundamental right to education from *James*, the Court begins with an examination of the Pennsylvania Constitution. The Education Clause indisputably imposes a **duty** on the General Assembly to maintain and support “a thorough and efficient system of public education.” PA. CONST. art. III, § 14. The parties dispute whether the Education Clause creates a corresponding **right** to a public education in students and if so, what type of right. The Court determines the Education Clause, at least implicitly, creates a correlative right in the beneficiaries of the system of public education—the students. While not determinative herein, other states have concluded a correlative right to education exists when the state's education clause imposes a legislative duty. For instance, in *Skeen*, the court held that “[w]hile a fundamental right cannot be found ‘[a]bsent constitutional mandate,’ ... the Education Clause is a mandate, not simply a grant of power.” *Skeen*, 505 N.W.2d at 313 (quoting *Rodriguez*, 411 U.S. at 33) (second alteration and emphasis in original). Similarly, in *Seattle School District*, the court explained that “[f]ollowing from this constitutionally imposed ‘duty’ is its jural correlative, a correspondent ‘right’[] permitting control of another's conduct.” 585 P.2d at 91 (footnote omitted). See also *Claremont Sch. Dist.*, 703 A.2d at 1358 (holding New Hampshire's education clause “specifically charges the legislature with the duty to provide public education” and “[t]his fact alone is sufficient in our view to accord fundamental right status to the beneficiaries of the duty”).

*342 Although this may not, in and of itself, support a conclusion that the right to education is fundamental, an examination of other provisions of the Constitution, and the other *Edmunds* factors, do. First, it is notable that the Secretary is the only cabinet-level official required by the Constitution, which illustrates the importance placed on education therein. PA. CONST. art. IV, §§ 1, 8(a). It is equally telling that, although it does not specify

William Penn School District; Panther Valley School..., Not Reported in Atl....

procedures for funding other programs or institutions, the Constitution requires the inclusion of education funding in general appropriations bills, alongside the funding of the three branches of government – the executive, legislative, and judiciary. [Article III, section 11 of the Pennsylvania Constitution, PA. CONST. art. III, § 11](#). When taken together, it is apparent from these constitutional provisions that education is an elevated right.

When the Court moves to the second *Edmunds* factor, the history of the Education Clause, any doubts that may have remained concerning whether education is a fundamental right are erased. As detailed in the Court's findings of fact and as discussed in *PARSS* and *William Penn II*, the importance of education was first recognized by our founders even before Pennsylvania became a state, and over the course of the next three centuries, its importance has remained evident. Repeatedly, education has been heralded as necessary to the continuing viability of the Commonwealth. (FOF ¶¶ 33, 37, 46, 56-57, 1863.) Although there was disagreement over what should and what should not be included in the Education Clause, (FOF ¶¶ 47-55), the delegates to the 1872-73 constitutional convention were not divided when it came to recognizing that education was essential to preserving the Commonwealth, (FOF ¶¶ 56-57). Thus, between the plain language of the Constitution and the history of the Education Clause, the Court concludes the right to public education is a fundamental right explicitly and/or implicitly derived from the Pennsylvania Constitution.

The conclusion that education is a fundamental right in Pennsylvania is bolstered by an examination of other jurisdictions' treatment, which is the third *Edmunds* factor. Since whether a right is fundamental depends on whether it derives explicitly or implicitly from the Constitution, *James*, 477 A.2d at 1306, the Court begins with jurisdictions with similarly-worded education clauses. Similar to Pennsylvania's Education Clause, West Virginia's Education Clause contains “thorough and efficient” language. [W. VA. CONST. art. XII, § 1](#). In considering an equal protection challenge to its education system, the Supreme Court of Appeals of West Virginia, much like this Court, reviewed decisions from other states with “thorough and efficient” education clauses, noting that the overall thrust of those decisions exemplified “ample authority that courts will enforce constitutionally mandated education quality

standards.” *Pauley*, 255 S.E.2d at 874. Based on that review, the court concluded:

We conceive that both our equal protection and thorough and efficient constitutional principles can be applied harmoniously to the [s]tate school financing system. Certainly, the mandatory requirement of “a thorough and efficient system of free schools,” found in Article XII, Section 1 of our Constitution, demonstrates that education is a fundamental constitutional right in this [s]tate.

Because education is a fundamental constitutional right in this [s]tate, then, under our equal protection guarantees any discriminatory classification found in the educational financing system cannot stand unless the [s]tate can demonstrate some compelling [s]tate interest to justify the unequal classification.

Id. at 878.

As discussed above in relation to the Education Clause claim, Minnesota's Constitution requires “the legislature to establish a general and uniform system of public schools” and “make such provisions ... as will secure a thorough and efficient system of public schools.” [Article XIII, section 1 of the Minnesota Constitution, MINN. CONST. art. XIII, § 1](#). In *Skeen*, the court determined that education is a fundamental right under Minnesota's Constitution, reasoning and concluding as follows:

*343 This court has recognized that fundamental rights are “[t]hose which have their origin in the express terms of the Constitution or which are necessarily to be implied from those terms.” *State v. Gray*, 413 N.W.2d 107, 111 (Minn. 1987) (quoting *Black's Law Dictionary* 607 (5th ed. 1979))....

In this case, the determination of whether education is a fundamental right under the Minnesota Constitution is a close question. While the state claims that *Gray* only recognizes “fundamental right” status for those mandates found in the Bill of Rights, not in other parts of the constitution, *Gray* does not appear to place any such limits on finding a fundamental right. Instead, *Gray* merely requires that a fundamental right be found in or implied from the terms of the state constitution. *Gray*, 413 N.W.2d at 111....

William Penn School District; Panther Valley School..., Not Reported in Atl....

[T]he Education Clause ... in fact places a “duty” on the legislature to establish a “general and uniform system” of public schools. This is the only place in the constitution where the phrase “it is the duty of the legislature” is used. This, combined with the sweeping magnitude of the opening sentence of the Education Clause—“The stability of a republican form of government depending mainly upon the intelligence of the people, it is the duty of the legislature to establish a general and uniform system of public schools”—provides further support for holding education to be a fundamental right.

Thus, on balance, we hold that education *is* a fundamental right under the state constitution, not only because of its overall importance to the state but also because of the explicit language used to describe this constitutional mandate. While a fundamental right cannot be found “[a]bsent constitutional mandate,” *Rodriguez*, 411 U.S. at 33, ... , the Education Clause *is* a mandate, not simply a grant of power.

505 N.W.2d at 313 (emphasis in original; internal citations omitted).¹¹⁴

Skeen is persuasive for purposes of determining what type of right education is because Minnesota looks to whether the right is expressed or implied in the constitution, *id.*, similar to Pennsylvania, *James*, 477 A.2d at 1306. It also recognizes the duty imposed on the legislature, *Skeen*, 505 N.W.2d at 313, which the parties do not dispute exists here. Moreover, while the opening sentence of Minnesota's Education Clause “has sweeping magnitude,” *id.*, it is the ending phrase in Pennsylvania's Constitution – “to serve the needs of the Commonwealth” – that shows the broad sweep of Pennsylvania's Education Clause, the history of which is replete with references to the importance of education to the continuation of the Commonwealth. It is also noteworthy that the court in *Skeen* rejected an argument that only rights in Minnesota's Bill of Rights could be fundamental. *Id.* Legislative Respondents make a similar argument, maintaining that education cannot be a fundamental right because it is not in the Pennsylvania Constitution's Declaration of Rights. The Declaration of Rights “is an enumeration of the fundamental individual human rights possessed by the people of this Commonwealth that are specifically exempted from the powers of the

Commonwealth government to diminish.” *League of Women Voters*, 178 A.3d at 803. However, at no time has the Pennsylvania Supreme Court held it is necessary for fundamentality.

*344 Thus, *Skeen* supports concluding education is a fundamental right, as does the Wyoming Supreme Court's decisions in *Washakie County School District* and *Campbell County School District*. In *Washakie County School District*, the Wyoming Supreme Court first recognized a fundamental right to education under the Wyoming Constitution, which includes “thorough and efficient” language. 606 P.2d at 333. Besides the education clause, the court found numerous other provisions of the Wyoming Constitution recognized the importance of education. *Id.* Several years later, in summarizing and reaffirming its earlier conclusion that education is a fundamental right, the court emphasized that the Wyoming Constitution “establish[es] education first as a right in the Declaration of Rights article and then detail[s] specific requirements in a separate Education article.” *Campbell Cnty. Sch. Dist.*, 907 P.2d at 1257-58 (citing article 1, section 23 and article 7, sections 1 and 9 of the Wyoming Constitution, WYO. CONST. art. 1, § 23, art. 7 §§ 1, 9). Although education is expressly included in the Wyoming Constitution's Declaration of Rights, in finding education was a fundamental right, the court did not rely on the Declaration of Rights provision in isolation, instead considering it together with the other, more specific education provisions. *Id.* Like Wyoming's Constitution, the provisions reflecting the importance of education is not isolated to the Education Clause, but is also apparent in those establishing the Secretary as the only unelected member of the Governor's cabinet mandated by the Constitution, PA. CONST. art. IV, §§ 1, 8(a), and including education funding in the general appropriations bill, PA. CONST. art. III, § 11.

Not all states with analogous education clauses have found education to be a fundamental right, though. The Court of Appeals of Maryland reached the opposite result in *Hornbeck*. In its equal protection analysis, the Maryland court rejected the federal test for identifying fundamental rights under *Rodriguez*, which mirrors Pennsylvania's fundamentality standard in that it turns on whether the right is identified, either explicitly or implicitly, in the constitution at issue, citing several other states that had done the same. *Hornbeck*, 458 A.2d at 784-85. The court reasoned “that state constitutions, unlike the federal constitution, are not of

William Penn School District; Panther Valley School..., Not Reported in Atl....

limited or delegated powers and are not restricted to provisions of fundamental import; consequently, whether a right is fundamental should not be predicated on its explicit or implicit inclusion in a state constitution.” *Id.* at 785. Nor, the court held, should fundamentality “turn alone on the relative desirability or importance of [the] right.” *Id.* at 786. Having rejected both the constitutional text and the importance of education as potential tests for fundamentality, the *Hornbeck* court concluded:

The directive contained in Article VIII of the Maryland Constitution for the establishment and maintenance of a thorough and efficient statewide system of free public schools is not alone sufficient to elevate education to fundamental status. Nor do the budgetary provisions of § 52 of Article III of the Constitution require that we declare that the right to education is fundamental. The right to an adequate education in Maryland is no more fundamental than the right to personal security, to fire protection, to welfare subsidies, to health care or like vital governmental services; accordingly, strict scrutiny is not the proper standard of review of the Maryland system of financing its public schools.

Id. The court went on to reject yet another test for fundamentality that had previously been applied in Maryland: that for rights “recognized as vital to the history and traditions of the people of this [s]tate.” *Id.* at 787 (quoting *Att’y Gen. of Maryland v. Waldron*, 426 A.2d 929, 947 (Md. 1981)). Without ever expressly articulating the standard it used to reach its conclusion that education is not a fundamental right,¹¹⁵ the court reasoned that application of strict scrutiny would almost certainly invalidate the state’s education funding scheme and opined that the courts generally have “avoided labeling a right as fundamental so as to avoid activating the exacting strict scrutiny standard of review.” *Id.* at 786. In other words, the *Hornbeck* court’s state equal protection reasoning and conclusion appears as though

it was expressly designed to avoid the application of strict scrutiny to the matter of education.

*345 The Court of Appeals of Maryland subsequently reaffirmed its determination in *Hornbeck* that the Maryland Constitution does not create:

a fundamental right [to education] for equal protection purposes, that the equal protection issue was therefore to be judged under the rational basis test, and that “the legislative objective of preserving and promoting local control over education is both a legitimate state interest and one to which the present financing system is reasonably related.”

Maryland State Bd. of Educ. v. Bradford, 875 A.2d 703, 707 (Md. 2005) (quoting *Hornbeck*, 458 A.2d at 788). Because the court in *Hornbeck* declined to consider whether a right is explicitly or implicitly based in the constitution when evaluating its fundamentality, 458 A.2d at 785, which is directly contrary to the Pennsylvania Supreme Court’s holding in *James*, 477 A.2d at 1306, the Court does not find *Hornbeck* persuasive.

Ohio is another state with a similarly-worded education clause that held education is not a fundamental right. *Walter*, 390 N.E.2d at 819. The Ohio Supreme Court “reject[ed] the ‘Rodriguez test’ [*i.e.*, whether a right to education is explicitly or implicitly guaranteed by the constitution,] for determining which rights are fundamental.” *Walter*, 390 N.E.2d at 818.¹¹⁶ The court explained “[w]hile the test may have some applicability in determining which rights are fundamental under the Constitution of the United States, it is not helpful in determining whether a right is fundamental under the Ohio Constitution.” *Id.* This was because the federal constitution “is one of delegated powers” and those powers not delegated are reserved to the states, whereas “the Ohio Constitution is not one of limited powers.” *Id.* The court went on to question whether the test in *Rodriguez* was even adequate for determining if rights are fundamental under the federal constitution. *Id.* at 819 (citing *Robinson I*, 303 A.2d at 282¹¹⁷). Without articulating any clear fundamentality standard, the court concluded:

Finally, because this cause deals with difficult questions of local and

William Penn School District; Panther Valley School..., Not Reported in Atl....

statewide taxation, fiscal planning and education policy, we feel that this is an inappropriate cause in which to invoke “strict scrutiny.” This case is more directly concerned with the way in which Ohio has decided to collect and spend state and local taxes than it is a challenge to the way in which Ohio educates its children.

Id.

*346 Similar to *Hornbeck*, 458 A.2d at 785, the court in *Walter* did not consider whether a right is explicitly or implicitly based in the constitution when evaluating its fundamentality, *Walter*, 390 N.E.2d at 818. Because the Pennsylvania Supreme Court in *James* has endorsed this standard, 477 A.2d at 1306, the Court does not find *Walter* persuasive or useful.

The parties and amici cite numerous other cases, with differently worded education clauses, for and against concluding education is a fundamental right. For instance, Petitioners and Law Professor Amici both cite decisions from Kentucky, North Carolina, and California to support their position that education is a fundamental right. In *Rose*, the Kentucky Supreme Court relied heavily on the history of its education clause, noting that the framers deemed education “the most vital question that can come before [the convention].” 790 S.W.2d at 205 (quoting III *Debates Constitutional Convention 1890 (Debates)* 4459). The framers considered education to be necessary “for training the [state’s children] to be good citizens”; “to assure that students develop patriotism and understand our government”; to ensure “the prosperity of a free people”; and because, without a sufficient education, the children “cannot hope to succeed.” *Id.* at 205-06 (quoting *Debates* at 4462-63). The court noted that the framers were particularly concerned to develop a “system of practical equality in which the children of the rich and poor meet upon a perfect level and the only superiority is that of the mind.” *Id.* at 205 (quoting *Debates* at 4460). Based on that analysis of Kentucky’s education clause, the *Rose* court held that “[a] child’s right to an adequate education is a fundamental one under our [c]onstitution,” *id.* at 212, and “that education is a

basic, fundamental constitutional right that is available to all children within this [c]ommonwealth,” *id.* at 215. The framers in Pennsylvania likewise believed that “every child ... should be properly educated and trained for the high and responsible duties of citizenship”; education was “absolutely necessary” for “the safety of the State and the safety of the government” and to “preserve republican institutions ... [and] our present form of government”; “the perpetuity of free institutions rests ... upon the intelligence of the people,” and “[i]n the uneducated ballot is found the nation’s greatest danger; but the educated ballot is the nation’s main tower of strength,” (FOF ¶¶ 56-57.)

North Carolina supplies another example of a high court finding education to be a fundamental right. In *Leandro*, the North Carolina Supreme Court examined two relevant constitutional provisions when confronted with a state equal protection challenge to that state’s education system. Article I, section 15 of the North Carolina Constitution provides: “The people have a right to the privilege of education, and it is the duty of the State to guard and maintain that right.” N.C. CONST. art. I, § 15. Under this clause, which is part of North Carolina’s constitutional declaration of rights, “[t]he right to a free public education is explicitly guaranteed.” *Leandro*, 488 S.E.2d at 254. However, the court did not rely exclusively on this provision. The court examined a clause from the constitution’s education article, which provides “The General Assembly shall provide by taxation and otherwise for a general and uniform system of free public schools, which shall be maintained at least nine months in every year, and wherein equal opportunities shall be provided for all students.” Article IX, section 2 of the North Carolina Constitution, N.C. CONST. art. IX, § 2. The high court held that these two provisions “combine to guarantee every child of this state an opportunity to receive a sound basic education in our public schools.” *Leandro*, 488 S.E.2d at 255. It explained that, even under the 1868 version of the second clause, before the addition of the “equal opportunities” portion in the 1970 constitution, the second clause manifested the constitutional framers’ intent “that every child ha[s] a fundamental right to a sound basic education which would prepare the child to participate fully in society as it existed in his or her lifetime.” *Id.* at 255-56. As discussed above, the Court is not persuaded that the Education Clause must appear in the Declaration of Rights to be fundamental; rather, the Court looks to whether the Constitution provides for the right explicitly or implicitly. *James*, 477 A.2d at 1306.

William Penn School District; Panther Valley School..., Not Reported in Atl....

Whether it is implicated by the Constitution can be discerned from the history of the Education Clause, which provides insight into the framers' intent. It is clear to the Court, for the reasons previously discussed, that the framers here intended a fundamental right.

*347 Petitioners and Law Professor Amici also argue that California's equal protection analysis is persuasive. The Court agrees. In *Serrano I*, the California Supreme Court held that education is a "fundamental interest" for both state and federal¹¹⁸ equal protection purposes. 487 P.2d at 1244, 1258-59. The court based its decision in part on an education provision from California's Constitution, which provides "[a] general diffusion of knowledge and intelligence being essential to the preservation of the rights and liberties of the people, the Legislature shall encourage by all suitable means the promotion of intellectual, scientific, moral, and agricultural improvement." Article IX, section 1 of the California Constitution, CAL. CONST. art. IX, § 1. However, to a greater extent than in other states, the fundamentality decision was based on broader inferences from other constitutional provisions and decisions from outside of that education article. The court focused on "the indispensable role which education plays in the modern industrial state." *Serrano I*, 487 P.2d at 1256. It emphasized the profound importance federal and state courts have placed on education, including in *Brown v. Board of Education*, 347 U.S. 483 (1954). *Serrano I*, 487 P.2d at 1256. It also reasoned by analogy from other constitutional rights, such as those of criminal defendants, and especially voting rights:

The analogy between education and voting is much more direct: both are crucial to participation in, and the functioning of, a democracy. Voting has been regarded as a fundamental right because it is "preservative of other basic civil and political rights" *Reynolds v. Sims*, 377 U.S. 533 ... [(1964)]; see *Yick Wo v. Hopkins*, ... 118 U.S. 356 ... [(1886)]. The drafters of the California Constitution used this same rationale—indeed, almost identical language—in expressing the importance of education [in] Article IX, section 1 At a minimum, education makes more meaningful the casting of a ballot. More significantly, it is likely to provide the understanding of, and the interest in, public issues which are the spur to involvement in other civic and political activities.

....

We are convinced that the distinctive and priceless function of education in our society warrants, indeed compels, our treating it as a "fundamental interest."

Serrano I, 487 P.2d at 1258. The connection between education and voting has also been recognized in Pennsylvania: "[i]n the uneducated ballot is found the nation's greatest danger; but the educated ballot is the nation's main tower of strength," (FOF ¶ 57 (quoting the Constitutional Debates).) Our Supreme Court has noted this same critical connection. See *William Penn II*, 170 A.3d at 424 (framers of Education Clause "appear to have linked the importance of public education to the success of democracy").

Besides Minnesota, Maryland, and Ohio, discussed above, Legislative Respondents also cite a number of other cases, including from Colorado, New York, and Idaho, that concluded education was not a fundamental right under those states' respective constitutions. In *Lujan*, the Supreme Court of Colorado reversed the trial court, which had held education was a fundamental right.¹¹⁹ Similar to the Maryland court in *Hornbeck* and the Ohio court in *Walter*, the Colorado court in *Lujan* rejected the "*Rodriguez* test," which involves an inquiry into whether the right is explicitly or implicitly guaranteed by the Constitution, similar to Pennsylvania's *James* test.¹²⁰ *Lujan*, 649 P.2d at 1017. The court's reasoning mirrored that of *Walter*, noting the differences between the federal and state constitutions and questioning the applicability of *Rodriguez*, even to the United States Constitution. *Lujan*, 649 P.2d at 1017 & n.12. Therefore, for the same reasons the Court found *Hornbeck* and *Walter* unpersuasive, it also finds *Lujan* unpersuasive.

*348 The Court of Appeals of New York recognized the importance of education but determined that "does not automatically entitle it to classification as a 'fundamental constitutional right' triggering a higher standard of judicial review for purposes of equal protection analysis." *Nyquist*, 439 N.E.2d at 366. The court also declined to recognize the right to education as an important one subject to intermediate scrutiny under its state constitution, citing the United States Supreme Court's reasoning in *Rodriguez* and its own decision in *Matter of Levy*, 345 N.E.2d 556 (N.Y. 1976). *Nyquist*, 439 N.E.2d at 365. The court explained other matters of significant public interest, such as public assistance programs, have similarly been reviewed under the rational

William Penn School District; Panther Valley School..., Not Reported in Atl....

basis standard. *Id.* at 366. The court further explained that the highest scrutiny has been reserved for cases involving intentional discrimination against suspect classes. *Id.* To the extent the New York Constitution imposed a duty on the legislature to maintain and support the education system, the court drew a distinction between the federal constitution, which delegates specific authority, and the state constitution, which does not serve as a limit on power, similar to the court in *Walter. Nyquist*, 439 N.E.2d at 366 n.5. The court concluded there was “[n]o classification of persons” in the case before it, but rather “[t]he claim is of discrimination between property-poor and property-wealthy school districts.” *Id.* at 366. The Court does not find the reasoning of *Nyquist* persuasive. As discussed above, a review of the Education Clause, coupled with other provisions of the Pennsylvania Constitution, and its history illustrates that, in addition to imposing a duty on the General Assembly, a corresponding right to education was created.

In *Evans*, the Supreme Court of Idaho reaffirmed its holding from *Thompson* that education was not a fundamental right.¹²¹ *Evans*, 850 P.2d at 731. In doing so, the court expressly rejected the *Rodriguez* definition of a fundamental right and pronounced its own standard: “the ‘fundamental rights’ found in our state constitution are those expressed as a positive right.” *Evans*, 850 P.2d at 732. While this may be the standard in Idaho, the Pennsylvania Supreme Court set forth its own contrary standard in *James*, which is derivative of *Rodriguez*. Therefore, the Court is not persuaded by Idaho’s approach.

In summary, the bulk of other jurisdictions that have considered whether education is explicitly or implicitly guaranteed by their constitutions, which is the standard for determining fundamentality in Pennsylvania under *James*, have found education is a fundamental right, much like this Court.

2. Level of Scrutiny

Having concluded education is a fundamental right in Pennsylvania, generally, the Court would apply a strict scrutiny review. However, Legislative Respondents make an alternative argument that even if the Court determines education is a fundamental right, rational basis review

may still apply. For support, Legislative Respondents rely primarily on *Skeen* and *Kukor*.

In *Skeen*, the court distinguished between the two separate sentences of Minnesota’s education clause, and ultimately applied different levels of scrutiny to each part of the clause. The court held that the first sentence—that “the legislature [] establish a general and uniform system of public schools”—supports the finding that there is a fundamental right to education. *Skeen*, 505 N.W.2d at 313. The court then defined the contours of that fundamental right, holding that it entitles the people to a system of education that “provides an **adequate** education to all students.” *Id.* at 315 (emphasis added). It is in evaluating that specific right—“to a general and adequate system of education”—that the “court must employ the strict scrutiny test.” *Id.* The court then concluded that Minnesota’s system satisfied strict scrutiny, noting a critical concession by the plaintiffs:

In this case, **the plaintiffs concede that they continue to receive an adequate education**, thereby **satisfying the fundamental right** to a general and adequate system of education. With respect to uniformity, the funding system in question provides the same amount of funding for each student. The equalization process the state uses to arrive at the basic revenue figure meets, if not exceeds, the constitutional requirements of a “general and uniform” system of public schools. Because the present system provides uniform funding to each student in the state in an amount sufficient to generate an adequate level of education **which meets all state standards**, the state has satisfied its constitutionally-imposed duty of creating a “general and uniform system of education.” Therefore, the state’s present system of education withstands strict scrutiny analysis.

*349 *Id.* (emphasis added).

The court then characterized the second sentence of the Minnesota education clause, which requires the funding of “a thorough and efficient system” of schools, as relating more narrowly to education finance and tax policy, not to the fundamental right to education. *Id.* at 316. After distinguishing baseline adequacy from funding mechanisms in this way, the court held

that challenges to the state's **financing** of education beyond what is necessary to provide an adequate level of education which meets all state standards must be evaluated, not under strict scrutiny, but rather under the rational basis test, and we will not set aside the legislature's determination unless the funding system employed somehow impinges upon the adequacy with which the state meets the fundamental right to a general and uniform education.

Id. (emphasis in original). The court then declined to set aside the state's funding scheme because it “clearly satisfies the rational basis test.” *Id.* The court distinguished “cases which have struck down educational financing systems under state equal protection clauses[, which] have involved either wide disparities in funding or outright inadequacies, neither of which exist[ed] in the present case.” *Id.* at 317-18.

In a concurring and dissenting opinion, Justice Page observed:

The court goes to great lengths to distinguish the fundamental right to an education from education funding, but there is no meaningful distinction between the two. Nothing in the Education Clause of our constitution suggests that the fundamental right to an education applies only to the education itself, not to the money needed to fund that education. Education does not occur in a vacuum; it is achieved as the result of public expenditures. Any system which provides greater expenditures for some children over others should undergo the most exacting scrutiny.

Id. at 322 (Page, J., concurring in part and dissenting in the judgment).¹²²

*350 Recently, Minnesota's high court allowed an adequacy challenge to its education system to go forward, holding that the adequacy question is justiciable under both the education clause and state equal protection. See *Cruz-Guzman*, 916 N.W.2d at 10-12. In so holding, the court explained that

[t]he fundamental right recognized in *Skeen* was not merely a right to anything that might be labeled as “education,” but rather, a right to a general and uniform system of education that is thorough and efficient, that is supported by sufficient and uniform funding, and that provides an adequate education to all students in Minnesota.

Id. at 11. The court conceded that the Minnesota education clause does not explicitly require adequacy, but emphasized that the purpose of the clause, as evidenced by its text, is to “equip Minnesotans to discharge their duties as citizens intelligently,” suggesting that any system that failed to do this would not pass constitutional muster. *Id.* at 12.

In *Kukor*, the Wisconsin Supreme Court examined a state equal protection claim based on Wisconsin's education clause, which provides, in relevant part, that “[t]he legislature shall provide by law for the establishment of district schools, which shall be **as nearly uniform as practicable**” *Article X, section 3 of the Wisconsin Constitution, WISC. CONST. art. X, § 3* (emphasis added). The court held that even this unusually deferential education clause, together with the education article of the Wisconsin Constitution, makes education a fundamental right. *Kukor*, 436 N.W.2d at 579. It cited an earlier decision that had reviewed the history of Wisconsin's constitutional education provisions and concluded: “The involvement of the legislature from the framing of the constitution to the present and the many cases which have come before this court, emphasize that the equal opportunity for education **as defined by art. X,**

William Penn School District; Panther Valley School..., Not Reported in Atl....

sec. 3, is a fundamental right.” *Kukor* 436 N.W.2d at 579 (quoting *Buse v. Smith*, 247 N.W.2d 141, 149 (Wisc. 1976)) (emphasis in original). The *Kukor* court then narrowly defined the fundamental right at issue, noting “that ‘equal opportunity for education’ does not mandate absolute equality in districts’ per-pupil expenditures. In fact, such complete equalization is constitutionally prohibited to the extent that it would necessarily inhibit local control.” *Id.*

Like the court in *Skeen*, however, the *Kukor* court held that “notwithstanding our recognition that education is, to a certain degree, a fundamental right, we apply ... a rational basis standard because the rights at issue in the case before the court are premised upon spending disparities and not upon a complete denial of educational opportunity within the scope of” Wisconsin’s education clause. *Id.* at 580. In other words, the court applied rational basis review not only because the plaintiffs were asserting a challenge to the state’s school financing system specifically, but also because the court found that the nature of the deficiencies alleged by the plaintiffs did not rise to the level of a denial of educational opportunity under Wisconsin’s education clause, and thus “no fundamental right [was] implicated in the challenged spending disparity.” *Id.* at 579. And the court concluded that all children were receiving a “basic” education; had that not been the case, the court’s deference to the legislature via rational basis review would “abruptly cease.” *Id.* at 582.

*351 As discussed in the previous section, Minnesota (*Skeen*) and Wisconsin (*Kukor*) adopt a fundamentality standard similar to Pennsylvania’s, and they likewise conclude that the right to education is fundamental. However, they applied a rational basis review rather than strict scrutiny to the equal protection challenges in those cases, for a specific reason: the plaintiffs in those cases did not contest the adequacy of the education system, but only its specific taxation and funding mechanisms. Thus, the **rationale** of these state courts is highly persuasive as to fundamentality because their fundamentality standards match Pennsylvania’s, but the **results** are distinguishable as they are based on more limited challenges than those presently before the Court, and, therefore, the Court finds them of limited value.

Here, unlike the plaintiffs in those cases, Petitioners challenge educational adequacy, as well as equality. It is not merely a challenge to “financing of education **beyond what is necessary** to provide an adequate level of education,” as was

the case in *Skeen*, 505 N.W.2d at 316 (emphasis omitted, bold emphasis added), but also whether that funding is **adequate in the first instance**. Much of Petitioners’ evidence focused on their alleged inability to adequately educate students. Petitioners also raise funding and local taxation arguments, but these are in addition to, not in place of, their adequacy claims. Second, Pennsylvania’s fundamentality standard is a liberal one, asking, as the *Rodriguez* Court did of the U.S. Constitution, whether the right at issue has its source, “explicitly or implicitly,” in our Constitution. To exclude education—expressly enshrined in our Constitution’s text and well-documented history—from the pantheon of fundamental rights subject to strict scrutiny would require a wholesale replacement of our current fundamentality caselaw.

Accordingly, considering both the *James* test for fundamentality and the *Edmunds* factors where appropriate, the Court holds Petitioners’ equal protection claim is based on a fundamental right to education, the alleged impingement of which should be reviewed under strict scrutiny.

IX. WHETHER RESPONDENTS VIOLATED THE EQUAL PROTECTION CLAUSE

A. Parties’ Arguments

1. Petitioners

Petitioners argue Respondents have violated Petitioners’ right to equal protection of the law. They argue the evidence shows “the General Assembly has adopted a school funding system that impermissibly impinges upon th[e] fundamental right [to education], creating widespread resource inequality and depriving students in low-wealth districts of their entitlement to a high-quality education.” (Petitioners’ Br. at 75.) Petitioners assert the evidence demonstrates low-wealth districts that have high-need students receive fewer resources than their high-wealth counterparts who do not face the same challenges. (*Id.* at 76.) Flaws that Petitioners identify with the funding system include the high reliance on local taxes, inadequate state funding, and regressive distribution formulas that do not take need into account. (*Id.*) As a result, students who attend low-wealth districts “are treated in radically different—and adverse—ways from their peers in affluent districts,” which is illustrated through wide achievement gaps. (*Id.* at 76-77, 79-80.)

William Penn School District; Panther Valley School..., Not Reported in Atl....

Petitioners further argue that Respondents produced no evidence that the funding disparity is “necessary to advance a compelling state interest.” (*Id.* at 75 (quoting *William Penn II*, 170 A.3d at 458); *see also id.* at 82.) Petitioners contend that Legislative Respondents proffer two reasons for the system: (1) local control, and (2) the need to fund other, non-constitutional priorities. (*Id.* at 82.) Neither, according to Petitioners, justifies the disparities. (*Id.* at 82-83.) Petitioners also argue, in the alternative, that Respondents would not meet their burden under intermediate or rational basis scrutiny.

2. Legislative Respondents

*352 Legislative Respondents primarily argue that the rational basis test is satisfied. They contend local control is an important feature of the education system as it “is designed to promote and encourage the involvement of communities and families in the public education system.” (President Pro Tempore’s Br. at 106; *see also* Speaker’s Br. at 88.) Further, Legislative Respondents argue that “Pennsylvania’s system of school funding, which relies, in part, on local funding, is reasonably related to promoting this state interest.” (President Pro Tempore’s Br. at 106; *see also* Speaker’s Br. at 88-89.) Local control is advantageous, according to Legislative Respondents, because community members comprise local school boards and, as a result, they are likely to be responsive to community concerns. (President Pro Tempore’s Br. at 108; Speaker’s Br. at 89.) It also promotes flexibility and competition by allowing local school districts to decide how best to raise and expend funds. (President Pro Tempore’s Br. at 108-09; Speaker’s Br. at 89.) They note that other states’ courts, such as Colorado and Ohio, have recognized local control as a rational basis for upholding a school finance system heavily dependent on local taxes. (Speaker’s Br. at 89-90 (citing *Lujan*, 649 P.2d at 1023, *Walter*, 390 N.E.2d at 820, and others).) Speaker argues “[t]he question is not whether the Court believes that the system adopted by the General Assembly is the ideal one, but whether there is a rational basis for it.” (Speaker’s Br. at 91.) Alternatively, Legislative Respondents argue that even if intermediate or strict scrutiny is applied, the system also passes those tests. (President Pro Tempore’s Br. at 109;¹²³ Speaker’s Br. at 93-101.) As for intermediate scrutiny, Legislative

Respondents argue Petitioners presented no evidence that anyone was excluded from their right to education as a result of any classification. (Speaker’s Br. at 94-95.) As examples, Legislative Respondents point to the testimony of Student Petitioners, Mr. Horvath and S.A., who graduated from high school, attended or planned to attend postsecondary school, held jobs, and engaged in community service and/or civic activities. (*Id.* at 95.) Nor have Student Petitioners shown, according to Legislative Respondents, that any struggles they experienced were caused by the funding system and not some other cause. (*Id.* at 96.) Assuming there was such evidence, Legislative Respondents argue “the challenged funding scheme is ‘closely related’ to the legitimate objective of maintaining and supporting the system of public education in a manner that preserves local control over public schools.” (*Id.* at 97.) Legislative Respondents assert the Court cannot “substitut[e] its own public policy judgment for that of the people’s elected representatives in the General Assembly.” (*Id.* (citing *Zauflik*, 104 A.3d at 1123).) Legislative Respondents assert that

while reasonable minds can differ as to the best method for raising and distributing education funds, it is clear ... that the Commonwealth’s system of funding public education is “closely related” to the objectives of providing a consistent source of funding for public schools, while preserving the legitimate and long-recognized interest of local control (including the ability of communities to spend their tax dollars for the benefit of their own local schools).

(*Id.* at 99.)

Legislative Respondents further assert “Petitioners do not dispute that the Fair Funding Formula, which was enacted after they filed their Petition for Review in this case, is a reasonable method for distributing state funds,” but rather “complain about certain ‘limitations’ to the Fair Funding Formula that *some* of the Petitioners do not like.” (*Id.* (emphasis in original).) For example, Legislative

William Penn School District; Panther Valley School..., Not Reported in Atl....

Respondents rebut Petitioners' criticism of the hold harmless provision, noting many school districts, as well as Petitioner PARSS, supported the provision. (*Id.* at 100.)

3. Petitioners' Reply

Petitioners respond that, instead of explaining why the disparities are constitutional, Legislative Respondents "choose to devote several pages of their brief to defending the system in a vacuum, arguing that because the system has always had local control, local control can always justify the disparities of the system." (Petitioners' Reply Br. at 63.) According to Petitioners, local control does not justify the disparities, and Legislative Respondents failed to meet their burden of proving that "local control, and the disparities it countenances, are necessary to advance their vague[,] purported objectives of promoting the 'involvement of communities' or 'competition' in the first place." (*Id.*)

B. Discussion

As discussed above, the Court concludes education is a fundamental right under the Pennsylvania Constitution and, as a result, the equal protection challenge involving education will be examined under strict scrutiny. Under strict scrutiny "a classification 'must be justified by a compelling government interest and ... must be strictly construed.'" *Fouse*, 204 A.3d at 1035 (quoting *Zauflik*, 72 A.3d at 790-91).

Based upon the evidence presented, it is evident to the Court that the current system of funding public education has disproportionately, negatively impacted students who attend schools in low-wealth school districts. This disparity is the result of a funding system that is heavily dependent on local tax revenue, which benefits students in high-wealth districts. (FOF ¶¶ 293, 295, 379.) It is also impacted by a funding formula that does not adequately take into account student needs, which are generally higher in low-wealth districts. (*See, e.g.*, FOF ¶¶ 824, 1702.) As a result, students in low-wealth districts do not have access to the educational resources needed to prepare them to succeed academically, socially, or civically. (*See* Part VII.B.2.a, *supra*.) This is illustrated by the achievement gaps between students in low-wealth and high-wealth districts. (*See* Part II.H.) It is also evidenced by gaps in graduation rates, postsecondary attainment, college graduation rates, and

numerous other outcomes, discussed at length, *supra*, in relation to Petitioners' Education Clause claim.

*353 The sole reason proffered by Legislative Respondents to justify the classification is that the current system promotes local control.¹²⁴ This Court, much like the Pennsylvania Supreme Court and numerous other courts across the nation, is not persuaded that this is a compelling government interest that justifies the distinction. In *William Penn II*, the Supreme Court stated, "recitations of the need for local control cannot relieve the General Assembly of its exclusive obligation under the Education Clause." 170 A.3d at 442 n.40. The Supreme Court further noted "[n]umerous courts and commentators have observed that this relationship [between school funding and local control] is typically conclusory in its presentation[] and disregards the limitations on local prerogatives caused by a paucity of financial resources." *Id.* *William Penn II* cited, as an example, the Supreme Court of Arkansas's decision in *DuPree v. Alma School District No. 30 of Crawford County*, 651 S.W.2d 90 (Ark. 1983). The *DuPree* court acknowledged that there were courts which accepted local control as a justification, under the rational basis test, and found no equal protection violation, *see, e.g., Nyquist*, but found "two fallacies" in their reasoning:

First, to alter the state financing system to provide greater equalization among districts does not in any way dictate that local control must be reduced. Second, as pointed out in *Serrano [II]*, ... 557 P.2d at 948, "The notion of local control was a 'cruel illusion' for the poor districts due to limitations placed upon them by the system itself. ... Far from being necessary to promote local fiscal choice, the present system actually deprives the less wealthy districts of the option." Consequently, even without deciding whether the right to public education is fundamental, we can find no constitutional basis for the present system, as it has no rational bearing on the educational needs of the districts.

DuPree, 651 S.W.2d at 93.

The Supreme Court of Tennessee reached a similar conclusion in *Tennessee Small School Systems v. McWherter*, 851 S.W.2d 139 (Tenn. 1993). Like Legislative Respondents in this matter, the defendants in *McWherter* "rest[ed] their case, in large measure, upon the contention that the benefits of local control of public schools justify the inequities in educational

William Penn School District; Panther Valley School..., Not Reported in Atl....

opportunities provided.” *Id.* at 154. Citing *DuPree* and *Serrano II*, the Tennessee high court also found the concept of local control illusory. *McWherter*, 851 S.W.2d at 155. The “more serious flaw in the defendants’ argument,” however, was the lack of evidence “that a discriminatory funding scheme is necessary to local control.” *Id.* To the extent the defendants argued “[t]he one who pays the educational piper generally gets to call the educational tune,” the court aptly noted that the Tennessee legislature grants the authority to tax and without such authority, local authorities cannot do so. *Id.* at 155-56 (quoting *Kelley v. Bd. of Educ.*, 836 F.2d 986, 999 (6th Cir. 1987)). Accordingly, the court held the funding scheme could not satisfy even the lowest standard, rational basis. *Id.* at 156. See also *Bismarck Pub. Sch. Dist.*, 511 N.W.2d at 261 (rejecting local control as justification for funding disparities because “[t]he present method of distributing funding for education fails to offer any realistic local control to many districts”).

*354 The Court finds the reasoning of these cases persuasive. First, Legislative Respondents have not identified how local control would be undermined by a more equitable funding system. Second, and just as persuasive, is that local control is a misnomer for the low-wealth districts. Petitioners presented evidence that low-wealth districts cannot generate comparable amounts of tax revenue as their wealthier counterparts. (FOF ¶¶ 1883-1884, 1889.) Unable to raise the funds they need, school leader after school leader testified to being faced with a Hobson’s choice. (See, e.g., FOF ¶¶ 598, 614, 1153, 1582.) Of course, complete local control is belied by Legislative Respondents’ own proposed findings of fact that detail the extensive statutory and regulatory regime governing public education in the Commonwealth. (See, e.g., Legislative Respondents’ Proposed Findings of Fact ¶¶ 68-69 (discussing the School Code), 102-158 (explaining the Department’s and State Board’s roles in public education), 159-176 (detailing the academic standards established by the state).) While the Commonwealth does not necessarily dictate how local districts meet the academic standards and certain powers are reserved for local school boards, (FOF ¶¶ 72, 151-152), this reservation of power is meaningless if the local districts do not have financial resources to fund such initiatives. The Court does not question the importance of local control; rather, it questions whether there can be meaningful local control when low-wealth districts are constantly faced with making tough decisions regarding which programs or resources to cut or which students, all in

need of additional resources, receive access to the precious few resources these districts can afford to provide. Providing equitable resources would not have to detract from local control, particularly for the districts which can afford to generate the resources they need; local control could be promoted by providing low-wealth districts with real choice, instead of choices dictated by their lack of needed funds. As stated in *DeRolph*, “rather than following the constitutional dictate that is the *state’s* obligation to fund education ... , the legislature has thrust the majority of responsibility on local school districts.” 677 N.E.2d at 745 (emphasis in original). “For some districts to supply the barest necessities and others to have programs generously endowed does not meet the requirements of the constitution.” *DuPree*, 651 S.W.2d at 93.

For the reasons stated herein, the Court concludes Legislative Respondents have not proffered a compelling government interest to justify the disparities between low-wealth and high-wealth districts.¹²⁵ Accordingly, Petitioners are also entitled to judgment in their favor on Count II.

X. CONCLUSION

For the first time in Pennsylvania jurisprudence, the Pennsylvania Supreme Court in *William Penn II* held that the constitutional issues raised in this school funding challenge could be heard by the Court without offending the political question doctrine. Thus, this matter raises multiple issues of first impression.

First, the Court was asked to interpret the Education Clause and what it means to “provide for the maintenance and support of a thorough and efficient system of public education to serve the needs of the Commonwealth.” PA. CONST. art. III, § 14. Upon consideration of the plain language of the Education Clause, “as understood by the people when they voted on its adoption,” *Robinson Township*, 83 A.3d at 943, the Court concludes it requires that every student receive a meaningful opportunity to succeed academically, socially, and civically, which requires that all students have access to a comprehensive, effective, and contemporary system of public education. Not only is this interpretation consistent with the Education Clause’s plain language, it is also in accord with the Education Clause’s history and with how other jurisdictions have interpreted similarly-worded education clauses.

William Penn School District; Panther Valley School..., Not Reported in Atl....

Next, after hearing months of testimony, reviewing voluminous amounts of evidence, and rendering findings of fact, the Court applied the constitutional standard to these facts. The findings regarding inputs, such as funding, courses, curricula and programs, staffing, facilities, and instrumentalities of learning, demonstrate manifest deficiencies between low-wealth districts, such as Petitioner Districts, and their more affluent counterparts. Educators credibly testified to lacking the very resources state officials have identified as essential to student achievement, some of which are as basic as safe and temperate facilities in which children can learn. Educators also testified about being forced to choose which few students would benefit from the limited resources they could afford to provide, despite knowing more students needed those same resources. The effect of this lack of resources shows in the evidence of outcomes, which also must be considered to determine if the system is “thorough and efficient” and to give effect to the phrase “to serve the needs of the Commonwealth.”

*355 Petitioners presented extensive credited evidence demonstrating wide achievement gaps on the state assessments between students who attend schools in a low-wealth district and their peers who attend schools in a more affluent district. These achievement gaps widen when student subgroups – Blacks, Hispanics, ELL students, economically-disadvantaged, and other historically underperforming students – are examined. Similar gaps were shown with regard to high school graduation rates, postsecondary enrollment and attainment, and other measures, such as rigorous courses of study. Accordingly, the Court concludes Petitioners satisfied their burden of establishing the Education Clause was clearly, palpably, and plainly violated because of a failure to provide all students with access to a comprehensive, effective, and contemporary system of public education that will give them a meaningful opportunity to succeed academically, socially, and civically.

In order to resolve Petitioners’ equal protection claim, the Court examined whether the Pennsylvania Constitution contains a right to education, and, if so, the nature of that right, and, concomitantly, what level of scrutiny would then apply to that claim. Although other Pennsylvania courts have perhaps inconsistently referred to education as a right, and even a fundamental one, the Pennsylvania Supreme Court made clear that the issue was unsettled. *William Penn II*, 170 A.3d at 461 (“We do not read any of our prior cases as settling

whether the Pennsylvania Constitution confers an individual right to education—and, if so, of what sort.”). Based upon the plain language of the Constitution and the history of the Education Clause, this Court concludes the right to public education is a fundamental right explicitly and/or implicitly derived from the Pennsylvania Constitution.

Finally, the Court interpreted and applied the Equal Protection Clause to the credited facts in this case. Applying strict scrutiny, the Court concludes Petitioners have established an equal protection violation. No compelling government purpose has been espoused for the disparities identified between low-wealth and high-wealth school districts. Even applying the less stringent intermediate or rational basis scrutiny, the Court would conclude that there is no rational basis for such disparities.

“Challenging as the previous issues are, in complexity they pale by comparison to the final question: remedy.” *Campaign for Fiscal Equity*, 801 N.E.2d at 344. The Court is in uncharted territory with this landmark case. Therefore, it seems only reasonable to allow Respondents, comprised of the Executive and Legislative branches of government and administrative agencies with expertise in the field of education, the first opportunity, in conjunction with Petitioners, to devise a plan to address the constitutional deficiencies identified herein. Although no Pennsylvania court has ever reached the point of fashioning a remedy as to how to address school funding inadequacies, courts from other jurisdictions have taken similar approaches to the one this Court is taking. *See, e.g., Abbeville Cnty. Sch. Dist.*, 767 S.E.2d at 176 (“refusing to provide the General Assembly with a specific solution to the constitutional violation”); *DeRolph*, 677 N.E.2d at 747 (declining to “instruct the General Assembly as to the specifics of the legislation it should enact”); *Rose*, 790 S.W.2d at 216 (“The General Assembly must provide adequate funding for the system. How they do this is their decision.”). This approach respects the notion that the Education Clause contemplates that future legislatures must be free to experiment and adjust the state’s public-education system, thereby reducing concerns of the judiciary encroaching upon legislative prerogative.

Throughout trial, the Department, Board, and expert witnesses identified numerous strategies that improve student outcomes from which Respondents can take guidance. Nothing in the foregoing opinion undermines the ability

William Penn School District; Panther Valley School..., Not Reported in Atl....

of the General Assembly to continue providing local control to school boards or infringes on any of the sister branches of government's authority. Nor does it require reform to be entirely financial. See *Campaign for Fiscal Equity*, 801 N.E.2d at 347 (acknowledging there are reform options beyond financial reform). The options for reform are virtually limitless. The only requirement, that imposed by the Constitution, is that **every** student receives a **meaningful opportunity** to succeed academically, socially, and civically, which requires that **all** students have access to a comprehensive, effective, and contemporary system of public education.¹²⁶

*356 The importance of this matter is not lost on the Court. For months, extraordinarily skilled counsel zealously advocated on their clients' behalf; dedicated and caring educators told of the plights they, their students, and their districts constantly face; students bravely testified as to their experiences and how ill-prepared they felt for adult life; Department and Board witnesses passionately spoke of their efforts to ensure all students reach their full potential; and experts, many extremely knowledgeable and respected in their fields, ably explained their opinions and fiercely defended them.

The Court's decision today was reached after careful thought and thorough deliberation of the law and the volumes of evidence presented. While the Court regrets having to point out how and where the system is deficient, a discussion of the system's deficiencies was a necessary component of the Court's analysis. The Court strived to not focus solely on the negatives, but to highlight the many achievements of the students, districts, and Respondents, all of whom are deserving of some praise for what has been accomplished thus far. The discussion of the evidence was not intended to diminish these achievements or be critical of anyone.

All witnesses agree that every child can learn. It is now the obligation of the Legislature, Executive Branch, and educators, to make the constitutional promise a reality in this Commonwealth.

ORDER

NOW, February 7, 2023, following trial in this matter, Petitioners' Petition for Review is **GRANTED**. The Court **DECLARES** as follows:

1. The Education Clause, [article III, section 14 of the Pennsylvania Constitution](#), requires that every student receive a meaningful opportunity to succeed academically, socially, and civically, which requires that all students have access to a comprehensive, effective, and contemporary system of public education;
2. Respondents have not fulfilled their obligations to all children under the Education Clause in violation of the rights of Petitioners;
3. Education is a fundamental right guaranteed by the Pennsylvania Constitution to all school-age children residing in the Commonwealth;
4. [Article III, section 32 of the Pennsylvania Constitution](#) imposes upon Respondents an obligation to provide a system of public education that does not discriminate against students based on the level of income and value of taxable property in their school districts;
5. Students who reside in school districts with low property values and incomes are deprived of the same opportunities and resources as students who reside in school districts with high property values and incomes;
6. The disparity among school districts with high property values and incomes and school districts with low property values and incomes is not justified by any compelling government interest nor is it rationally related to any legitimate government objective; and
7. As a result of these disparities, Petitioners and students attending low-wealth districts are being deprived of equal protection of law.¹

All Citations

Not Reported in Atl. Rptr., 2023 WL 1990723

Footnotes

- 1 Benjamin Franklin, *The Way to Wealth* (1758).
- 2 The districts are Greater Johnstown School District, the School District of Lancaster, Panther Valley School District, Shenandoah Valley School District, Wilkes-Barre Area School District, and William Penn School District (collectively, Petitioner Districts).
- 3 Sheila Armstrong is the mother of Student Petitioner S.A., a former student of the School District of Philadelphia. Tracey Hughes is the mother of Student Petitioner P. Michael Horvath, a former student of Wilkes-Barre Area School District. Bryant and Jamella Miller are parents of K.M., a former student of William Penn School District.
- 4 Organizational Petitioners are the Pennsylvania Association of Rural and Small Schools and the NAACP-Pennsylvania State Conference.
- 5 Over the course of this litigation, there have been numerous changes in administrations that have resulted in multiple substitutions of party respondents pursuant to [Pennsylvania Rule of Appellate Procedure 502\(c\)](#), [Pa.R.A.P. 502\(c\)](#). For ease of reference, the Court refers to Respondents by title, unless otherwise specified. Respondents include the Pennsylvania Department of Education (Department or PDE), the Governor, and the Secretary of the Department of Education (Secretary) (collectively, Executive Respondents); the Speaker of the Pennsylvania House of Representatives (Speaker) and the President Pro Tempore of the Pennsylvania Senate (President Pro Tempore) (collectively, Legislative Respondents); and the Pennsylvania State Board of Education (State Board or Board). Post trial, Bryan D. Cutler (Intervenor), who served as Speaker of the Pennsylvania House of Representatives at the time of trial and currently serves as Leader of the Republican Caucus of the Pennsylvania House of Representatives, sought and was granted leave to intervene in this matter in his official capacity. Intervenor adopts the pleadings, briefs, and arguments previously submitted by him and his predecessors.
- 6 Mr. Horvath is identified in the Petition for Review as P.M.H.
- 7 At the time the Petition for Review was filed, Tyesha Strickland, parent of E.T., a minor; Angel Martinez, parent of A.M., a minor; and Barbara Nemeth, parent of C.M., a minor, were also named Petitioners. They have since withdrawn from this matter and have been dismissed from the case. (See Orders dated August 15, 2019, and August 12, 2021.)
- 8 Act of April 9, 1929, P.L. 177, as amended, [71 P.S. § 352\(a\)](#). Section 1302 was added by Section 1 of the Act of May 15, 1945, P.L. 540.
- 9 Act of March 10, 1949, P.L. 30, as amended. Section 2603-B was added by Section 5 of the Act of March 30, 1988, P.L. 321.
- 10 Pa. Laws of 1833-34, No. 102.
- 11 The act gave districts “the choice of participating in the new system or continuing to operate under the 1809 mandate of providing only for the education of the poor.” *PARSS*, slip op. at 92.

William Penn School District; Panther Valley School..., Not Reported in Atl....

- 12 During this time, other states, such as Ohio, Michigan, Connecticut, and Massachusetts, also sought to institute a universal system of public education, led in large part by Horace Mann, who some consider the father of public education. See *PARSS*, slip op. at 93-96.
- 13 Pursuant to its February 22, 2022 Order, the Court may take judicial notice of current and prior versions of the Pennsylvania Constitution and related documents, which include the 1873 Convention debates and historical sources related to the 1968 Constitution. Courts routinely take judicial notice of legislative history, including the historical sources relevant here. See generally *Pa. Sch. Bds. Ass'n, Inc. v. Commonwealth Ass'n of Sch. Adm'rs, Teamsters Loc. 502*, 805 A.2d 476, 484 (Pa. 2002); see also, e.g., *William Penn II*, 170 A.3d at 418-19 & n.6 (citing the 1873 Convention debates and related historical facts).
- 14 As will be discussed below, these provisions were ultimately consolidated into one section.
- 15 One of Pennsylvania's 500 school districts, Bryn Athyn, does not operate any schools and had only 1 student as of the 2019-20 school year. (Stip. ¶ 2 n.1.) For this reason, some of the testimony and exhibits presented at trial (including certain summary and demonstrative exhibits) allude to 499 school districts.
- 16 Section 1703-A was added by Section 1 of the Act of June 19, 1997, P.L. 225.
- 17 All of the “functions, powers and duties of the Department of Public Instruction” were transferred to the Department by Section 3 of Act 74, 71 P.S. § 1039.
- 18 The Department's SAS is not to be confused with Statistical Analysis System Institute Incorporated (SAS, Inc.), which developed and maintains the Educator Value Added Assessment System (EVAAS) methodology, which is the foundation of the Pennsylvania Value Added Assessment System (PVAAS).
- 19 The Future Ready PA Index is discussed more fully at Part II.D.4, *infra*.
- 20 These sections were added by Section 5 of the Act of March 30, 1988, P.L. 321.
- 21 The 10 areas are:
- (1) school program approval, evaluation[,] and requirements; (2) school personnel training and certification; (3) student testing and assessment; (4) school governance and organization; (5) curriculum materials development; (6) school finance; (7) school buildings and facilities; (8) transportation; (9) technical services and support services to local education agencies; and (10) projected long-range needs of the public school system of this Commonwealth.”
- 24 P.S. § 26-2603-B(i).
- 22 Section 4.11 was amended on July 16, 2022. Former Section 4.11 is identical except as noted below.
- 23 Section 4.12 of the State Board's regulations was amended effective July 16, 2022. The former version of Section 4.12 is substantially the same as the current version except the current version adds integrated academic standards for science, environment, ecology, technology, and engineering for grades K through 5 and grades 6 through 12, see 22 Pa. Code § 4.12(a)(1)(ii), (a)(2)(ii), and standards for technology and engineering in grades 6 through 12, 22 Pa. Code § 4.12(a)(2)(iii), which take effect July 1, 2025. The standards for those subject areas in the prior version of Section 4.12 remain in effect through June 30, 2025. See 22 Pa. Code § 4.12(a)(1)(i), (a)(2)(i). In addition, the current version of Section 4.12(a)(5) replaced the term “vocational technical programs” with “career and technical education programs.” Compare former 22

William Penn School District; Panther Valley School..., Not Reported in Atl....

Pa. Code § 4.12(a)(5), with 22 Pa. Code § 4.12(a)(5). Finally, Section 4.12(i) was amended to reflect that the State Board will review the academic standards “[n]o sooner than every 5 years and no later than every 10 years,” thereby replacing the three-year cycle in the prior version. Compare former 22 Pa. Code § 4.12(i), with 22 Pa. Code § 4.12(i).

- 24 Section 290.1 was added by Section 3 of the Act of August 8, 1963, P.L. 564.
- 25 Section 121 was added by Section 5 of the Act of June 30, 2012, P.L. 684.
- 26 Section 4.51a was amended on July 16, 2022, to conform with changes to the academic standards. It previously provided: “Performance on PSSA science assessments shall be demonstrated by students’ responses to grade appropriate content and by the quality of their responses to questions that demonstrate knowledge of each category of the standards for science and technology and environment and ecology.” Former 22 Pa. Code § 4.51a(a)(3).
- 27 DRC is the organization that creates and provides the annual PSSA technical reports on behalf of the Department. (PX-02067-0001.)
- 28 Section 2002-B was added by Section 13 of the Act of July 13, 2016, P.L. 716.
- 29 Pub. L. No. 114-95, 129 Stat. 1802 (2015).
- 30 The Department defines “Hispanic” as “[a] person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race.” (See, e.g., PX-02098, Tab “Contact Info & Definitions”). Although the terms have distinct meanings, the witnesses and parties appear to use the terms “Hispanic” and “Latino/Latina/Latinx” interchangeably. To be consistent with the Department’s definition of “Hispanic,” which would encompass Latino/Latina/Latinx students, the Court will use the term “Hispanic.”
- 31 The Court notes that there are small inconsistencies between some of 2030 goals listed in Table 1.1 of the ESSA Plan and the Appendix. For example, in Table 1.1, White students have a 2030 proficiency goal of 80.8% in ELA, (PX-1830-0021), but 81.1% in the appendix, (PX-01830-0166).
- 32 Act of October 24, 2018, P.L. 1146, No. 158, 24 P.S. § 1-121.
- 33 STEM stands for science, technology, engineering, and mathematics. According to the Department’s website, “STEM ... education is an integrated, interdisciplinary, and student-centered approach to learning that encourages curiosity, creativity, artistic expression, collaboration, computational thinking, communication, problem solving, critical thinking, and design thinking.” (LR-04202-00001.) The system of STEM education in the Commonwealth is built on the foundational belief that “[a]ll students are capable of STEM literacy.” (*Id.*) The Department’s website further provides that the Commonwealth needs students who are equipped with the knowledge and skills to enter into, and be successful in, the tech-driven global economy of the 21st century. (*Id.*)
- 34 The parties offered significant evidence and differing opinions on the value of PVAAS, which is discussed more fully below.
- 35 The Future Ready PA Index Technical Reports specify the source year for school data and baseline data. They may differ from measure to measure and do not always correspond to the school year listed on the Future Ready PA Index report. For instance, graduation rates reported in one year’s report will be from the prior year. (See, e.g., PX-1703-0018.) As the parties and witnesses referred to the results contained in the

Future Ready PA Indices as being the same as the school year listed on the report, the Court will do the same, cognizant that they may differ from other findings reporting the same measure.

- 36 ADM is the number of students who were residents of the school district in the previous year. (Parties' Joint Designations of the 7/7/20 Deposition of Benjamin Hanft (Hanft Dep.) Vol. 1 at 55-56.) As former Deputy Secretary Stem explained, "in simple terms," ADM is "the enrollment within a school district." (Tr. at 1770.) He further explained that ADM "includes all resident students, whether they attend the -- their local public school -- or school district ... or they attend a charter school or non-public or other school." (Tr. at 2026.)
- 37 Act of April 9, 1929, P.L. 343, as amended, 72 P.S. § 143-C. Section 143-C was added by Section 2 of the Act of June 30, 2021, P.L. 62.
- 38 At the time of trial, Noe Ortega was serving as Secretary of Education and was a Respondent. However, he testified as the Department's designee in his former capacity as Deputy Secretary and, as he is no longer the Secretary, the Court will refer to him as "former Secretary Ortega."
- 39 Section 2599.2 was added by Section 35 of the Act of December 23, 2003, P.L. 304.
- 40 Section 2003-B was added by Section 13 of the Act of July 13, 2016, P.L. 716.
- 41 Section 2599.7 was added by Section 18 of the Act of July 13, 2016, P.L. 716.
- 42 Section 2502.47 was added by Section 25 of the Act of July 20, 2007, P.L. 278.
- 43 These sections were added by various legislation. Section 2502.1 was repealed by Section 11 of the Act of August 14, 1963, P.L. 1065; Sections 2502.3, 2502.4, 2502.7, and 2502.9 were repealed by Section 9 of the Act of July 22, 1983, P.L. 104; and Section 2502.30 expired June 30, 2005, pursuant to Section 21 of the Act of July 13, 2005, P.L. 226.
- 44 Section 2502.48 was added by Section 30 of the Act of July 9, 2008, P.L. 846, and was made retroactive to July 1, 2008.
- 45 As discussed below, Section 2502.48(c)(2) was subsequently amended to remove this subsection.
- 46 Section 2599.3 was added by Section 15.1 of the Act of July 11, 2006, P.L. 1092, No. 114 (Act 114).
- 47 Former Section 1722-J was added by Section 5 of the Act of October 9, 2009, P.L. 537. Over the course of many years, it has been amended numerous times to reflect subsequent budget years.
- 48 Former Section 1722-L was added by Section 3 of the Act of July 6, 2010, P.L. 279. Similar to Section 1722-J, it has been amended numerous times since to reflect subsequent budgets.
- 49 Section 2502.50 was added by Section 36 of the Act of June 30, 2011, P.L. 112.
- 50 Section 2502.51 was added by Section 27 of the Act of June 30, 2012, P.L. 684. Section 2502.52 was added by Section 10 of the Act of July 9, 2013, P.L. 408.
- 51 Section 2502.53 was added by Section 1 of the Act of June 1, 2016, P.L. 252.
- 52 This discussion is limited to the hold harmless provision in relation to BEF. The Special Education Fair Funding Formula is also a relative distribution formula with a permanent hold harmless provision. Section 2509.5(bbb)

(1) of the School Code, [24 P.S. § 25-2509.5\(bbb\)\(1\)](#). (See *also* PX-03215, ¶¶ 74, 75, 77.) Section 2509.5 was added by Section 18 of the Act of August 5, 1991, P.L. 219.

- 53 Section 1725-A was added by Section 1 of the Act of June 19, 1997, P.L. 225.
- 54 Section 688 was added by Section 8 of the Act of December 23, 2003, P.L. 304.
- 55 Reading specialists are trained “to assess ... the problem or the issue, and then ... to put in the appropriate activities or interventions to help remediate” a student’s reading challenges. (Tr. at 6934.) They can work in small groups or provide individual instruction for students who are having difficulty with developing reading skills, and track progress to help keep students on grade level, which ultimately prevents future issues and costs. (Tr. at 336-38, 842, 6192, 6932-33, 11436.)
- 56 Math specialists can work with small groups to make sure students are mastering foundational concepts as they move through a course, with the goal of “scaffold[ing] their learning, meaning that while you’re learning the grade-level content, we’re also building and supporting you in your gap area.” (Tr. at 7477; *see also* Tr. at 10464-65.) And math interventionists work with staff to help them develop a better understanding of how best to teach the processes and concepts in mathematics. (Tr. at 10465.) These interventionists provide essential support that students would not otherwise receive during the course of regular classroom instruction. (Tr. at 10468.)
- 57 As the term implies, local capacity per weighed student is “a measure of how much” funding a school district “can contribute from [its] local sources towards a weighted student.” (Tr. at 5708-09.)
- 58 The Local Effort Capacity Index is a metric that combines a measure of Local Effort (a ratio involving local tax revenue to median household income) and Local Capacity (a ratio involving personal income to the student-weighted ADM). *See* [24 P.S. § 25-2502.53\(c\)\(4\)](#) (“Local effort capacity index for a school district shall equal the sum of its local effort index and local capacity index.”). (*See also* PX-01797, Tab “Narrative” (providing formula for Local Effort Capacity Index).) Mr. Willis, Speaker’s expert, explained that the Local Effort Capacity Index looks at how much funding effort a community is making towards its schools “relative to the capacity within the community, itself.” (Tr. at 12852; *see also* Stem Dep. Vol. 2 at 378.)
- 59 Dr. Rau sometimes referred to ELL students as ESL, which stands for English as a second language, or ELD, which stands English language development. For consistency, the Court uses ELL. (Tr. at 5081.)
- 60 A student could take multiple AP exams, so the taking of 342 exams does not necessarily equate to 342 students taken AP exams. (Tr. at 5593.)
- 61 As with AP exams, a student can take multiple IB exams. (Tr. at 5597.)
- 62 LR-02330 is misidentified in the record as LR-02230. An unopposed Motion to Correct the Record on this point was filed with the Court on May 2, 2022, which was granted.
- 63 Dr. Kelly explained that WADM is not based on student need related to characteristics of poverty, special education status or ELL status. Rather, this value is weighted based on the grade level of the student, with a half-day kindergartener weighted 0.5, grade 1-7 students weighted 1.0, and grade 7-12 students weighted 1.36. (Tr. at 1149-50.)

- 64 Legislative Respondents made a standing objection to such testimony, acknowledging that the Court previously denied in part and granted in part a motion *in limine* seeking to exclude evidence of race. (Tr. at 1289; July 18, 2021 Opinion and Order.)
- 65 The Commonwealth includes ELL students, students with disabilities, and economically-disadvantaged students in a category as “historically underperforming” students. (Tr. at 1226-27, 1249.)
- 66 The Court took judicial notice of U.S. Census Bureau data, which was reviewed during Dr. Kelly's rebuttal testimony. (Tr. at 14466-67.)
- 67 In a UCLA law review article he wrote in 2002, Dr. Belfield described the Coleman Report as a study requested by Congress under the 1964 Civil Rights Act and published in 1966, which represented a massive effort to determine the impact of both families and schools on the educational achievement of children. According to the study, differences in the characteristics of a student's family background were overwhelmingly more important than school characteristics in explaining variations in overall student achievement. Although the statistical technique utilized therein has been criticized, the overall finding of the Coleman Report has been replicated in most of the studies performed in ensuing decades. (Tr. at 9333-34, 9368.)
- 68 Petitioners objected to Dr. Rossell's testimony for, among other reasons, her lack of expertise on these topics. Petitioners' objection is overruled.
- 69 Other courts have discounted Dr. Rossell's expert testimony, finding that her analysis was “flawed,” was based upon “little knowledge about how the reviews [at issue] were actually conducted,” and that she made “sweeping conclusions” without reviewing underlying data or having “an accurate understanding” of the issue at hand. (Tr. at 12045-51.) The Court finds similar flaws in Dr. Rossell's testimony in this matter.
- 70 Mr. Willis testified that Quality Counts is “the name of an annual publication that is produced by Education Week.” (Tr. at 12761).
- 71 Mr. Willis explained that F33 “refers to the national collection of financial information from every school district in the country. F33 is just a shorthand for the actual form that school districts and states fill out that financial information on an annual basis.” (Tr. at 13049-50.)
- 72 Petitioners filed a motion *in limine* challenging Mr. Eden's qualification as an expert, which the Court denied by Order dated August 17, 2021. Petitioners, after voir dire, continued to object to his qualification, which the Court overruled. (Tr. at 13289.)
- 73 Petitioners objected to Dr. Hanushek's testimony regarding Dr. Johnson's study, and other studies generally, as being beyond the scope of his expert report and disagreed that his responses on cross-examination questions regarding whether he was aware of such studies were sufficient to allow him to expand that testimony on redirect. Petitioners' objection is overruled.
- 74 Rule 1032(b) states, in relevant part, that “[w]henver it appears by suggestion of the parties or otherwise ... that there has been a failure to join an indispensable party, the court shall order that ... the indispensable party be joined, but if that is not possible, then it shall dismiss the action.” Pa.R.Civ.P. 1032(b).
- 75 It states, in pertinent part, that “[t]he General Assembly shall pass no local or special law ... [r]egulating the affairs of counties, cities, townships, wards, boroughs or school districts[.]” PA. CONST. art. III, § 32, cl. 1.

- 76 Act of August 24, 1977, P.L. 199, 24 P.S. §§ 25-2501-2502.3, repealed by Section 9 of the Act of July 22, 1983, P.L. 104.
- 77 Petitioners also point to our Supreme Court's recognition that the mandatory joinder provision in Section 7540(a) of the Declaratory Judgments Act, 42 Pa.C.S. § 7540(a), is subject to limiting principles. One such limitation is where “a constitutional challenge to a legislative enactment may potentially affect a large number of parties whose joinder would render litigation unmanageable[.]” *Stilp v. Commonwealth*, 910 A.2d 775, 785 (Pa. Cmwlth. 2006) (*Stilp I*). The Court agrees with Petitioners that “[t]he addition of hundreds of new parties to an already robust roster will not enhance the thoughtful disposition” of the matter. (Petitioners’ Reply Br. at 73 (quoting *Stilp I*, 910 A.2d at 786).)
- 78 A more complete review of the history of education in the Commonwealth may be found in the Findings of Fact.
- 79 President Pro Tempore and Speaker filed combined proposed findings of fact and conclusions of law and separate briefs. Speaker's brief incorporates those proposed findings and conclusions, as well as President Pro Tempore's brief as it relates to the Education Clause claim, but he highlights certain points separately in his brief. (See Speaker's Br. at 11, 27.) Therefore, the Court will combine discussion of their arguments and cite separately, where necessary.
- 80 President Pro Tempore also argues the elimination of that phrase signifies that any right to education that may have existed was removed when the phrase was removed from the Education Clause. (President Pro Tempore's Br. at 15.) This argument relates to Petitioners’ equal protection claim, which is addressed more fully in Part VIII, *infra*.
- 81 Executive Respondents did not address what standard should apply to Petitioners’ Education Clause claim in their brief but did proffer a standard at oral argument on July 27, 2022.
- 82 By way of example, article X, section 3 of the 1874 Constitution, which provided that “[w]omen twenty-one years of age and upwards[] shall be eligible to any office of control or management under the school laws of this State,” was removed from the 1967 Constitution. (Petitioners’ Reply Br. at 8.)
- 83 Numerous individuals and organizations filed amicus briefs in this matter. To the extent amici address a certain topic, the Court will include their respective arguments in the appropriate section but will attempt to remove redundancies with the parties’ arguments.
- 84 The Court granted Attorney General leave to file an amicus brief in excess of the word limit over Legislative Respondents’ objections. See June 16, 2022 Order. At the time of filing the amicus brief, Josh Shapiro was Attorney General, and subsequent to trial, he was elected Governor. Accordingly, Governor Shapiro is now a party-respondent. However, the Court includes his arguments here to the extent they differ or elaborate on former Governor Tom Wolf's arguments.
- 85 Justice Wecht also acknowledged, however, that the plain meaning of a term, such as “ballot” in *McLinko*, may have significantly different meanings from the time the language first appeared in the Constitution to the time it was retained in a newer Constitution. *McLinko*, 279 A.3d at 592 n.20 (Wecht, J., concurring). However, even if Legislative Respondents are correct that the phrase “thorough and efficient” should be measured by what it meant in 1967, the Court's analysis would be unchanged as the meaning of the terms remained largely the same. See, e.g., *Davis v. The State of South Dakota*, 804 N.W.2d 618, 624 (S.D. 2011) (“The plain and ordinary meaning of [] key words[, such as “thorough” and “efficient,”] appears unchanged since

1889 when South Dakota's Constitution was ratified.”); *Campbell Cnty. Sch. Dist. v. State of Wyoming*, 907 P.2d 1238, 1257 (Wyo. 1995) (“[W]e see little difference in the contemporary definitions” of “thorough” and “efficient” and the 1889 definition.); *Edgewood Indep. Sch. Dist. v. Kirby*, 777 S.W.2d 391, 395 (Tex. 1989) (“There is no reason to think that “efficient” meant anything different in 1875 [when article VII, section 1 of the Texas Constitution was written] from what it now means.”).

“Thorough” was defined as “marked by completeness.” *Thorough*, WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE 2380 (1966). “Efficient” was defined as:

1: serving as or characteristic of an efficient cause; causally productive: operant ...

2: marked by ability to choose and use the most effective and least wasteful means of doing a task or accomplishing a purpose: competent ... 3: marked by qualities, characteristics, or equipment that facilitate the serving of a purpose or the performance of a task in the best possible manner: eminently satisfactory in use: effective to an end.

Id. at 725. The definitions are consistent with the definitions from the 1870s, discussed below.

86 At oral argument, counsel for President Pro Tempore stated that the parties agree that “thorough” means complete. (July 27, 2022 Tr. at 128.)

87 To the extent Legislative Respondents argue that children are no longer the object of the Education Clause when the phrase “to serve the needs of the Commonwealth” was added in 1967, PA. CONST. art. III, § 14, and the phrase “wherein all the children of this Commonwealth above the age of six years may be educated” was removed, PA. CONST. art. X, § 1, the Court disagrees. The Court addresses whether the Education Clause creates a right in those children to a “thorough and efficient system of public education” in Part VIII, *infra*, where it addresses Petitioners’ second claim, sounding in equal protection.

88 While the Court finds the Wyoming Supreme Court's interpretation of “thorough and efficient” persuasive, it recognizes that Wyoming's Constitution differs in significant regards from Pennsylvania's. Most notable is that article 1, section 23 of the Wyoming Constitution establishes education is a fundamental right. WYO. CONST. art. 1, § 23; *Campbell Cnty. Sch. Dist. v. State of Wyoming*, 907 P.2d 1238, 1257 (Wyo. 1995); *Washakie Cnty. Sch. Dist. No. One v. Herschler*, 606 P.2d 310, 335 (Wyo. 1980). Article 7, section 1 also provides that “[t]he legislature shall provide for the establishment and maintenance of a complete and uniform system of public instruction” WYO. CONST. art. 7, § 1. Thus, the Wyoming Constitution, unlike the Pennsylvania Constitution, expressly requires uniformity. In addition, the Wyoming Constitution sets forth the system's responsibilities and requirements in detail. WYO. CONST. art. 7, §§ 1-14.

89 In *Montgomery County v. Bradford*, the Court of Appeals of Maryland clarified:

While *Hornbeck* teaches that the Maryland constitutional provision does not mandate uniformity in per pupil funding or require that the system operate uniformly in every school district, it does require that the General Assembly establish a Statewide system to provide an adequate public school education to the children in every school district.

691 A.2d 1281, 1284 (Md. 1997).

90 Article X, section 1 of Delaware's Constitution contemplates a “general and **efficient** system of free public schools,” DEL. CONST. art X, § 1 (emphasis added), and has been interpreted in a similar manner. The Delaware Court of Chancery held “[t]he terms do not limit the meaning of a school but rather describe two

essential means by which the system should educate students: it should generally cover all students and efficiently accomplish the task of providing them with an education.” *Delawareans for Educ. Opportunity v. Carney*, 199 A.3d 109, 142 (Del. Ch. 2018). The court held “the ordinary and natural meaning of the term ‘efficient’ encompasses the concept of effectiveness,” and thus, “the Education Clause calls for a system that will produce educated students.” *Id.* at 142-43. The court found this meaning was confirmed by the legislative history, as the meaning of “efficient” was actually debated, unlike in Pennsylvania. *Id.* at 143, 148. The court stated, “[t]he legislative history indicates that the Education Clause was intended to mandate the creation of a system of public schools that would provide a meaningful education to Delaware’s children.” *Id.* at 149-50.

See also *Edgewood Indep. Sch. Dist.*, 777 S.W.2d at 395 (“‘Efficient’ ” [as used in article VII, section 1 of the Texas Constitution requiring the “Legislature of the State to establish and make suitable provision for the support and maintenance of an **efficient** system of public free schools, TEX. CONST. art. VII, § 1 (emphasis added),] conveys the meaning of effective or productive of results and connotes the use of resources as to produce results with little waste[.]”).

- 91 The Supreme Court of Kentucky developed a similar list when it was determining what “efficient” meant in that state’s constitution, which provides “The General Assembly shall, by appropriate legislation, provide for an **efficient** system of common schools throughout the State.” *Section 183 of the Kentucky Constitution, KY. CONST. § 183* (emphasis added). The court stated:

[A]n efficient system of education must have as its goals to provide each and every child with at least the seven following capacities: (i) sufficient oral and written communication skills to enable students to function in a complex and rapidly changing civilization; (ii) sufficient knowledge of economic, social, and political systems to enable the student to make informed choices; (iii) sufficient understanding of governmental processes to enable the student to understand the issues that affect his or her community, state, and nation; (iv) sufficient self-knowledge and knowledge of his or her mental and physical wellness; (v) sufficient grounding in the arts to enable each student to appreciate his or her cultural and historical heritage; (vi) sufficient training or preparation for advanced training in either academic or vocational fields so as to enable each child to choose and pursue life work intelligently; and (vii) sufficient levels of academic or vocational skills to enable public school students go to compete favorably with their counterparts in surrounding states, in academics or in the job market. [1]

The essential, and minimal, characteristics of an “efficient” system of common schools, may be summarized as follows:

- 1) The establishment, maintenance and funding of common schools in Kentucky is the sole responsibility of the General Assembly.
- 2) Common schools shall be free to all.
- 3) Common schools shall be available to all Kentucky children.
- 4) Common schools shall be substantially uniform throughout the state.
- 5) Common schools shall provide equal educational opportunities to all Kentucky children, regardless of place of residence or economic circumstances.

6) Common schools shall be monitored by the General Assembly to assure that they are operated with no waste, no duplication, no mismanagement, and with no political influence.

7) The premise for the existence of common schools is that all children in Kentucky have a constitutional right to an adequate education.

8) The General Assembly shall provide funding which is sufficient to provide each child in Kentucky an adequate education.

9) An adequate education is one which has as its goal the development of the seven capacities recited previously.

[Rose](#), 790 S.W.2d at 212-13.

92 Montana also has deferred to its legislature to determine what “quality” means in its education clause, which provides: “The legislature shall provide a basic system of free **quality** elementary and secondary schools,” [Article X, section 1\(3\) of the Montana Constitution](#), MONT. CONST. art. X, § 1(3) (emphasis added). See [Columbia Falls Elem. Sch. Dist. No. 6 v. State of Montana](#), 109 P.3d 257, 259 (Mont. 2005).

In contrast, the Supreme Court of Idaho found its obligation to define the meaning of “thorough” in that state’s constitution was “made simpler for th[e] [c]ourt because the executive branch of the government ha[d] already promulgated educational standards pursuant to the legislature’s directive. ...” [Idaho Schs. for Equal Educ. Opportunity v. Evans](#), 850 P.2d 724, 734 (Idaho 1993). However, the court did not outright accept those standards but instead “examined those standards carefully” before holding that “the requirements for school facilities, instructional programs and textbooks, and transportation systems as contained in those regulations presently in effect, are consistent with [its] view of thoroughness.” *Id.*

93 Minnesota’s Constitution likewise includes “thorough and efficient” language. [Article XIII, section 1 of the Minnesota Constitution](#), MINN. CONST. art. XIII, § 1 (“The stability of a republican form of government depending mainly upon the intelligence of the people, it is the duty of the legislature to establish a general and uniform system of public schools. The legislature shall make such provisions by taxation or otherwise as will secure a **thorough and efficient** system of public schools throughout the state.”) (emphasis added). The Supreme Court of Minnesota distinguished between the type of system of education that must be provided, “general and uniform,” and how it is financed, “thorough and efficient.” [Skeen](#), 505 N.W.2d at 315. Pennsylvania’s Constitution does not draw a similar distinction; therefore, the Court does not find *Skeen* persuasive for purposes of interpreting what constitutes a “thorough and efficient system of public education.”

94 As discussed further below, there is a dispute as to the applicable burden of proof. Petitioners maintain it is preponderance of the evidence, but assert that, even if the Court applies the heightened standard proposed by Legislative Respondents, they have still satisfied that burden.

95 These are the African American Chamber of Commerce; the American Association of University Women PA; the Erie Regional Chamber and Growth Partnership; the Erie Center for Arts & Technology; the Pan Asian Association of Greater Philadelphia; Urban League of Philadelphia; Parker Philips; Earle Enterprises, LP; TreCom Systems Group; the League of Women Voters of Pennsylvania; the Urban League of Greater Pittsburgh; Alice M. Drum, Ph.D., vice president of the college emerita at Franklin & Marshall College; Barbara Ferman, professor of political science at Temple University; Sean Flaherty, emeritus professor of economics at Franklin & Marshall College; Theresa Glennon, emerita professor at Temple University Beasley School of

William Penn School District; Panther Valley School..., Not Reported in Atl....

Law; Akira Drake Rodriguez, professor at the Weitzman School of Design at the University of Pennsylvania; and Megan Wolleben, associate director in the Center for Career Advancement at Bucknell University.

- 96 They are ACLAMO; Allies for Children; The Arc of Philadelphia; Asian Americans United; Children First; Disability Rights Pennsylvania; Education Law Center; Education Voters of Pennsylvania; Juvenile Law Center; Make the Road Pennsylvania; The Pennsylvania Association of School Nurses and Practitioners; The PA Budget and Policy Center; People's Emergency Center; Philadelphia Family Voices; Philadelphians Organized to Witness, Empower & Rebuild, dba POWER Interfaith; Philadelphia Student Union; The Support Center for Child Advocates; Teach Plus Pennsylvania; Turning Points for Children; VietLead; and Youth United for Change.
- 97 President Pro Tempore filed an application to strike PSEA's amicus brief, alleging it was more of an expert report than an amicus brief and it contained facts outside the record. The Court granted the application without prejudice for PSEA to refile the brief with the offending portions redacted, which PSEA did. (See June 24, 2022 Opinion and Order.) Accordingly, the Court considers only the redacted brief.
- 98 Whereas other amici filed their briefs post-trial, the Commonwealth Foundation sought leave of court to file an amicus brief prior to the close of trial. The Court granted the unopposed application. (See Jan. 27, 2022 Order.)
- 99 The Education Clause from the 1874 Constitution was in effect at that time.
- 100 Although similarly phrased, the Supreme Court has explained that the reasonable relation standard "is not the 'rational relationship test' of equal protection analysis." *Reichley by Wall v. N. Penn Sch. Dist.*, 626 A.2d 123, 127 (Pa. 1993). See also *William Penn II*, 170 A.3d at 458 n.64.
- 101 The Supreme Court in *William Penn II* also raised questions about their continued viability in relation to Petitioners' equal protection claim. See *William Penn II*, 170 A.3d at 461-63.
- 102 *Baker v. Carr*, 369 U.S. 186 (1962). In *Baker*, the United States Supreme Court set forth factors to consider in a political question analysis:
- Prominent on the surface of any case held to involve a political question is found a textually demonstrable constitutional commitment of the issue to a coordinate political department; or a lack of judicially discoverable and manageable standards for resolving it; or the impossibility of deciding without an initial policy determination of a kind clearly for non[-]judicial discretion; or the impossibility of a court's undertaking independent resolution without expressing lack of the respect due coordinate branches of government; or an unusual need for unquestioning adherence to a political decision already made; or the potentiality of embarrassment from multifarious pronouncements by various departments on one question.
- Id.* at 217. If one factor is present, it warrants abstention under the political question doctrine. *Id.*
- 103 The Supreme Court identified other issues with *Danson's* holding, which also call into question whether *Danson* is still good law. See *William Penn II*, 170 A.3d at 443 (discussing *Danson's* conflation of standing with the political question doctrine).
- 104 The Supreme Court noted that it was referring primarily to *Marrero I*, although, in *Marrero II*, the Supreme Court adopted this Court's decision in *Marrero I* "without material supplementation." *William Penn II*, 170 A.3d at 444 n.43.

- 105 The Texas Education Clause provides: “A general diffusion of knowledge being essential to the preservation of the liberties and rights of the people, it shall be the duty of the Legislature of the State to establish and make suitable provision for the support and maintenance of an efficient system of public free schools.” [Article 7, section 1 of the Texas Constitution, TEX. CONST. art. 7, § 1](#). Notably, the Texas Supreme Court examined only outputs, concluding that because the Texas Education Clause requires a “general diffusion of knowledge,” it was “plainly results-oriented,” and inputs were not relevant. [Neeley, 176 S.W.3d at 788](#); see also [Morath, 490 S.W.3d at 850](#) (“[A]n adequacy determination should not depend on ‘inputs’ such as funding per student.”) (citing [Neeley](#)).
- 106 South Carolina's Education Clause provides: “The General Assembly shall provide for the maintenance and support of a system of free public schools open to all children in the state and shall establish, organize and support such other public institutions of learning as may be desirable.” [Article XI, section 3 of the South Carolina Constitution, S.C. CONST. art. XI, § 3](#). This has been interpreted by South Carolina courts to require a “minimally adequate” education, which has been further defined as:
- to include the provision of adequate and safe facilities in which students have the opportunity to acquire:
- (1) The ability to read, write, and speak the English language, and knowledge of mathematics and physical science;
 - (2) A fundamental knowledge of economic, social, and political systems, and of history and governmental processes; and
 - (3) Academic and vocational skills.
- [Abbeville Cnty. Sch. Dist., 767 S.E.2d at 160-61](#) (citation omitted).
- 107 The court in *Morath* went on to explain, though, that it “has never squarely held that a separate, cognizable adequacy claim can be asserted by a student subpopulation such as economically[-]disadvantaged or ELL students,” and that it “was reluctant to start down the path of entertaining claims of subpopulations.” 490 S.W.2d at 858-59.
- 108 For instance, Mr. Willis did not include neighboring New Jersey as a peer, but did include Arkansas. (FOF ¶ 2091.) His selection of peer districts was likewise unconvincing, as evidenced by his matching of William Penn, a district of 4,916 students, approximately 88% of which are Black students and nearly 5% of which are ELL students, in Delaware County, with Harmony, a district of 253 students, 99% of which are White students with no ELL students, located in rural Clearfield County. (FOF ¶ 2133; see also FOF ¶¶ 2129-2135.)
- 109 They are David S. Cohen, Professor of Law at Drexel University Thomas R. Kline School of Law; Gary S. Gildin, Dean *Emeritus*, Professor of Law, and Honorable G. Thomas and Anne G. Miller Chair in Advocacy at The Dickinson School of Law of the Pennsylvania State University; Seth F. Kreimer, Kenneth W. Gemmill Professor of Law at University of Pennsylvania Carey Law School; Jules Lobel, Professor of Law and Bessie McKee Walthour Endowed Chair at University of Pittsburgh School of Law; and Robert J. Reinstein, Clifford Scott Green Professor of Law *Emeritus* at Temple University Beasley School of Law.
- 110 Law Professor Amici noted that the United States Supreme Court's decision in [San Antonio Independent School District v. Rodriguez, 411 U.S. 1 \(1973\)](#), was not included as its finding that education was not a fundamental right was based upon the federal constitution. (Law Professor Amici Br. at 7.)

- 111 These are the American Federation of Teachers (AFT), which is an affiliate of the AFL-CIO; Philadelphia Federation of Teachers, Local 3 of the AFT, AFL-CIO; the American Federation of Teachers Pennsylvania, AFT, AFL-CIO.
- 112 Although *James* cited *Plyler* for the proposition that a fundamental right is one which has its source, explicitly or implicitly, in the Constitution, *James*, 477 A.2d at 1306, the United States Supreme Court was utilizing this test before *Plyler*, including in *Rodriguez*, 411 U.S. at 17, 33. Accordingly, many cases from other jurisdictions tend to cite *Rodriguez* for the explicit/implicit test.
- 113 There is a fourth *Edmunds* factor: “policy considerations, including unique issues of state and local concern, and applicability within modern Pennsylvania jurisprudence.” *Edmunds*, 586 A.2d at 895. However, its applicability in determining whether a right is fundamental is unclear, particularly since the *James* inquiry focuses on constitutional concerns. Moreover, any relevant policy considerations are amply accounted for in the constitutional history analysis, the second *Edmunds* factor. Accordingly, the Court does not separately consider the fourth *Edmunds* factor.
- 114 Although the court determined education was a fundamental right, as discussed more fully below, it applied two different levels of scrutiny.
- 115 One Judge of the Maryland high court dissented from *Hornbeck*’s analysis of state equal protection, criticizing the majority for “fail[ing] to analyze the standard for determining fundamental rights under the [s]tate [c]onstitution,” and “never stat[ing] the standard it use[d] in ultimately evaluating fundamentality.” *Hornbeck*, 458 A.2d at 801 (Cole, J., dissenting).
- 116 It is noteworthy that the court in *Walter* stated that if it applied the test from *Rodriguez*, education would be a fundamental right. *Walter*, 390 N.E.2d at 818.
- 117 Several other courts that have declined to apply the explicit/implicit test from *Rodriguez* have also cited the New Jersey Supreme Court’s decision *Robinson I* for its reasoning, including, *Hornbeck*, 458 A.2d at 785, discussed *supra*, and *Lujan*, 649 P.2d at 1017 n.12, discussed *infra*. No party relies upon *Robinson I* for purposes of equal protection. As with the other cases that declined to follow *Rodriguez*’s test, which is analogous to the explicit/implicit standard in *James*, the Court does not find *Robinson I* persuasive for its equal protection analysis, despite New Jersey’s Constitution possessing similar “thorough and efficient” language.
- 118 *Serrano I* predated *Rodriguez*, where the United States Supreme Court held that there is no fundamental interest in education under the federal constitution. In *Serrano II*, the California Supreme Court affirmed its holding in *Serrano I* and explained that its rationale had also been based on the California constitution’s equal protection clause, so its rationale and result in *Serrano I* survived *Rodriguez* on that basis. See *Serrano II*, 557 P.2d at 951.
- 119 Article IX, section 2 of Colorado’s Constitution provides: “The general assembly shall, as soon as practicable, provide for the establishment and maintenance of a thorough and uniform system of free public schools throughout the state, wherein all residents of the state, between the ages of six and twenty-one years, may be educated gratuitously.” COLO. CONST. art. IX, § 2.
- 120 Notably, also similar to the *Walter* court, the Colorado Supreme Court stated that had *Rodriguez* applied, education “arguably” would be a fundamental right. *Lujan*, 649 P.2d at 1017.

William Penn School District; Panther Valley School..., Not Reported in Atl....

- 121 [Article IX, section 1 of the Idaho Constitution](#) provides: “The stability of a republican form of government depending mainly upon the intelligence of the people, it shall be the duty of the legislature of Idaho, to establish and maintain a general, uniform and thorough system of public, free common schools.” [IDAHO CONST. art. IX, § 1](#).
- 122 The Supreme Court of Wyoming concluded this minority “view is the correct one,” as it “kep[t] with [that court’s] view in *Washakie* that the strict scrutiny test applies to legislative action which affects a child’s right to a proper education.” [Campbell Cnty. Sch. Dist., 907 P.2d at 1267](#). The court thus “appl[ie]d strict scrutiny to the distribution component of the school finance system” and concluded that the trial court’s findings failed to show that the state’s funding scheme met that high bar. [Id. at 1276](#). Specifically, the court reasoned that “[t]he amount of money raised by local [tax effort] is totally dependent upon the local wealth of individual school districts” and “[t]he presence of such wealth bears no relationship to the expense of educating students in any particular community.” [Id. at 1269](#). The local tax funding mechanism at issue, which the defendants justified on the basis of “local control,” was “wealth-driven in violation of equal protection,” because “it creates wealth-driven disparity in opportunity for quality education in violation of *Washakie*.” [Id. at 1270](#).
- 123 President Pro Tempore incorporates Speaker’s arguments on these issues.
- 124 The Court acknowledges the dueling public interests that Legislative Respondents face. However, to the extent Legislative Respondents attempt to assert competing government interest as a compelling reason for the classification, the Supreme Court has already stated that the General Assembly’s constitutional obligations under the Education Clause should not “jostle on equal terms with non-constitutional considerations that the people deemed unworthy of embodying in their Constitution.” [William Penn II, 170 A.3d at 464](#). See also [Edgewood Indep. Sch. Dist., 777 S.W.2d at 398](#) (“We recognize that there are and always will be strong public interests competing for available state funds. However, the legislature’s responsibility to support public education is different because it is constitutionally imposed.”)
- 125 Even if the lowest level of scrutiny – rational basis – applied, Petitioners would prevail, like the plaintiffs in *DuPree* and *McWherter*. Given the fallacies identified by the courts related to local control, with which this Court agrees and also observes, even accepting local control as a legitimate state interest, the Court could not conclude the classification drawn is reasonably related to accomplishing that interest.
- 126 Executive Respondents argue sovereign immunity bars any monetary damage. As the Court is not awarding monetary damages, the claim is dismissed as moot without prejudice to raise in the future, if necessary.
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