

Western MA Per Pupil Expenditure Report

With selected districts for comparison

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Appendices (online)

Appendices A-D are available online at:

https://github.com/timshores/schools/blob/main/ppe_report/output/WMPPE%20Appendices.pdf

Executive Summary

"What gets measured gets managed — even when it's pointless to measure and manage it, and even if it harms the purpose of the organisation to do so"

— V. F. Ridgway, 'Dysfunctional Consequences of Performance Measurements', 1956

"By the time it can be captured in numbers, it's too late."

— Peter Drucker, 'The Effective Executive', 1967

Draft Status: As of **February 05, 2026**, this report has been reviewed by the ARPS Budget & Audit Subcommittee and the Fiscal Sustainability Subcommittee chair, and shared with the chairs of the Leverett School Committee, Finance Committee, and Selectboard. Contact the author: Tim Shores at shores@arps.org.

How to use this report

The report is organized from broad regional patterns down to district-level details. As a descriptive report, it makes no forecasts and offers no recommendations. One way to use it would be as a companion to discussions that depend on meaningful cost comparisons. You could read straight through to build understanding from high-level trends to selected district details. Or you could use this **quick-start guide** to answer specific questions:

- How does my school district spending compare to Western MA baselines?
- How does Chapter 70 aid compare?
- How does required and actual net school spending compare?
- How have these categories of spending and aid grown over time in comparison with Western MA baselines?

Quick-start guide:

1. Review the cohort comparison tables at the end of the Executive Summary.
2. Review the **Scatterplot of enrollment vs. per-pupil expenditure** in Section 1 to see how all districts are grouped.
3. Locate your district in **Section 3** for detailed comparison of expenses, enrollment, Chapter 70 aid, and net school spending compared to the cohort.

Understanding Per-Pupil Expenditure in Context

Per-pupil expenditure (PPE) provides a flawed lens for understanding school budgets. While this single metric obscures the complexity of school systems — shaped by student needs, facility requirements, governance structures, and historical commitments — it remains an accessible standard for state reporting and public discussion. We might as well try to understand it in full. This report examines PPE patterns across Western Massachusetts districts, organizing them into enrollment-based cohorts to identify trends and provide context for budget deliberations.

The Challenge of Interpretation

In February 2025, an Amherst Town Councilor asked why regional school spending was "increasing faster than the town's revenue, especially given the significant long-term reduction in the number of students we teach."¹ This question reflects a common assumption or hope that school budgets should track with municipal revenue and scale proportionally with enrollment. However, evidence of school budget trends suggests different dynamics at work.

Schools are not like factories, nonprofit organizations or hospitals. Schools are like schools, and we expect to fund and operate them like schools. As a social service, education is fundamentally labor-intensive. National data shows school districts dedicate 80% of budgets to staff and benefits — salaries, health insurance, and retirement contributions — double the 35-40% typical in other organizations.² These costs respond to regional and sectoral labor markets rather than local tax revenues, with the cost of education service historically rising faster than general inflation.³ Fixed and semi-fixed costs — staffing minimums, transportation contracts, facility operations, utilities, debt service, insurance, legal — cannot be reduced proportionally with enrollment. Students eligible for special education have a right to services regardless of overall enrollment, with costs driven by individual needs rather than district size. Charter school transfers result in a net loss of state aid to tuition payments and often concentrate higher-need student populations in the traditional schools.

Approach

This report takes the position that before we set out to understand why we spend so much on schools, we should ask two key questions: What has our budget growth rate been, and what was our starting point? Understanding whether education costs have grown predictably or exceptionally is a question we can answer by looking at data collected by the Commonwealth. This report breaks down PPE and compares expenses by category, state aid, and local contributions across enrollment-based district cohorts. These groupings allow comparison of districts facing similar scale challenges. The goal is to support informed deliberation about education funding within the broader context of regional economic conditions and policy decisions.

Key Finding: Today's high PPE driven by legacy of high PPE and net spending above required spending — not declining enrollment

Analysis of spending patterns in Amherst-Pelham, Amherst, Leverett, Pelham, and Shutesbury reveals an important pattern: per-pupil expenditure in these districts has grown 3-6% from 2009-2024, rates that are comparable to or lower than their Western Massachusetts peers. Current high PPE and net school spending (NSS) is the result of normal growth from a high starting point. In 2009, these districts already maintained PPE significantly above regional averages. With normal growth rates applied to above-average baselines, spending will remain above average. Understanding this shifts the conversation from 'why are costs so high?' to 'how do we manage the school system that we've inherited at 3-6% annual growth?'

Implications

This finding should shift our focus from addressing perceived runaway costs to addressing the change in local fiscal effort to fund our schools. Fiscal effort measures a community's local tax burden for schools relative to its capacity to pay. The Commonwealth calculates this as each district's required local contribution divided by its combined property values and resident income — a community spending 5% of its wealth shows lower effort than one spending 10%, regardless of absolute dollar amounts.

Two districts with identical PPE amounts and growth may differ significantly in their tax bases. This difference will show up in fiscal effort calculations. This is an objective measure of property value and income used to calculate state aid, but effort is also subjective. If fiscal effort becomes too much for local taxpayers, communities face a hard choice. In this scenario, school committees must identify educational needs and purposeful spending within available resources, but their principal concern will remain with the best interests of the district and the students. Leadership on deciding available resources falls to appropriating bodies and, ultimately, to voters.

In the end, we are likely to find that our structural funding challenges will persist until the Commonwealth finds the courage to deliver policy changes that no region, town or school district can achieve alone.

For a good start on how to advocate for meaningful change, see the [July 2022 report A Sustainable Future for Rural Schools](#), the steadfast work of the champions at [Rural Schools MA](#), and the Amherst-Pelham Regional School Committee's [Fiscal Sustainability Subcommittee October 2025 report](#).⁴

References

1. [Amherst Indy, "Letter: Correcting Councilor Ryan on the Regional School Budget"](https://www.amherstindy.org/2025/02/07/letter-correcting-councilor-ryan-on-the-regional-school-budget/)
<https://www.amherstindy.org/2025/02/07/letter-correcting-councilor-ryan-on-the-regional-school-budget/>
2. [American Association of School Administrators, "School Budgets 101"](https://www.aasa.org/docs/default-source/resources/reports/school-budgets-101.pdf)
<https://www.aasa.org/docs/default-source/resources/reports/school-budgets-101.pdf>
3. [Where's the Money Gone? Changes in the Level and Composition of Education Spending \(1995\)](https://www.epi.org/publication/books_where_money_gone/) and [Inflation and the Measurement of School Spending \(1996\)](https://nces.ed.gov/pubs97/97535/97535jx1.asp)
https://www.epi.org/publication/books_where_money_gone/
<https://nces.ed.gov/pubs97/97535/97535jx1.asp>
4. [Rep. Blais - Rural Schools](https://www.repblais.org/ruralschools), [Rural Schools Advocacy in Massachusetts](https://www.ruralschoolsma.org/), and [RSC FSS Report](https://go.boarddocs.com/ma/arps/Board.nsf/goto?open&id;=DMQPEL64432C).
<https://www.repblais.org/ruralschools>
<https://www.ruralschoolsma.org/>
<https://go.boarddocs.com/ma/arps/Board.nsf/goto?open&id;=DMQPEL64432C>

All data in this report comes from the Massachusetts Department of Elementary and Secondary Education (DESE). See [Appendix A](#) for detailed source information (https://github.com/timshores/schools/blob/main/ppe_report/output/WMPPE%20Appendices.pdf).

Executive Summary (continued)

Total PPE comparison: Western MA enrollment cohorts and selected districts

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta CAGR| \geq 0.5pp$

$$CAGR = (End/Start)^{(1/years)} - 1$$

Above baseline

Baseline

Below baseline

Table 1

Cohort/District	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Western MA (all, excl. Springfield)	\$12,234	+4.0%	+4.6%	+6.0%	\$22,065
Western MA Tiny (0-200 FTE)	\$14,738	+4.2%	+4.4%	+6.0%	\$27,504
Western MA Small (201-800 FTE)	\$12,523	+4.6%	+5.1%	+6.7%	\$24,622
Western MA Medium (801-1600 FTE)	\$13,032	+4.1%	+4.7%	+6.1%	\$23,785
Western MA Large (1601-10K FTE)	\$11,775	+3.9%	+4.5%	+5.9%	\$20,841
Outliers (Springfield)	\$14,608	+4.1%	+5.7%	+9.4%	\$26,615

Table 2

Cohort/District	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Western MA Medium (801-1600 FTE)	\$13,032	+4.1%	+4.7%	+6.1%	\$23,785
Amherst-Pelham Regional	\$16,211	+3.8%	+3.8%	+4.8%	\$28,233
Amherst	\$16,029	+4.6%	+4.7%	+5.7%	\$31,267

Table 3

Cohort/District	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Western MA Tiny (0-200 FTE)	\$14,738	+4.2%	+4.4%	+6.0%	\$27,504
Leverett	\$15,156	+2.5%	+0.5%	+2.0%	\$21,910
Pelham	\$14,733	+3.0%	+3.3%	+5.9%	\$23,040
Shutesbury	\$14,011	+4.4%	+5.3%	+5.0%	\$26,908

Table 1 compares PPE and cost growth of Western MA school district cohorts with the benchmark of all Western MA districts. **Tables 2 and 3** benchmark districts against their cohort averages.

Cohorts are organized by enrollment size. Grouping districts by enrollment size enables more meaningful cost comparisons—districts of similar size face similar challenges with administration, staffing, facilities, and program requirements. Detailed information about cohorts follow in **sections 1 and 2**. Detailed comparisons of individual districts to cohorts follow in **sections 2 and 3**.

Why the CAGR threshold is more sensitive

Small differences in growth rates compound over time. A 0.5pp difference may seem modest, but:

- \$20,000 PPE growing at 4.0% → \$36,019 after 15 years
- \$20,000 PPE growing at 4.5% → \$38,706 after 15 years
- Gap: \$2,687/pupil (7.5% more total growth)

For a 100-student district, that's \$268,700 in additional annual spending by year 15. The 0.5pp threshold helps identify districts on meaningfully different long-term trajectories.

Executive Summary (continued)

Chapter 70 Aid (per foundation pupil): Western MA enrollment cohorts and selected districts

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta CAGR| \geq 0.5pp$

Above baseline

Baseline

$CAGR = (End/Start)^{(1/years)} - 1$

Below baseline

Table 4

Cohort/District	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Western MA (all, excl. Springfield)	\$5,253	+3.6%	+4.4%	+6.6%	\$8,919
Western MA Tiny (0-200 FTE)	\$3,339	+3.2%	+3.8%	+5.4%	\$5,331
Western MA Small (201-800 FTE)	\$3,868	+3.1%	+3.6%	+3.9%	\$6,079
Western MA Medium (801-1600 FTE)	\$5,209	+3.1%	+3.9%	+5.3%	\$8,185
Western MA Large (1601-10K FTE)	\$5,535	+3.7%	+4.6%	+7.0%	\$9,550
Outliers (Springfield)	\$9,305	+4.0%	+5.0%	+7.7%	\$16,866

Table 5

Cohort/District	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Western MA Medium (801-1600 FTE)	\$5,209	+3.1%	+3.9%	+5.3%	\$8,185
Amherst-Pelham Regional	\$5,488	+2.2%	+2.7%	+2.9%	\$7,658
Amherst	\$4,483	+1.9%	+2.2%	+1.6%	\$5,953

Table 6

Cohort/District	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Western MA Tiny (0-200 FTE)	\$3,339	+3.2%	+3.8%	+5.4%	\$5,331
Leverett	\$2,303	+3.6%	+5.4%	+6.7%	\$3,930
Pelham	\$2,743	+2.4%	+1.8%	+7.0%	\$3,941
Shutesbury	\$3,952	+2.6%	+2.7%	+1.8%	\$5,820

Tables 4-6 compare Chapter 70 aid (per foundation pupil) across Western MA school districts organized by enrollment size.

Note about enrollment denominators

Chapter 70 aid and net school spending calculations use foundation enrollment for per-pupil figures, while PPE totals and expense categories use in-district FTE enrollment. These metrics come from different DESE reporting touchpoints:

- **Foundation enrollment** (Chapter 70 profile): All students residing in the district on October 1st of the prior year for whom the district is financially responsible.
- **In-district FTE** (End-of-year-report (EOYR)): Full-year enrollment calculated from total membership days for students either residing in the district, or choiced or tuitioned into the district.

This difference complicates direct comparison between Chapter 70 and expense analyses, but remains valid since each district uses the same denominator type within each metric. The comparison is not apples-to-oranges, but a picture of apples in the morning compared with a picture of apples in the evening. For more information, see the [DESE Researcher's Guide](https://www.doe.mass.edu/research/researchers.html): <https://www.doe.mass.edu/research/researchers.html>

Executive Summary (continued)

Actual NSS above Required NSS (per foundation pupil): Western MA enrollment cohorts and selected districts

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta CAGR| \geq 0.5pp$

Above baseline

Baseline

$CAGR = (End/Start)^{(1/years)} - 1$

Below baseline

Table 7

Cohort/District	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Western MA (all, excl. Springfield)	\$1,345	+5.9%	+8.1%	+2.6%	\$3,161
Western MA Tiny (0-200 FTE)	\$4,580	+6.7%	+7.4%	+4.6%	\$12,057
Western MA Small (201-800 FTE)	\$2,164	+7.4%	+9.7%	+6.0%	\$6,291
Western MA Medium (801-1600 FTE)	\$2,119	+4.0%	+8.7%	+2.8%	\$3,838
Western MA Large (1601-10K FTE)	\$900	+6.5%	+7.7%	+1.5%	\$2,329
Outliers (Springfield)	-\$150	-59.7%	-50.0%	+23.6%	-\$0

Table 8

Cohort/District	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Western MA Medium (801-1600 FTE)	\$2,119	+4.0%	+8.7%	+2.8%	\$3,838
Amherst-Pelham Regional	\$3,407	+3.9%	+4.7%	+2.5%	\$6,059
Amherst	\$6,169	+4.0%	+5.5%	+2.4%	\$11,078

Table 9

Cohort/District	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Western MA Tiny (0-200 FTE)	\$4,580	+6.7%	+7.4%	+4.6%	\$12,057
Leverett	\$7,014	+3.0%	+3.6%	-0.7%	\$10,957
Pelham	\$7,694	+6.7%	+7.1%	+12.6%	\$20,252
Shutesbury	\$4,331	+6.0%	+3.8%	+0.9%	\$10,450

Tables 7-9 compare Actual NSS above Required NSS (per foundation pupil) - showing local funding effort beyond state requirements.

Section 1 — Western MA traditional public school district trends

Section 1 examines per-pupil expenditure (PPE) trends across all Western Massachusetts traditional school districts, organized by enrollment-based cohorts.

This section provides a regional overview before diving into cohort-specific details (Section 2) and individual district comparisons (Section 3).

Contents

- **Per-pupil expenditure and growth 2009-2024** compares 2009 to 2024 PPE for Western MA districts.
- **Year-over-Year (YoY) growth rates** shows the rate of PPE change from 2009-2024 for Amherst-Pelham, Amherst, Leverett, Pelham, Shutesbury, and their cohorts.
- **5-year and 15-year CAGR by district and cohort** shows how compound annual growth rate (CAGR) smooths out the volatility of YoY rates of change, making it easier to understand and compare change in PPE over time.
- **Distribution of 2024 enrollment and proposed cohort grouping** shows a histogram of Western MA districts by enrollment with cohorts determined by statistics visualized by the histogram.
- **Scatterplot analysis** shows the relationship between district enrollment and PPE for 2024, with a table of cohort members.
- **Maps** of district locations and 2024 enrollment cohorts, 2024 PPE vs enrollment cohort baseline, and PPE growth (2009-2024) vs enrollment cohort baseline.
- **Statistical associations** between enrollment and PPE.

All districts are grouped into enrollment cohorts based on 2024 in-district FTE using IQR (Interquartile Range) analysis. This grouping enables meaningful peer comparisons while acknowledging that enrollment size is just one factor influencing costs. Districts in the same cohort can differ significantly in wealth, demographics, geography, facility age, and governance—all of which shape costs and outcomes.

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Section 1 — Western MA traditional public school district trends

Per-pupil expenditure and growth: 2009 PPE (lighter) to 2024 PPE (darker segment)

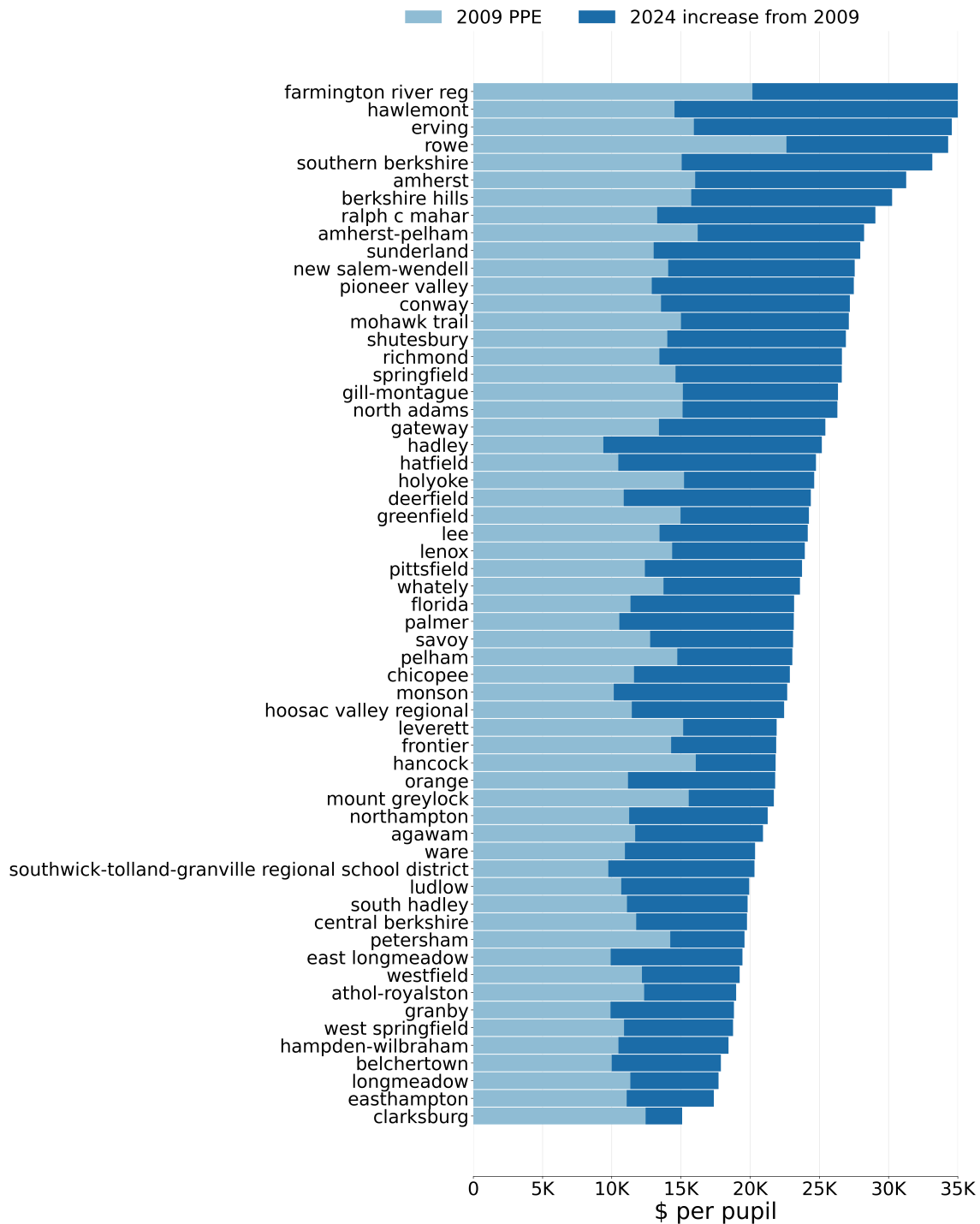


Figure 1

Each bar represents a district's per-pupil expenditures (PPE) in 2024, with growth from 2009 shown by a darker color. Districts are sorted by 2024 spending. While the spread is visible, this alone is nearly meaningless: we don't know to what degree the difference between \$15K and \$30K per student reflects demographic change, education quality, cost-of-living adjustments, special education demand, economies of scale, administrative decisions, ballot box decisions, or legacy cost structures. The next page zeroes in on rates of change in selected districts.

Note: The following districts are omitted from this analysis: Chesterfield-Goshen (missing expenditure data), Hampshire (missing expenditure data), Southampton (missing expenditure data), Warwick (no enrollment data), Westhampton (missing expenditure data), Williamsburg (missing expenditure data).

Section 1 — Western MA traditional public school district trends

Year-over-Year (YoY) growth rates by district and cohort

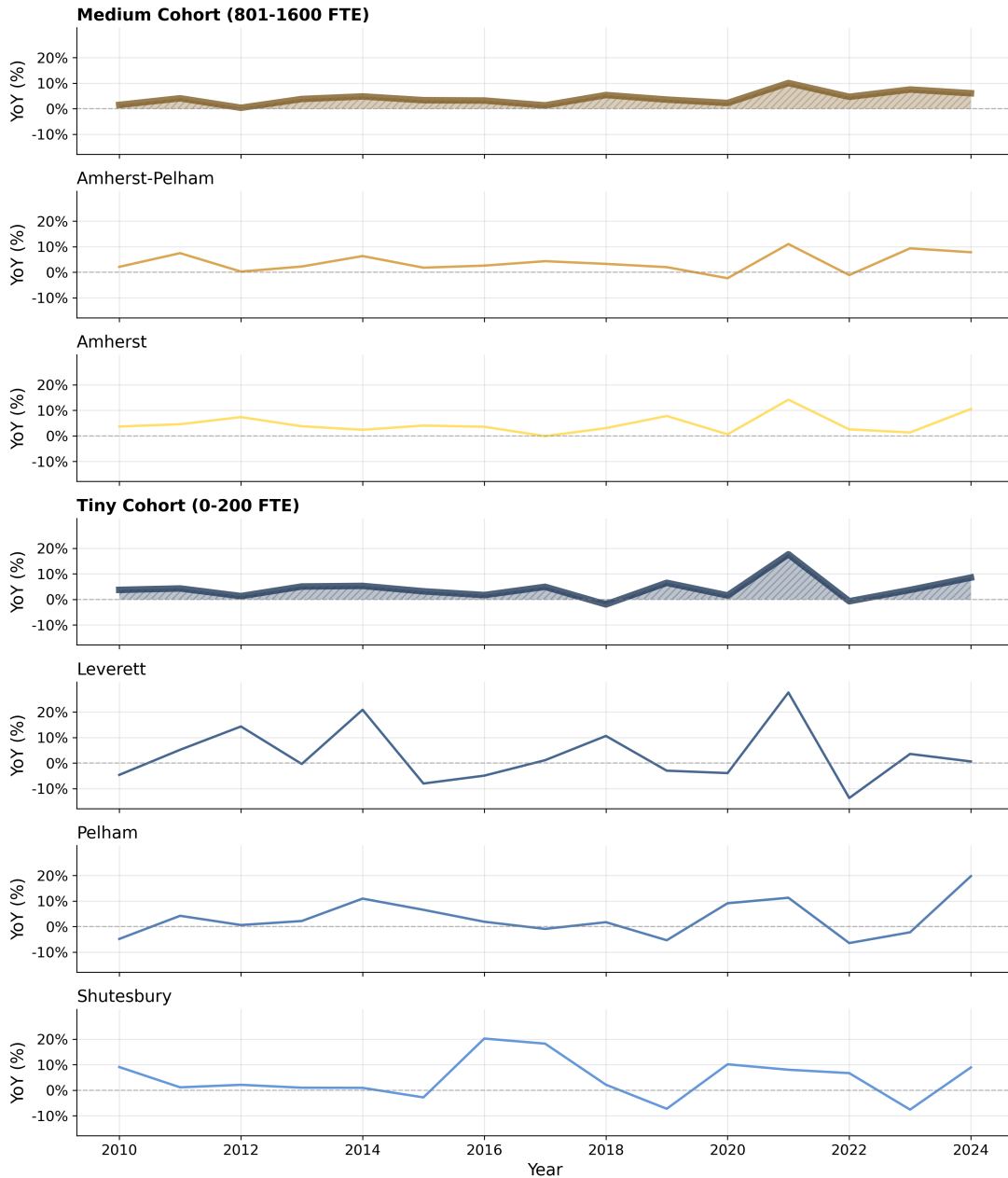


Figure 2

These plots show year-over-year (YoY) growth rates in per-pupil expenditure (PPE) for districts of interest and their enrollment cohorts. Thicker lines represent cohort aggregates, thinner lines show individual districts. Cohort determination is detailed in [Appendix A](#).¹ While patterns emerge, no clear, actionable signal appears across all districts and cohorts over the 2009-2024 period. On the next page, we'll see how a compound growth calculation makes it easier to see similarities and differences between districts.

1. https://github.com/timshores/schools/blob/main/ppe_report/output/WMPPE%20Appendices.pdf

Section 1 — Western MA traditional public school district trends

5-year and 15-year CAGR by district and cohort

Compound annual growth rates (CAGR) smooth out YoY volatility to reveal long-term trends. Below, districts are color-coded by enrollment cohort (blues for Tiny, golds for Medium), with white diagonal lines marking cohort baselines. Comparing three 5-year periods (2009-2014, 2014-2019, 2019-2024) shows how growth rates have shifted over time. The second chart displays overall 15-year CAGR from 2009 to 2024.

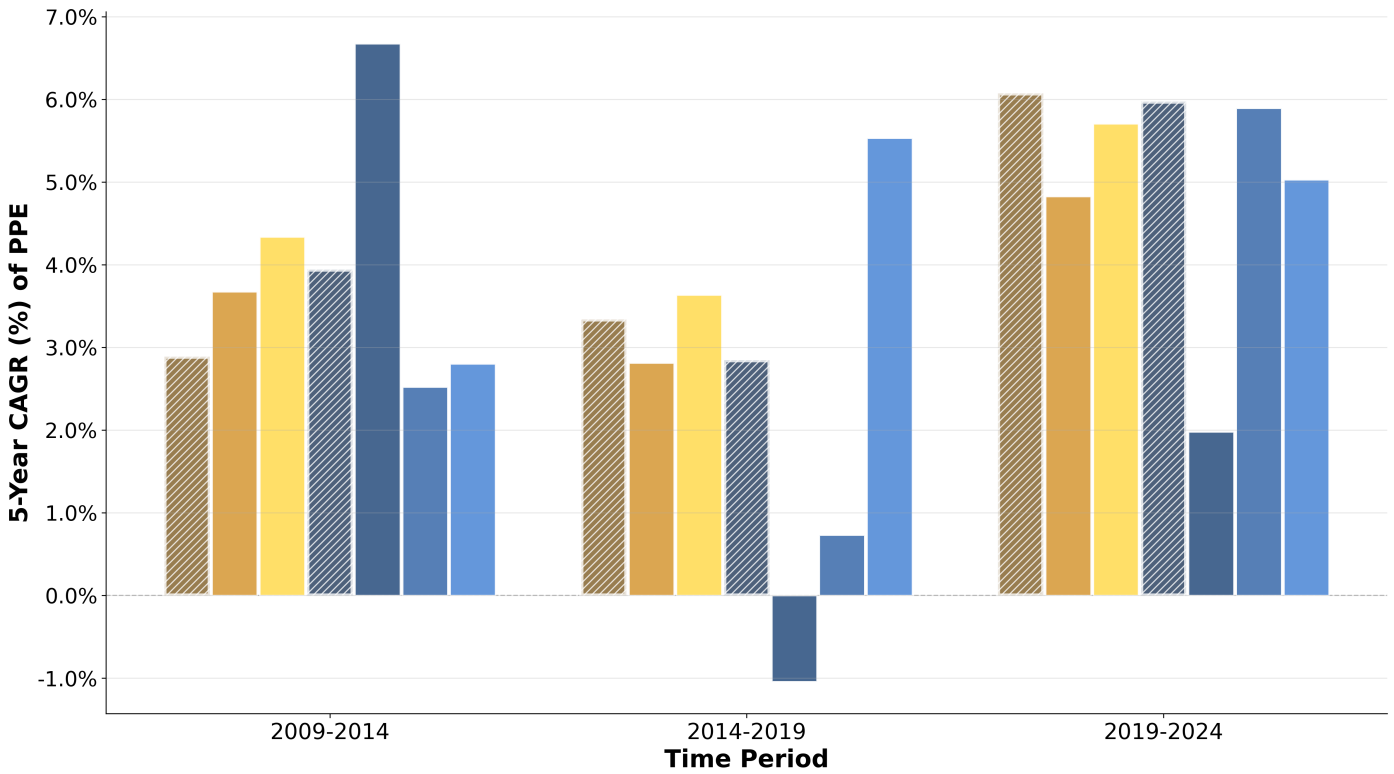


Figure 3

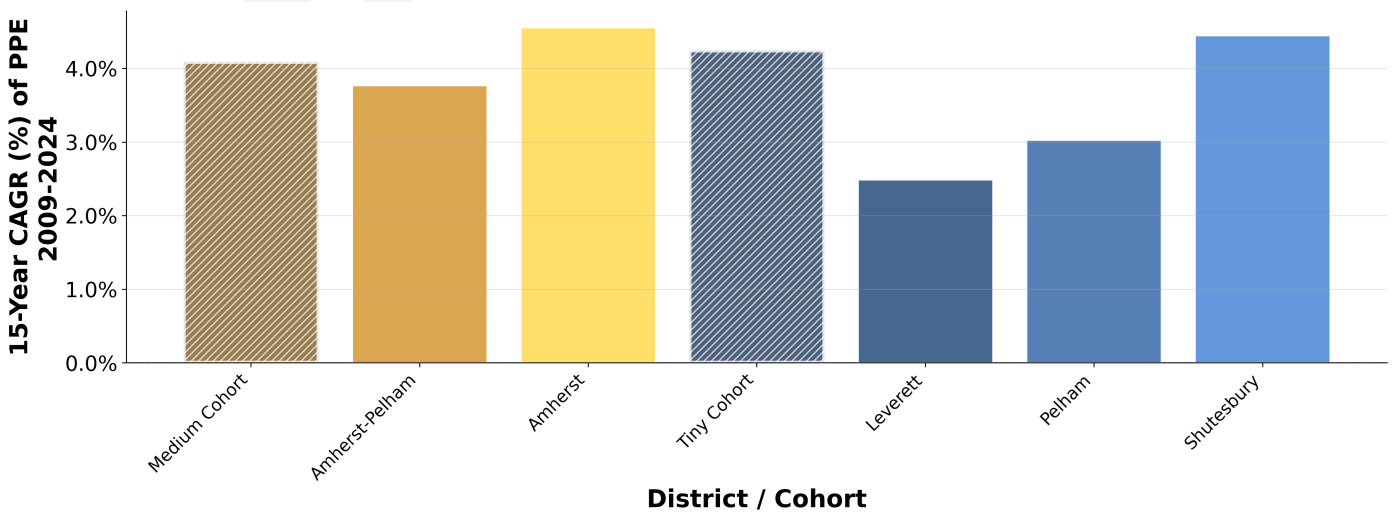


Figure 4

Section 1 — Western MA traditional public school district trends

Distribution of 2024 enrollment and proposed cohort grouping

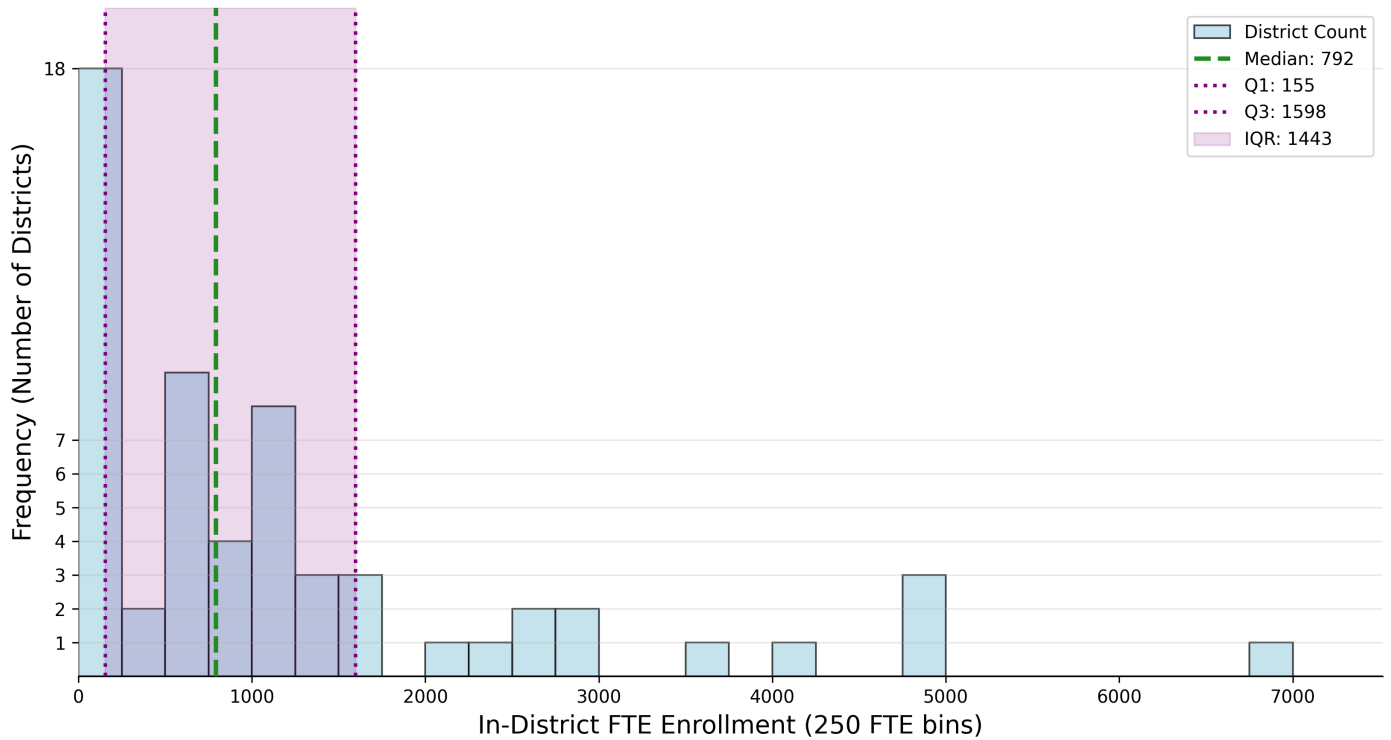


Figure 5

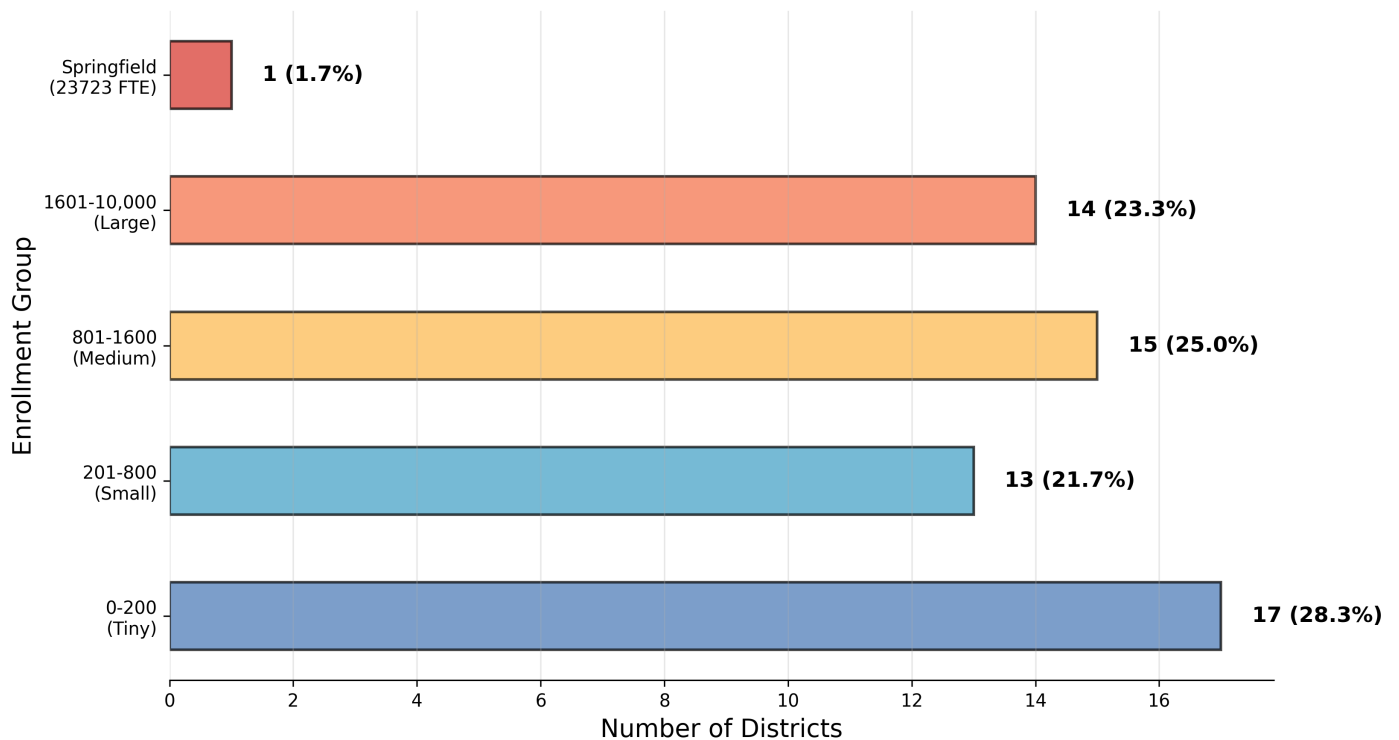


Figure 6

District enrollment cohorts need clear boundaries. To avoid arbitrary cutoffs, this approach uses the natural spread of enrollments. The histogram (top) shows a right-skewed distribution of 2024 enrollments with a long tail of larger districts. Based on interquartile range analysis, districts are grouped into four cohorts (bottom): Tiny (0-200 FTE), Small (201-800 FTE), Medium (801-1600 FTE), and Large (1601-10,000 FTE). Springfield, with an in-district enrollment of 23,723 in 2024, is omitted as an outlier. These cohorts enable comparison by scale to discover financial norms, but are not meant to imply what spending should or should not be for schools of different sizes.

The next page presents each district's enrollment and PPE in both scatterplot and reference table format.

Section 1 — Western MA traditional public school district trends

Scatterplot of enrollment vs. per-pupil expenditure with quartile boundaries (2024)

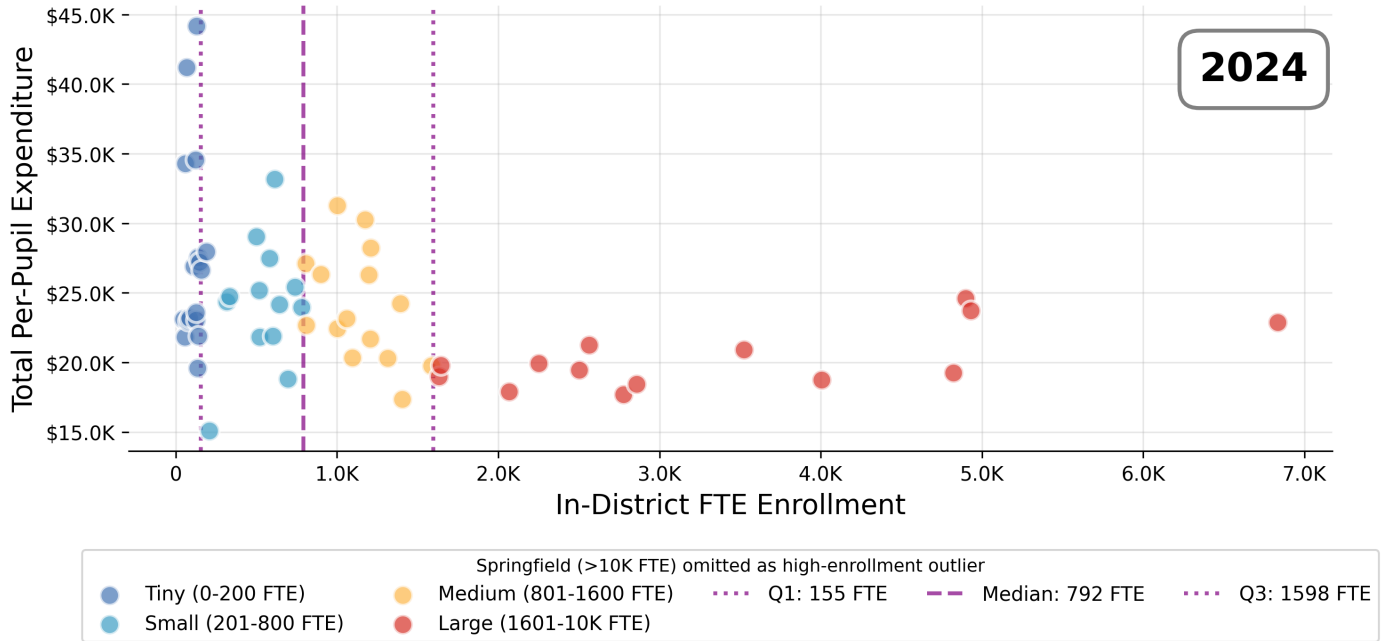


Figure 7

Table 10

District	2024 In-District FTE	2024 PPE ▼	District	2024 In-District FTE	2024 PPE ▼
● Farmington River Reg (Regional K-12)	128	\$44,178	● Amherst	1,002	\$31,267
● Hawlemont (Regional K-12)	67	\$41,189	● Berkshire Hills	1,174	\$30,257
● Erving	123	\$34,566	● Amherst-Pelham (Secondary Region)	1,209	\$28,233
● Rowe	60	\$34,297	● Mohawk Trail (Regional K-12)	805	\$27,124
● Sunderland	191	\$27,953	● Gill-Montague (Regional K-12)	900	\$26,345
● New Salem-Wendell	138	\$27,553	● North Adams	1,196	\$26,300
● Conway	146	\$27,200	● Greenfield	1,394	\$24,237
● Shutesbury	110	\$26,908	● Palmer	1,062	\$23,154
● Richmond	158	\$26,631	● Monson	808	\$22,675
● Whately	127	\$23,593	● Hoosac Valley Regional	1,003	\$22,450
● Florida	86	\$23,175	● Mount Greylock (Regional K-12)	1,207	\$21,705
● Savoy	47	\$23,099	● Ware	1,096	\$20,348
● Pelham	126	\$23,040	● Southwick-Tolland-Granville Regional School District (Regional K-12)	1,313	\$20,311
● Worthington	77	\$22,985	● Central Berkshire (Regional K-12)	1,586	\$19,773
● Leverett	142	\$21,910	● Easthampton	1,404	\$17,371
● Hancock	56	\$21,836	● Holyoke	4,899	\$24,619
● Petersham	134	\$19,591	● Pittsfield	4,931	\$23,739
● Southern Berkshire (Regional K-12)	614	\$33,162	● Chicopee	6,834	\$22,866
● Ralph C Mahar (Secondary Region)	500	\$29,040	● Northampton	2,562	\$21,267
● Pioneer Valley (Regional K-12)	581	\$27,490	● Agawam	3,523	\$20,920
● Gateway (Regional K-12)	740	\$25,430	● Ludlow	2,251	\$19,928
● Hadley	516	\$25,173	● South Hadley	1,643	\$19,810
● Hatfield	332	\$24,752	● East Longmeadow	2,503	\$19,444
● Deerfield	317	\$24,382	● Westfield	4,821	\$19,236
● Lee	643	\$24,155	● Athol-Royalston	1,633	\$18,981
● Lenox	779	\$23,944	● West Springfield	4,004	\$18,760
● Frontier (Secondary Region)	602	\$21,881	● Hampden-Wilbraham (Regional K-12)	2,858	\$18,436
● Orange	521	\$21,809	● Belchertown	2,068	\$17,887
● Granby	695	\$18,824	● Longmeadow	2,777	\$17,710
● Clarksburg	208	\$15,078	● Springfield	23,723	\$26,615

Section 1 — Western MA traditional public school district trends

Geographic map showing district locations and enrollment cohorts (2024)

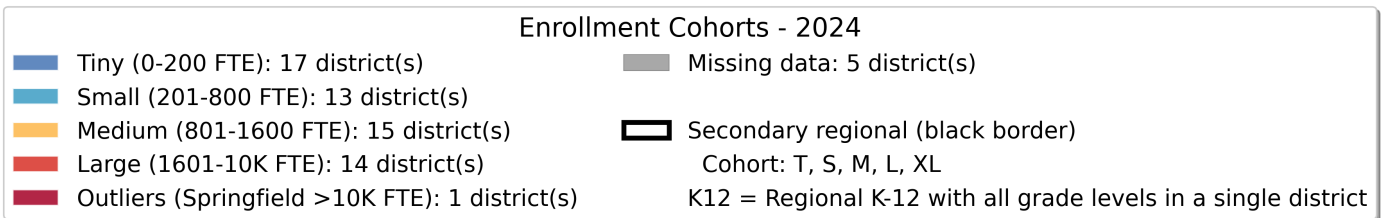
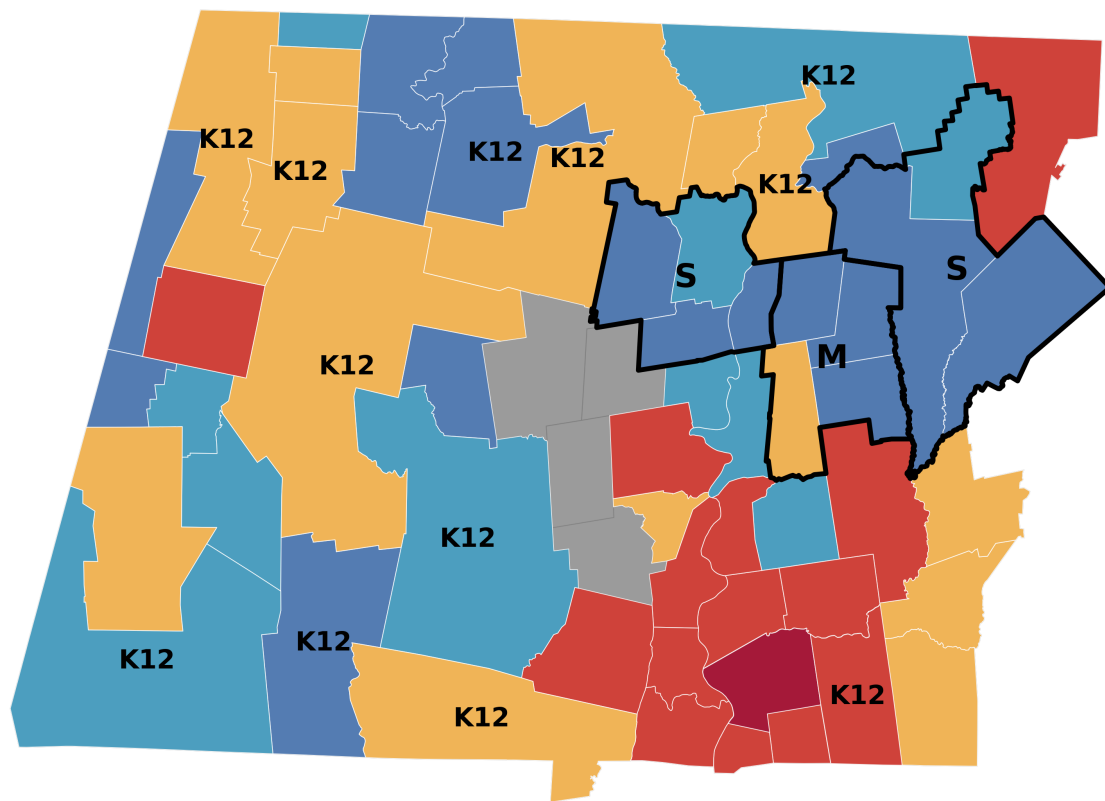


Figure 8

Geography matters for understanding school costs. This map shows where enrollment cohorts cluster and how regional district boundaries cross municipal lines.

Single-town elementary and PK-12 regions appear as solid shaded areas, colored by their enrollment cohort (blue for Tiny, light blue for Small, yellow for Medium, orange for Large). Regional K-12 districts (marked 'K12') span multiple towns. Secondary regional districts are outlined with thick black borders and labeled (T/S/M/L) to show their cohort without covering up their member elementary districts.

See also the [MassGIS map of Public School Districts](https://massgis.maps.arcgis.com/apps/webappviewer/index.html?id=5b652451857f41ecabc5aa96ef53641c).

<https://massgis.maps.arcgis.com/apps/webappviewer/index.html?id=5b652451857f41ecabc5aa96ef53641c>

Section 1 — Western MA traditional public school district trends

Geographic map showing 2024 PPE vs enrollment cohort baseline

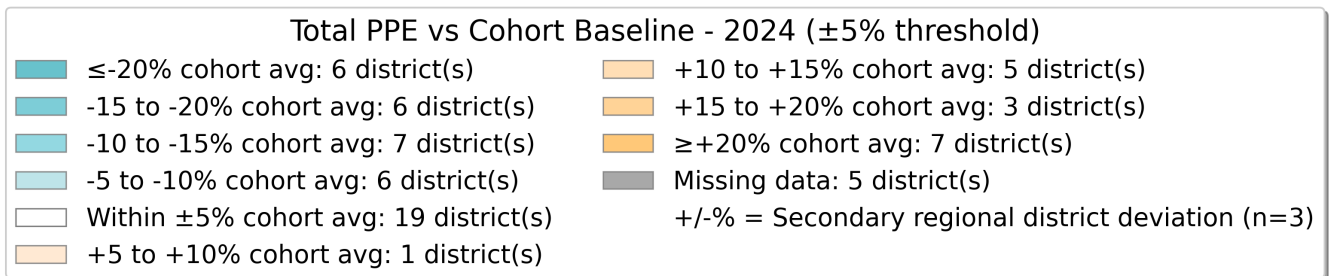
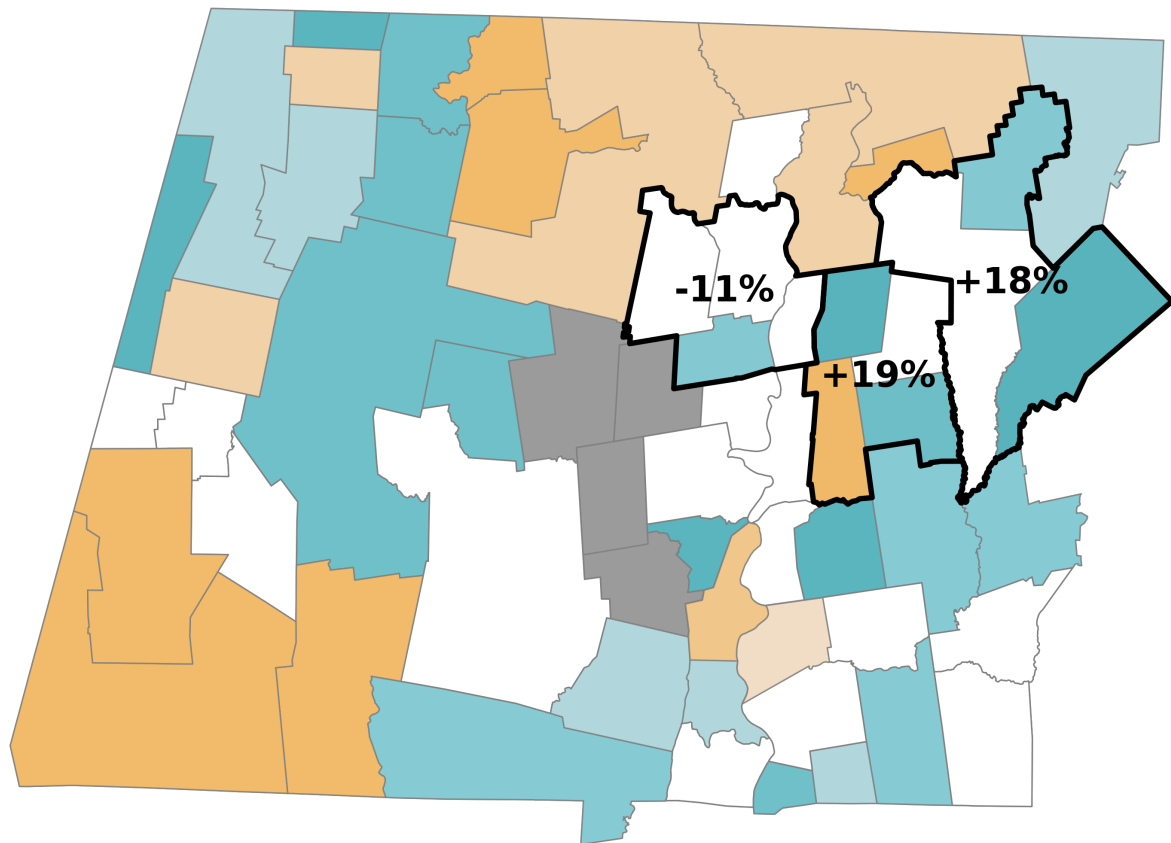


Figure 9

This map shows each district's 2024 per-pupil spending compared to its enrollment cohort baseline (weighted average of all Western MA districts in that cohort). This helps identify which districts are operating above or below the typical spending level for their enrollment size, accounting for the well-documented relationship between district size and per-pupil costs.

Color coding: Dark green indicates districts spending more than 10% below their cohort average (most cost-efficient). Light green shows 0-10% below average. Light red shows 0-10% above average. Dark red indicates districts spending more than 10% above their cohort average (highest relative cost).

See also the [MassGIS map of Public School Districts](https://massgis.maps.arcgis.com/apps/webappviewer/index.html?id=5b652451857f41ecabc5aa96ef53641c).

<https://massgis.maps.arcgis.com/apps/webappviewer/index.html?id=5b652451857f41ecabc5aa96ef53641c>

Section 1 — Western MA traditional public school district trends

Geographic map showing 15-year PPE growth (2009-2024) vs enrollment cohort baseline

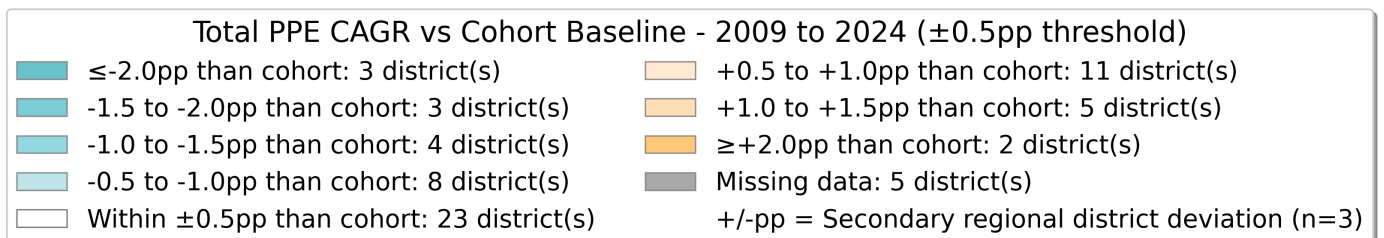
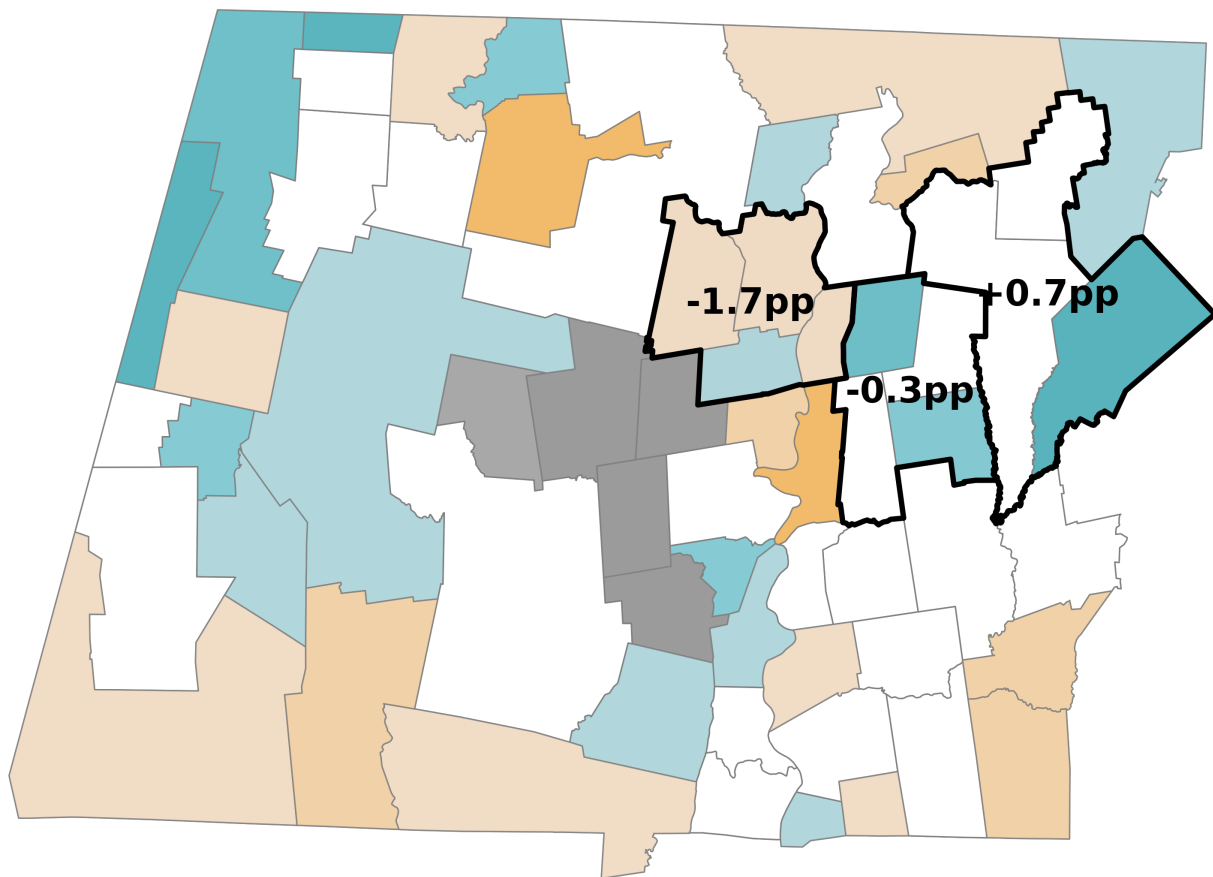


Figure 10

This map shows each district's 15-year spending growth rate (CAGR, 2009-2024) compared to its enrollment cohort baseline growth rate. This helps identify which districts experienced faster or slower spending growth than similar-sized districts, revealing local policy decisions and cost pressures beyond typical enrollment cohort trends.

Color coding: Dark blue indicates districts with growth more than 0.5 percentage points slower than their cohort average. Light blue shows 0-0.5 pp slower. Light orange shows 0-0.5 pp faster. Dark orange indicates districts with growth more than 0.5 pp faster than their cohort average.

See also the [MassGIS map of Public School Districts](https://massgis.maps.arcgis.com/apps/webappviewer/index.html?id=5b652451857f41ecabc5aa96ef53641c).

<https://massgis.maps.arcgis.com/apps/webappviewer/index.html?id=5b652451857f41ecabc5aa96ef53641c>

CLAUDE THIS IS WHERE THE NEW APPENDIX B WILL BEGIN

Section 1 — Western MA traditional public school district trends (continued)

Statistical Associations between Enrollment and Per-Pupil Expenditures

District Size: A Factor, Not the Factor

The five-number summaries and box plots below show two critical dimensions: where districts are now (2024 PPE) and how they got there (2009-2024 PPE growth rates). Box plots show the spread of current spending within each size cohort. Wide boxes indicate greater spending variation; narrow boxes suggest similar spending patterns. The median line shows typical spending for each cohort.

Key finding

Size doesn't tell us much: Enrollment cohort membership explains only 22% of spending variation.

2024 PPE by cohort

Cohort	n	Min	Q1	Median	Q3	Max	Distribution
Tiny (0-200 FTE)	17	\$19,591	\$23,040	\$26,631	\$27,953	\$44,178	
Small (201-800 FTE)	13	\$15,078	\$21,881	\$24,382	\$25,430	\$33,162	
Medium (801-1600 FTE)	15	\$17,371	\$21,026	\$23,154	\$26,734	\$31,267	
Large (1601-10K FTE)	14	\$17,710	\$18,815	\$19,627	\$21,180	\$24,619	
Outliers (Springfield >10K FTE)	1	\$26,615	\$26,615	\$26,615	\$26,615	\$26,615	

2009-2024 PPE growth rates by cohort

Cohort	n	Min	Q1	Median	Q3	Max	Distribution
Tiny (0-200 FTE)	16	2.1%	3.0%	4.5%	5.0%	7.2%	
Small (201-800 FTE)	13	1.3%	4.0%	4.6%	5.4%	6.8%	
Medium (801-1600 FTE)	15	2.2%	3.6%	4.0%	4.6%	5.5%	
Large (1601-10K FTE)	14	2.9%	3.4%	3.9%	4.3%	4.6%	
Outliers (Springfield >10K FTE)	1	4.1%	4.1%	4.1%	4.1%	4.1%	

Similar Growth, Different Starting Points

Growth rates are remarkably consistent across cohorts (3.4-4.6% median CAGR), with the large outlier Springfield growing the slowest. This uniform growth means current spending differences primarily reflect where districts started, not how fast they've grown.

Section 1 — Western MA traditional public school district trends (continued)

Statistical Associations between Enrollment and Chapter 70 Aid (per foundation pupil)






State Aid Doesn't Equalize

This section examines the distribution of Chapter 70 state aid (per foundation pupil) across Western Massachusetts traditional districts organized by enrollment size. The five-number summaries below show two dimensions: current aid levels (2024 Ch70 Aid) and how they grew over time (2009-2024 growth rates).






Key finding

Chapter 70 aid shows a pattern: Medium and Large cohorts receive comparable or higher per-pupil state aid than Tiny districts. Despite this, smaller districts still have higher total PPE — a difference that may be caused by state aid formulas that don't offset enrollment-based cost differences.

2024 Chapter 70 aid per foundation pupil by cohort

Cohort	n	Min	Q1	Median	Q3	Max	Distribution
Tiny (0-200 FTE)	15	\$2,739	\$3,903	\$5,068	\$6,748	\$13,057	
Small (201-800 FTE)	10	\$2,751	\$3,172	\$5,063	\$7,436	\$11,801	
Medium (801-1600 FTE)	8	\$5,446	\$7,232	\$8,660	\$9,433	\$10,702	
Large (1601-10K FTE)	11	\$2,605	\$5,426	\$7,315	\$11,653	\$16,362	
Outliers (Springfield >10K FTE)	1	\$16,866	\$16,866	\$16,866	\$16,866	\$16,866	

2009-2024 Chapter 70 Aid growth rates per by cohort

Cohort	n	Min	Q1	Median	Q3	Max	Distribution
Tiny (0-200 FTE)	15	-5.5%*	2.5%	3.6%	5.6%	6.6%	
Small (201-800 FTE)	10	2.4%	2.7%	2.9%	3.3%	5.6%	
Medium (801-1600 FTE)	8	1.6%	2.2%	3.0%	3.8%	4.2%	
Large (1601-10K FTE)	11	0.9%	2.5%	3.2%	4.2%	4.5%	
Outliers (Springfield >10K FTE)	1	4.0%	4.0%	4.0%	4.0%	4.0%	

* The Worthington district shows anomalous foundation enrollment data, reporting only 8 students in 2009 but 120 students in 2024. Chapter 70 aid increased from \$72,731 to \$464,966 over this period. However, this represents a decrease in per-pupil aid from approximately \$9,091 to \$3,875. The unrealistically low foundation enrollment figures prior to 2016 suggest a structural district change or data reporting issue rather than actual enrollment patterns. Such outliers may warrant exclusion from statistical analyses to avoid skewing results.

Section 1 — Western MA traditional public school district trends (continued)

Statistical Associations between Enrollment and Actual NSS (per foundation pupil)

Local Effort Varies Widely

The widest variation appears in discretionary local spending above state requirements. Within the Tiny cohort alone, local effort ranges from \$1,275 to \$34,082 per pupil above required minimums. This suggests local wealth and priorities — not enrollment — drive spending variation.

2024 Actual NSS above Required NSS per foundation pupil by cohort

Cohort	n	Min	Q1	Median	Q3	Max	Distribution
Tiny (0-200 FTE)	15	\$1,275	\$9,195	\$10,950	\$15,094	\$34,082	
Small (201-800 FTE)	10	\$147	\$2,201	\$7,381	\$9,048	\$18,877	
Medium (801-1600 FTE)	8	\$546	\$1,413	\$2,891	\$6,140	\$11,078	
Large (1601-10K FTE)	11	-\$491	\$1,163	\$2,542	\$4,888	\$5,325	
Outliers (Springfield >10K FTE)	1	\$-0	\$-0	\$-0	\$-0	\$-0	

2009-2024 Actual NSS above Required NSS growth rates by cohort

Cohort	n	Min	Q1	Median	Q3	Max	Distribution
Tiny (0-200 FTE)	15	-3.7%	4.3%	6.0%	8.8%	11.3%	
Small (201-800 FTE)	10	-11.4%	3.1%	6.5%	9.0%	19.5%	
Medium (801-1600 FTE)	8	-0.6%	2.6%	3.6%	5.4%	15.5%	
Large (1601-10K FTE)	11	-0.8%	3.8%	7.6%	10.1%	13.8%	
Outliers (Springfield >10K FTE)	1	59.7%	59.7%	59.7%	59.7%	59.7%	

High-spending district patterns

- Historically elevated baselines (high 2009 PPE)
- Moderate growth rates
- Substantial local funding above minimum required spending

Amherst-Pelham exemplifies this: 24% above cohort in 2009, growing slower than peers (3.77% vs 4.09%), yet maintaining position through consistently high local contribution.

Section 2 — Western MA cohort details

Section 2 provides detailed per-pupil expenditure (PPE) and Net School Spending (NSS) analysis for Western Massachusetts enrollment cohorts: Tiny, Small, Medium, Large, and Springfield. Each cohort section includes:

- Aggregate **expenditure trends by category** (instruction, administration, operations, etc.)
- Aggregate **Chapter 70 aid** and **NSS** patterns over time
- **Enrollment-weighted averages** that represent typical spending across all districts in each cohort

These cohort pages serve as regional baselines for understanding cost patterns by district size.

To skip to **Section 3 — Selected districts**, turn to page 32.

Report Navigation:

Table of Contents	1
Executive Summary	2
Section 1: Western MA Traditional District Trends	7
Section 2: Western MA Cohort Details	19
Section 3: Selected Districts	32

Section 2 — Western MA cohort details

Tiny (0-200 FTE) — PPE and Enrollment — Weighted average per district.

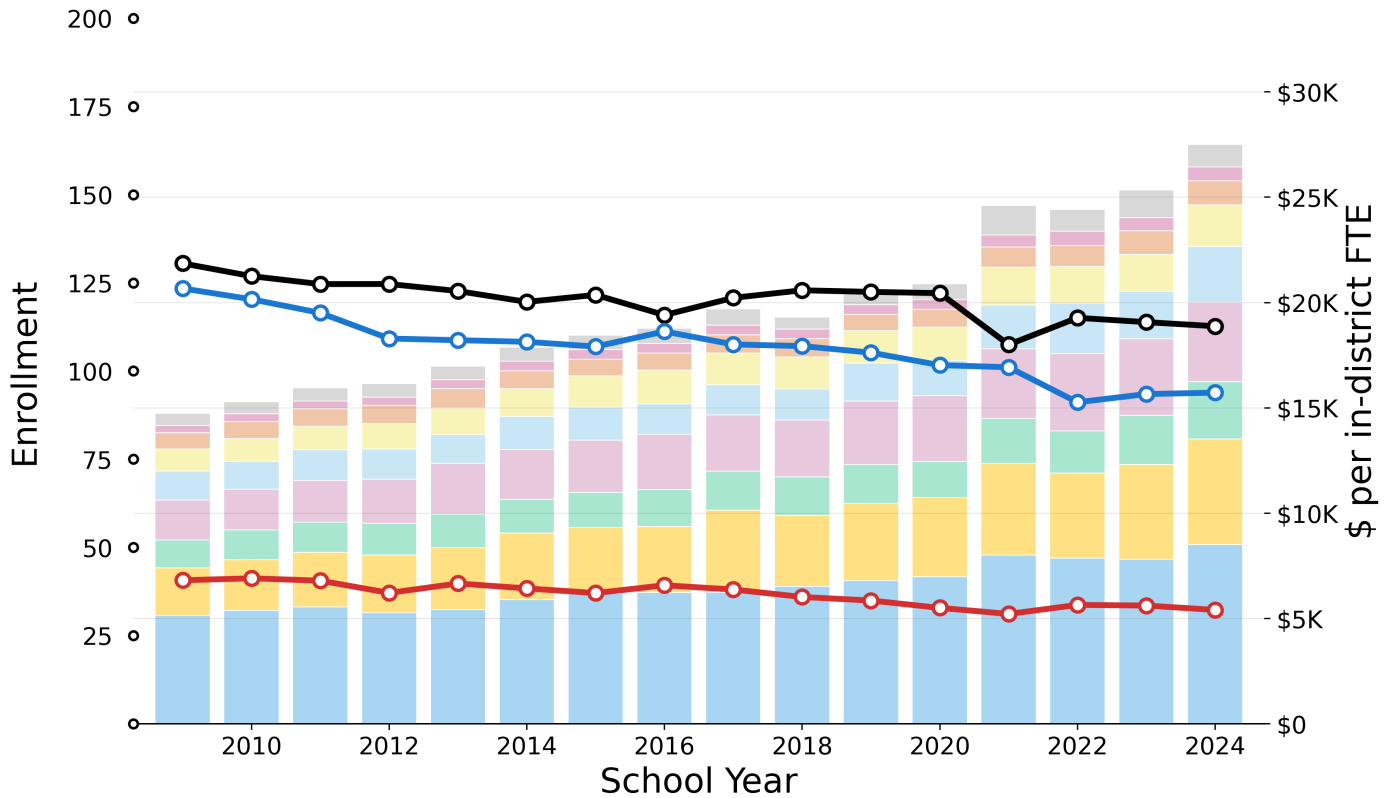


Figure 11

Table 11

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$577	+4.1%	+4.7%	+9.4%	\$1,057
Guidance, Counseling and Testing	\$345	+4.6%	+3.9%	+8.0%	\$674
Administration	\$770	+2.6%	+2.8%	+7.9%	\$1,126
Instructional Leadership	\$1,042	+4.4%	+4.2%	+5.2%	\$1,991
Operations and Maintenance	\$1,374	+4.5%	+5.5%	+7.9%	\$2,652
Other Teaching Services	\$1,899	+4.7%	+4.7%	+4.6%	\$3,757
Pupil Services	\$1,324	+4.9%	+5.5%	+7.9%	\$2,732
Insurance, Retirement and Other	\$2,258	+5.5%	+4.8%	+6.5%	\$5,009
Teachers	\$5,148	+3.4%	+3.7%	+4.6%	\$8,507
Total	\$14,738	+4.2%	+4.4%	+6.0%	\$27,504

Table 12

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	131	-1.0%	-0.6%	-1.6%	113
Foundation Enrollment	123	-1.8%	-1.4%	-2.3%	94
Out-of-District FTE Pupils	41	-1.5%	-1.7%	-1.6%	32

Shading vs baseline: $|\Delta\$/\text{pupil}| \geq 5.0\%$, $|\Delta\text{Enrollment}| \geq 5.0\%$, $|\Delta\text{CAGR}| \geq 0.5\text{pp}$

$$\text{CAGR} = (\text{End}/\text{Start})^{(1/\text{years})} - 1$$

Above Western MA baseline

Below Western MA baseline

→ Compare to PPE and Enrollment for [Western MA \(all, excl. Springfield\)](#) (page 30), [Leverett](#) (page 37), [Pelham](#) (page 39), [Shutesbury](#) (page 41)

Section 2 — Western MA cohort details

Tiny (0-200 FTE) — Chapter 70 Aid and Net School Spending (per foundation pupil).

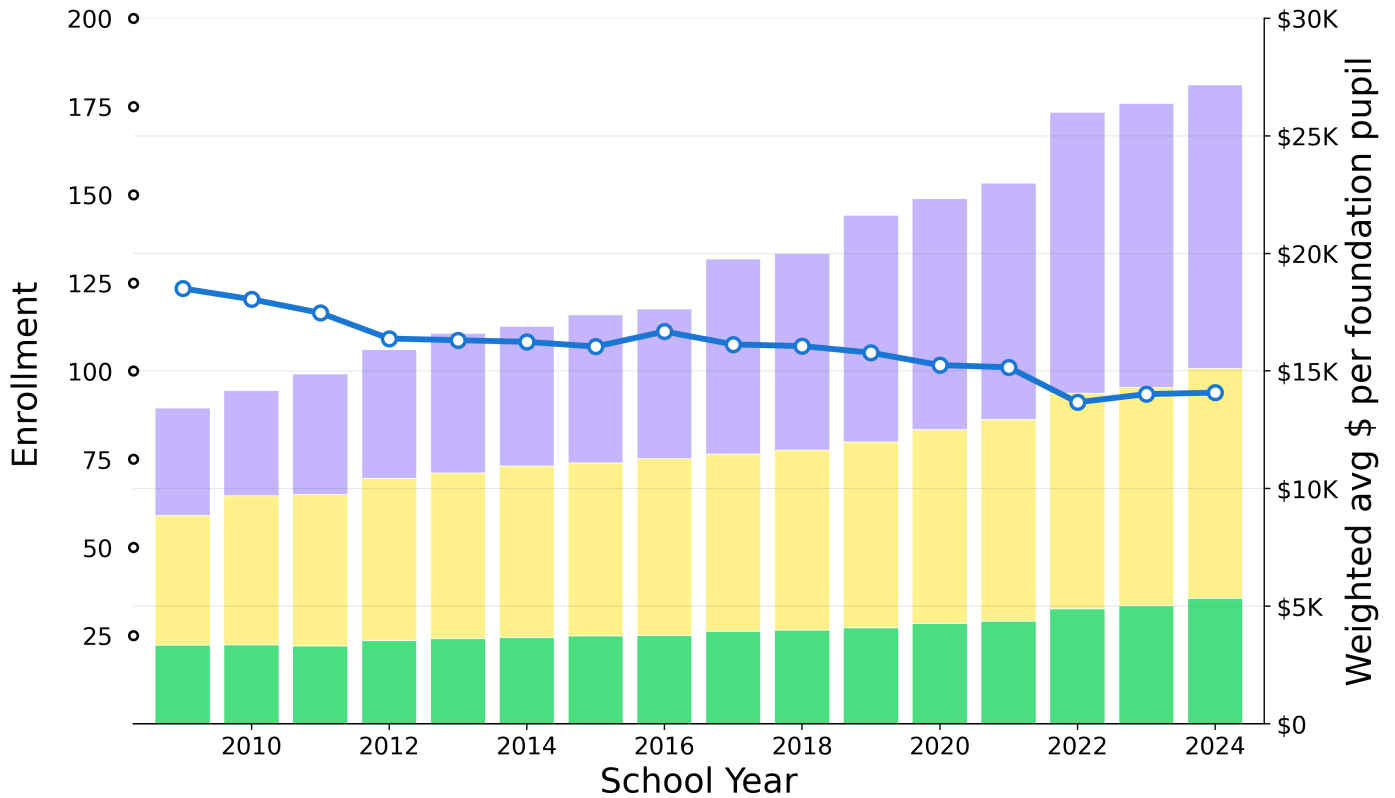


Figure 12

Table 13

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$4,580	6.67%	7.36%	4.56%	\$12,057
Req NSS (minus Ch70)	\$5,508	3.90%	2.97%	4.38%	\$9,774
Ch70 Aid	\$3,339	3.17%	3.81%	5.45%	\$5,331
Total (Actual NSS)	\$13,427	4.81%	4.86%	4.66%	\$27,163
Shading vs baseline: $ \Delta\$/pupil \geq 5.0\%$, $ \Delta CAGR \geq 0.5pp$				Above Western MA baseline	
CAGR = $(End/Start)^{(1/years)} - 1$				Below Western MA baseline	

Tiny (0-200 FTE) includes 17 members:

Districts (10): Erving, Florida, Hancock, Leverett, Pelham, Richmond, Rowe, Savoy, Shutesbury, Worthington.

Regional K-12 (7): Conway, Farmington River Reg, Hawlemont, New Salem-Wendell, Petersham, Sunderland, Whately.

→ Compare to Chapter 70 Aid and Net School Spending for [Western MA \(all, excl. Springfield\)](#) (page 31), [Leverett](#) (page 38), [Pelham](#) (page 40), [Shutesbury](#) (page 42)

Section 2 — Western MA cohort details

Small (201-800 FTE) — PPE and Enrollment — Weighted average per district.

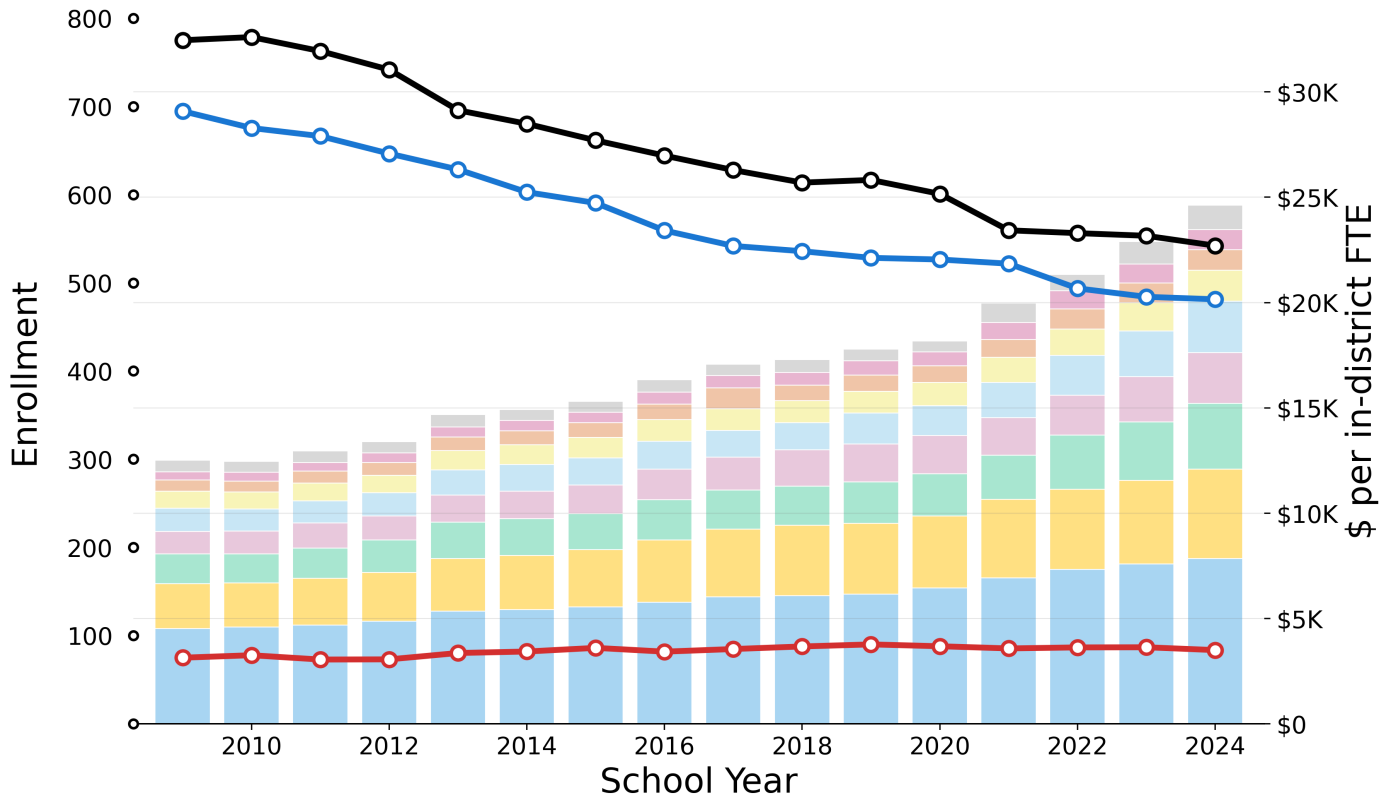


Figure 13

Table 14

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$558	+4.9%	+8.4%	+15.6%	\$1,150
Guidance, Counseling and Testing	\$392	+6.2%	+7.1%	+7.5%	\$961
Administration	\$523	+4.3%	+3.9%	+4.4%	\$976
Instructional Leadership	\$811	+4.0%	+4.4%	+7.6%	\$1,463
Operations and Maintenance	\$1,108	+5.4%	+6.9%	+10.8%	\$2,454
Other Teaching Services	\$1,061	+5.6%	+6.2%	+6.0%	\$2,402
Pupil Services	\$1,421	+5.4%	+6.0%	+9.6%	\$3,122
Insurance, Retirement and Other	\$2,128	+4.7%	+5.2%	+4.8%	\$4,254
Teachers	\$4,522	+3.7%	+3.8%	+5.0%	\$7,838
Total	\$12,523	+4.6%	+5.1%	+6.7%	\$24,622

Table 15

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	775	-2.4%	-2.2%	-2.5%	542
Foundation Enrollment	695	-2.4%	-2.2%	-1.8%	481
Out-of-District FTE Pupils	75	+0.7%	+0.2%	-1.5%	84

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta\text{Enrollment}| \geq 5.0\%$, $|\Delta\text{CAGR}| \geq 0.5\text{pp}$

$$\text{CAGR} = (\text{End}/\text{Start})^{(1/\text{years})} - 1$$

Above Western MA baseline

Below Western MA baseline

Section 2 — Western MA cohort details

Small (201-800 FTE) — Chapter 70 Aid and Net School Spending (per foundation pupil).

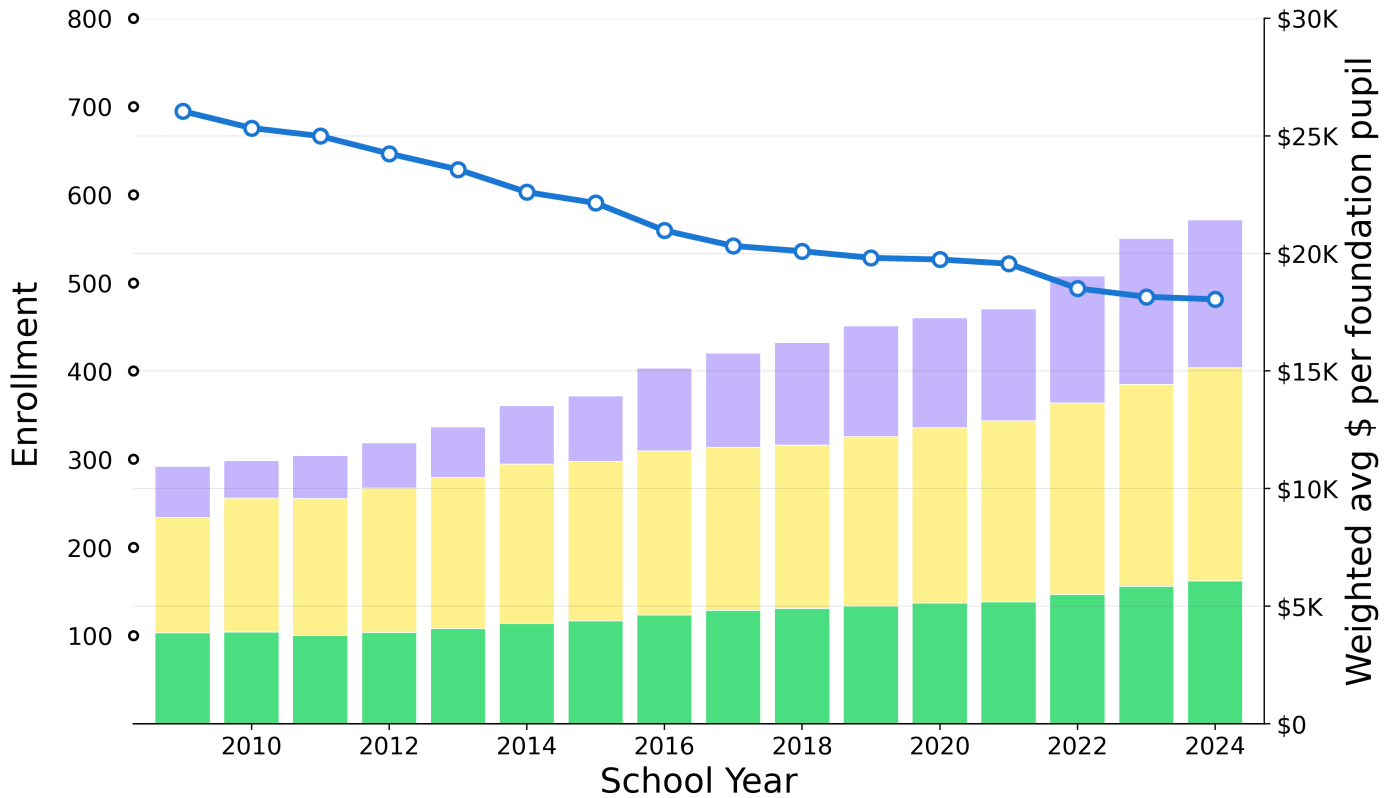


Figure 14

Table 16

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$2,164	7.37%	9.72%	6.00%	\$6,291
Req NSS (minus Ch70)	\$4,906	4.17%	2.92%	4.66%	\$9,053
Ch70 Aid	\$3,868	3.06%	3.63%	3.95%	\$6,079
Total (Actual NSS)	\$10,939	4.58%	4.70%	4.83%	\$21,423
Shading vs baseline: $ \Delta\$/pupil \geq 5.0\%$, $ \Delta CAGR \geq 0.5pp$				Above Western MA baseline	
CAGR = $(End/Start)^{(1/years)} - 1$				Below Western MA baseline	

Small (201-800 FTE) includes 13 members:

Districts (6): Clarksburg, Granby, Hadley, Hatfield, Lee, Lenox.

Regional K-12 (5): Deerfield, Gateway, Orange, Pioneer Valley, Southern Berkshire.

Secondary regions (2): Frontier, Ralph C Mahar.

Section 2 — Western MA cohort details

Medium (801-1600 FTE) — PPE and Enrollment — Weighted average per district.

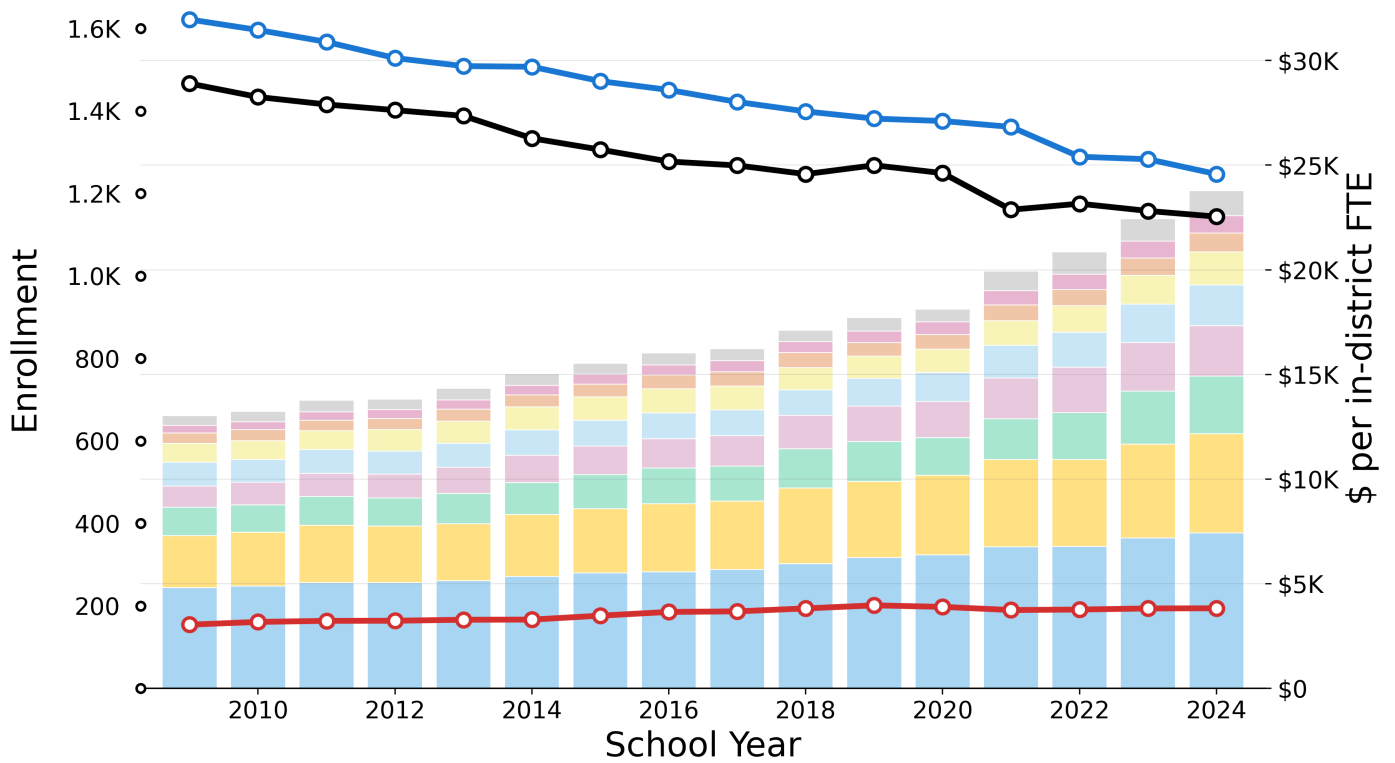


Figure 15

Table 17

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$461	+6.6%	+8.1%	+13.3%	\$1,200
Guidance, Counseling and Testing	\$373	+5.4%	+6.1%	+8.7%	\$826
Administration	\$494	+4.2%	+4.7%	+6.9%	\$911
Instructional Leadership	\$893	+3.8%	+3.7%	+8.2%	\$1,573
Operations and Maintenance	\$1,150	+3.6%	+4.9%	+8.0%	\$1,953
Other Teaching Services	\$1,014	+5.9%	+6.2%	+7.3%	\$2,395
Pupil Services	\$1,351	+4.9%	+6.1%	+7.5%	\$2,755
Insurance, Retirement and Other	\$2,483	+4.4%	+4.9%	+5.5%	\$4,740
Teachers	\$4,813	+2.9%	+3.3%	+3.5%	\$7,431
Total	\$13,032	+4.1%	+4.7%	+6.1%	\$23,785

Table 18

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	1,466	-1.6%	-1.5%	-2.0%	1,144
Foundation Enrollment	1,622	-1.7%	-1.9%	-2.0%	1,247
Out-of-District FTE Pupils	154	+1.5%	+1.5%	-0.7%	194
Shading vs baseline: $ \Delta\$/\text{pupil} \geq 5.0\%$, $ \Delta\text{Enrollment} \geq 5.0\%$, $ \Delta\text{CAGR} \geq 0.5\text{pp}$					Above Western MA baseline
CAGR = $(\text{End}/\text{Start})^{(1/\text{years})} - 1$					Below Western MA baseline

→ Compare to PPE and Enrollment for [Western MA \(all, excl. Springfield\)](#) (page 30), [Amherst-Pelham](#) (page 33), [Amherst](#) (page 35)

Section 2 — Western MA cohort details

Medium (801-1600 FTE) — Chapter 70 Aid and Net School Spending (per foundation pupil).

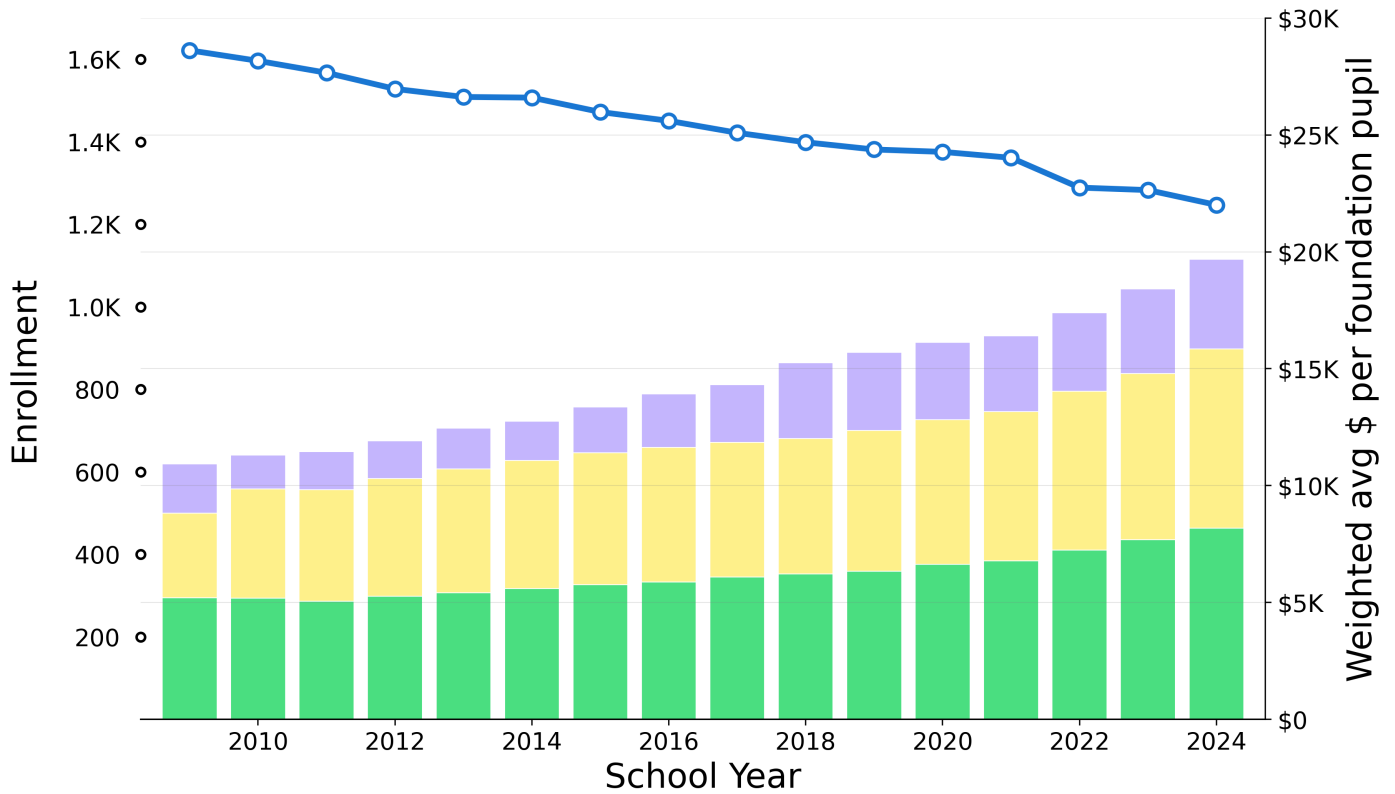


Figure 16

Table 19

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$2,119	4.04%	8.66%	2.79%	\$3,838
Req NSS (minus Ch70)	\$3,607	5.14%	3.40%	4.93%	\$7,653
Ch70 Aid	\$5,209	3.06%	3.88%	5.25%	\$8,185
Total (Actual NSS)	\$10,935	3.99%	4.43%	4.62%	\$19,676

Shading vs baseline: $|\Delta\$/\text{pupil}| \geq 5.0\%$, $|\Delta\text{CAGR}| \geq 0.5\text{pp}$

Above Western MA baseline

Below Western MA baseline

$\text{CAGR} = (\text{End}/\text{Start})^{(1/\text{years})} - 1$

Medium (801-1600 FTE) includes 15 members:

Districts (8): Amherst, Berkshire Hills, Easthampton, Greenfield, Monson, North Adams, Palmer, Ware.

Regional K-12 (6): Central Berkshire, Gill-Montague, Hoosac Valley Regional, Mohawk Trail, Mount Greylock, Southwick-Tolland-Granville Regional School District.

Secondary regions (1): Amherst-Pelham.

→ Compare to Chapter 70 Aid and Net School Spending for [Western MA \(all, excl. Springfield\)](#) (page 31), [Amherst-Pelham](#) (page 34), [Amherst](#) (page 36)

Section 2 — Western MA cohort details

Large (1601-10K FTE) — PPE and Enrollment — Weighted average per district.

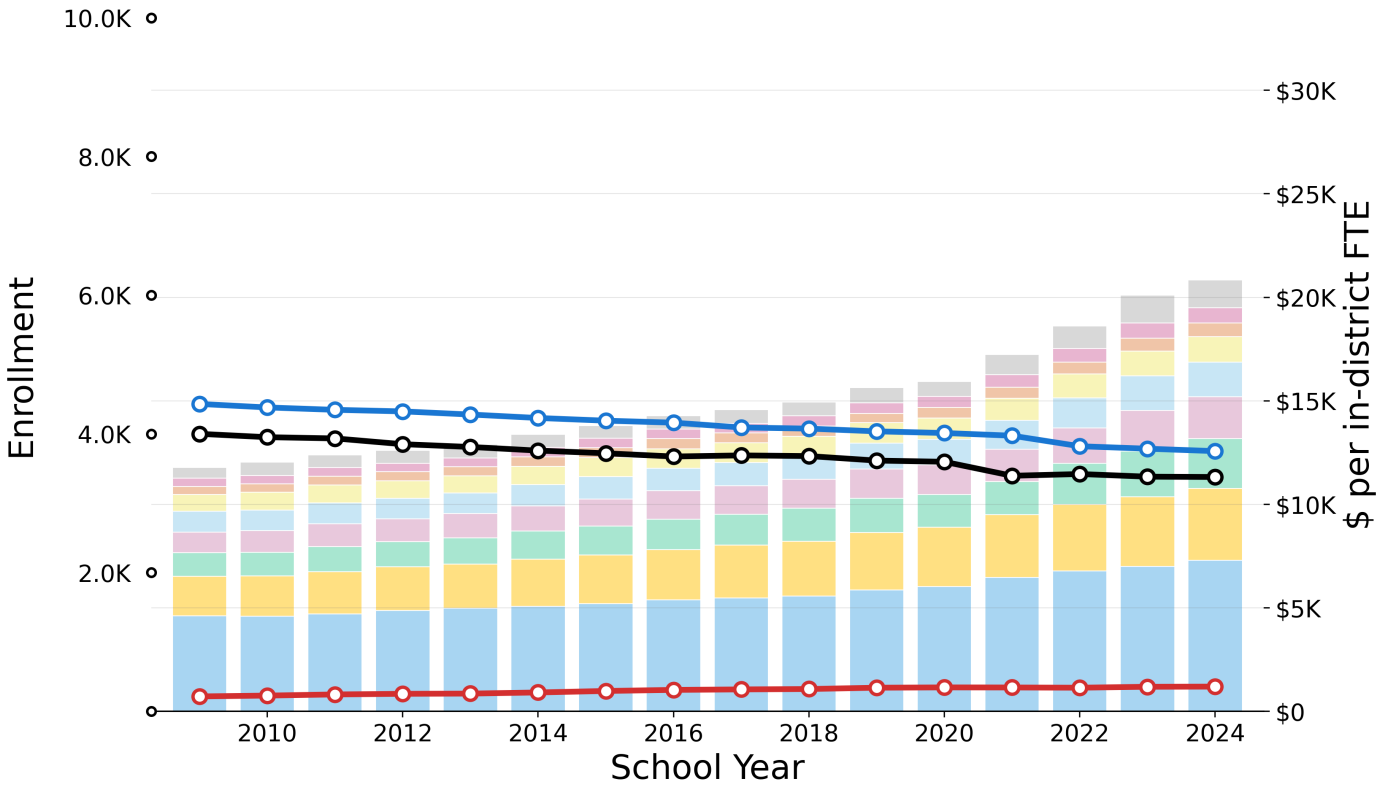


Figure 17

Table 20

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$513	+6.6%	+7.9%	+13.3%	\$1,348
Guidance, Counseling and Testing	\$397	+4.2%	+5.3%	+7.7%	\$740
Administration	\$392	+3.4%	+3.5%	+7.5%	\$649
Instructional Leadership	\$811	+2.8%	+3.3%	+4.3%	\$1,231
Operations and Maintenance	\$1,014	+3.4%	+5.1%	+6.2%	\$1,683
Other Teaching Services	\$990	+4.9%	+5.1%	+7.5%	\$2,021
Pupil Services	\$1,135	+5.1%	+5.9%	+7.7%	\$2,408
Insurance, Retirement and Other	\$1,911	+4.1%	+4.3%	+4.6%	\$3,469
Teachers	\$4,613	+3.1%	+3.7%	+4.5%	\$7,292
Total	\$11,775	+3.9%	+4.5%	+5.9%	\$20,841

Table 21

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	4,001	-1.1%	-1.1%	-1.3%	3,379
Foundation Enrollment	4,432	-1.1%	-1.2%	-1.5%	3,752
Out-of-District FTE Pupils	215	+3.4%	+2.7%	+0.9%	357

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta\text{Enrollment}| \geq 5.0\%$, $|\Delta\text{CAGR}| \geq 0.5\text{pp}$

Above Western MA baseline

$\text{CAGR} = (\text{End}/\text{Start})^{(1/\text{years})} - 1$

Below Western MA baseline

Section 2 — Western MA cohort details

Large (1601-10K FTE) — Chapter 70 Aid and Net School Spending (per foundation pupil).

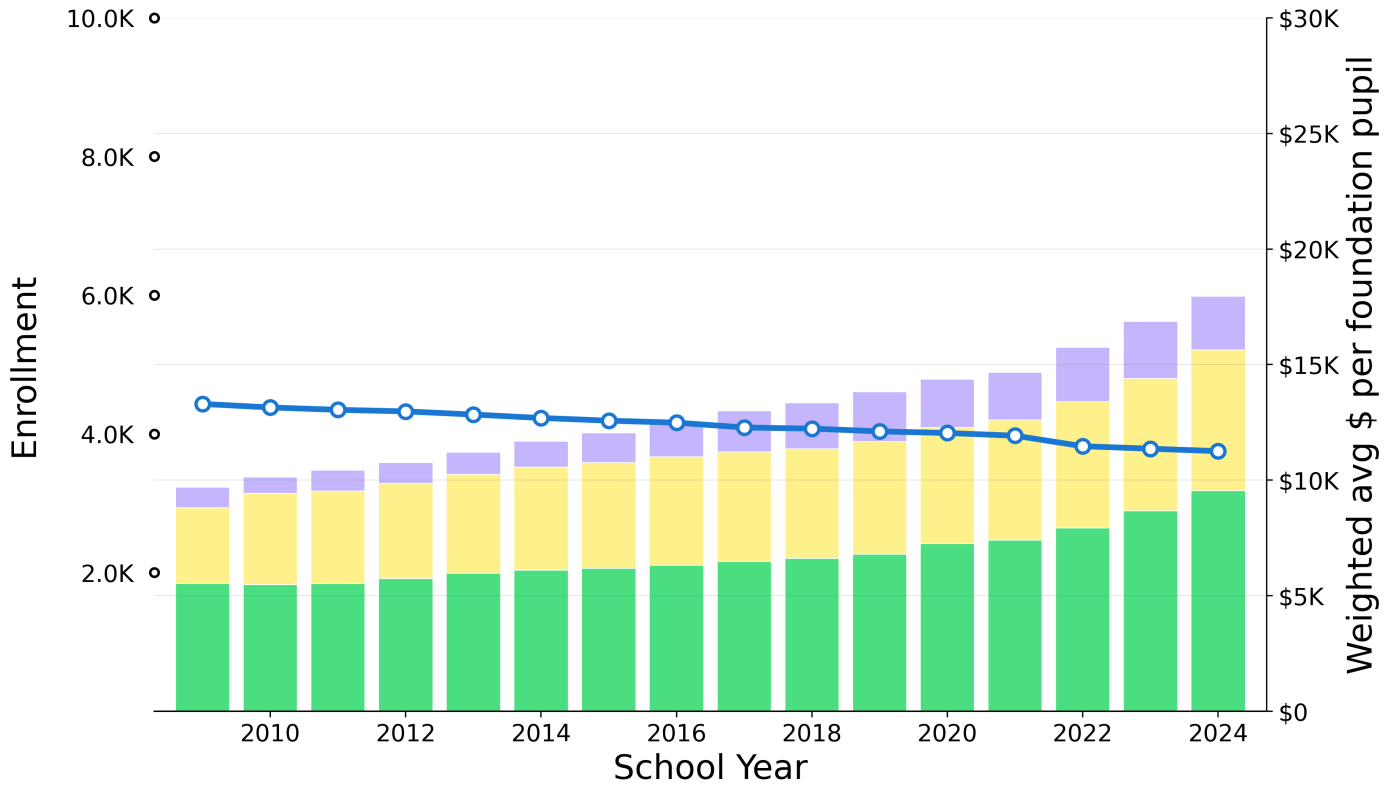


Figure 18

Table 22

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$900	6.54%	7.71%	1.49%	\$2,329
Req NSS (minus Ch70)	\$3,262	4.24%	3.12%	4.54%	\$6,079
Ch70 Aid	\$5,535	3.70%	4.58%	7.05%	\$9,550
Total (Actual NSS)	\$9,697	4.19%	4.39%	5.37%	\$17,957
Shading vs baseline: $ \Delta\$/\text{pupil} \geq 5.0\%$, $ \Delta\text{CAGR} \geq 0.5\text{pp}$				Above Western MA baseline	
CAGR = $(\text{End}/\text{Start})^{(1/\text{years})} - 1$				Below Western MA baseline	

Large (1601-10K FTE) includes 14 members:

Districts (12): Agawam, Belchertown, Chicopee, East Longmeadow, Holyoke, Longmeadow, Ludlow, Northampton, Pittsfield, South Hadley, West Springfield, Westfield.

Regional K-12 (2): Athol-Royalston, Hampden-Wilbraham.

Section 2 — Western MA cohort details

Outliers (Springfield >10K FTE) — PPE and Enrollment — Weighted average per district.

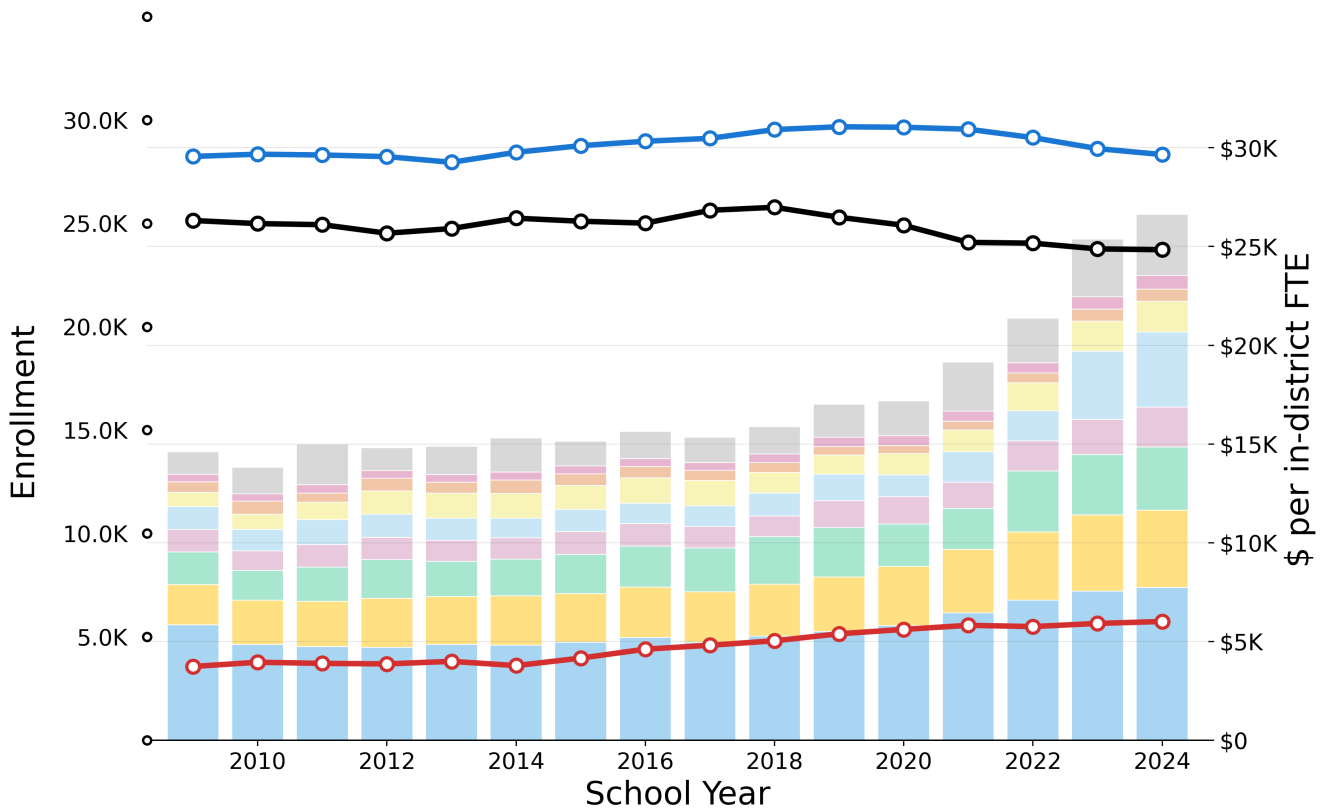


Figure 19

Table 23

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$1,143	+6.8%	+5.9%	+12.9%	\$3,071
Guidance, Counseling and Testing	\$380	+4.1%	+5.6%	+8.2%	\$697
Administration	\$533	+0.9%	-1.1%	+7.9%	\$609
Instructional Leadership	\$719	+5.3%	+2.4%	+9.8%	\$1,571
Operations and Maintenance	\$1,150	+8.3%	+14.3%	+23.3%	\$3,806
Other Teaching Services	\$1,143	+3.8%	+6.4%	+8.2%	\$2,014
Pupil Services	\$1,651	+4.5%	+5.6%	+5.1%	\$3,204
Insurance, Retirement and Other	\$2,050	+4.4%	+4.6%	+7.2%	\$3,906
Teachers	\$5,839	+1.9%	+4.8%	+7.0%	\$7,737
Total	\$14,608	+4.1%	+5.7%	+9.4%	\$26,615

Table 24

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	25,137	-0.4%	-0.6%	-1.3%	23,723
Foundation Enrollment	28,235	+0.0%	-0.0%	-0.9%	28,326
Out-of-District FTE Pupils	3,571	+3.2%	+4.7%	+2.2%	5,745

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta\text{Enrollment}| \geq 5.0\%$, $|\Delta\text{CAGR}| \geq 0.5\text{pp}$

$$\text{CAGR} = (\text{End}/\text{Start})^{(1/\text{years})} - 1$$

Above Western MA baseline

Below Western MA baseline

Section 2 — Western MA cohort details

Outliers (Springfield >10K FTE) — Chapter 70 Aid and Net School Spending (per foundation pupil).

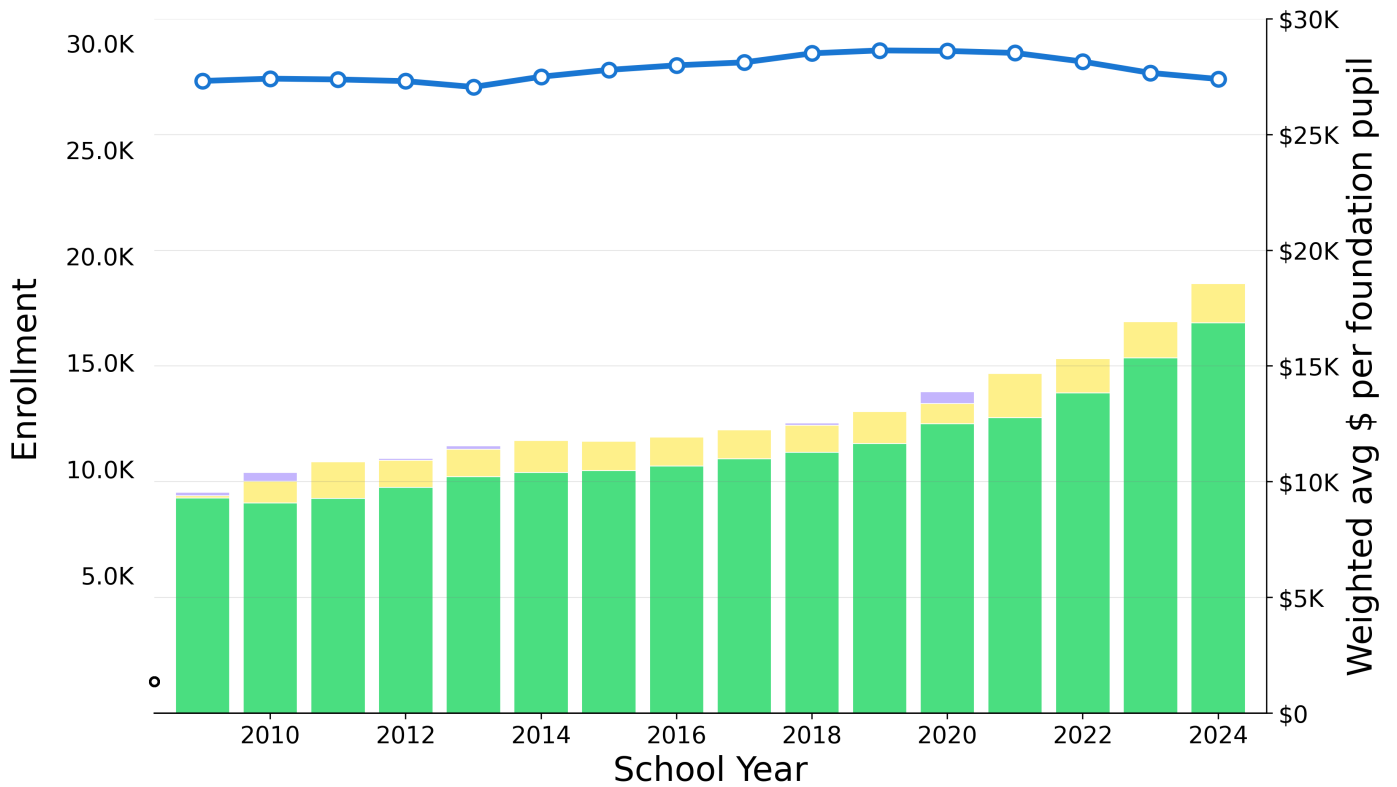


Figure 20

Table 25

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$-150	-59.68%	-49.99%	23.57%	\$-0
Req NSS (minus Ch70)	\$247	13.69%	2.09%	3.98%	\$1,695
Ch70 Aid	\$9,305	4.04%	4.95%	7.69%	\$16,866
Total (Actual NSS)	\$9,403	4.64%	4.65%	7.32%	\$18,561
Shading vs baseline: $ \Delta\$/pupil \geq 5.0\%$, $ \Delta CAGR \geq 0.5pp$				Above Western MA baseline	
CAGR = $(End/Start)^{(1/years)} - 1$				Below Western MA baseline	

Outliers (Springfield >10K FTE) includes 1 members:

Districts (1): Springfield.

Section 2 — Western MA cohort details

Western MA (all, excl. Springfield) — PPE and Enrollment

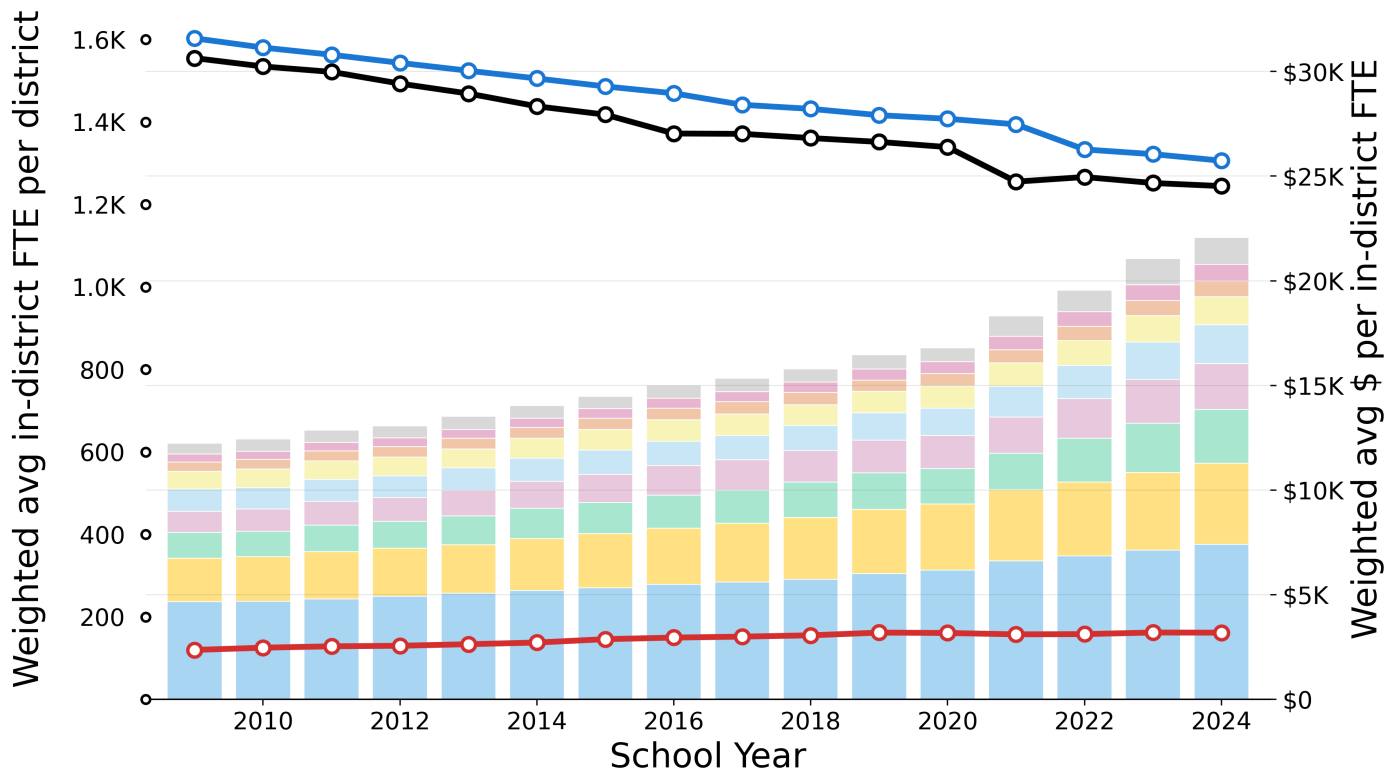


Figure 21

Table 26

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$507	+6.4%	+7.9%	+13.4%	\$1,287
Guidance, Counseling and Testing	\$389	+4.7%	+5.6%	+7.9%	\$780
Administration	\$440	+3.6%	+3.8%	+6.8%	\$754
Instructional Leadership	\$836	+3.3%	+3.6%	+5.6%	\$1,353
Operations and Maintenance	\$1,066	+3.7%	+5.3%	+7.2%	\$1,845
Other Teaching Services	\$1,025	+5.2%	+5.5%	+7.1%	\$2,190
Pupil Services	\$1,224	+5.1%	+5.9%	+7.9%	\$2,566
Insurance, Retirement and Other	\$2,083	+4.2%	+4.5%	+4.9%	\$3,881
Teachers	\$4,664	+3.1%	+3.6%	+4.3%	\$7,409
Total	\$12,234	+4.0%	+4.6%	+6.0%	\$22,065

Table 27

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	1,555	-1.5%	-1.4%	-1.6%	1,245
Foundation Enrollment	1,603	-1.4%	-1.4%	-1.6%	1,306
Out-of-District FTE Pupils	120	+2.0%	+1.6%	-0.0%	162

→ Compare to PPE and Enrollment for [Tiny \(0-200 FTE\) cohort](#) (page 20), [Small \(201-800 FTE\) cohort](#) (page 22), [Medium \(801-1600 FTE\) cohort](#) (page 24), [Large \(1601-10K FTE\) cohort](#) (page 26), [Outliers \(Springfield >10K FTE\) cohort](#) (page 28)

Section 2 — Western MA cohort details

Western MA (all, excl. Springfield) — Chapter 70 Aid and Net School Spending (per foundation pupil)

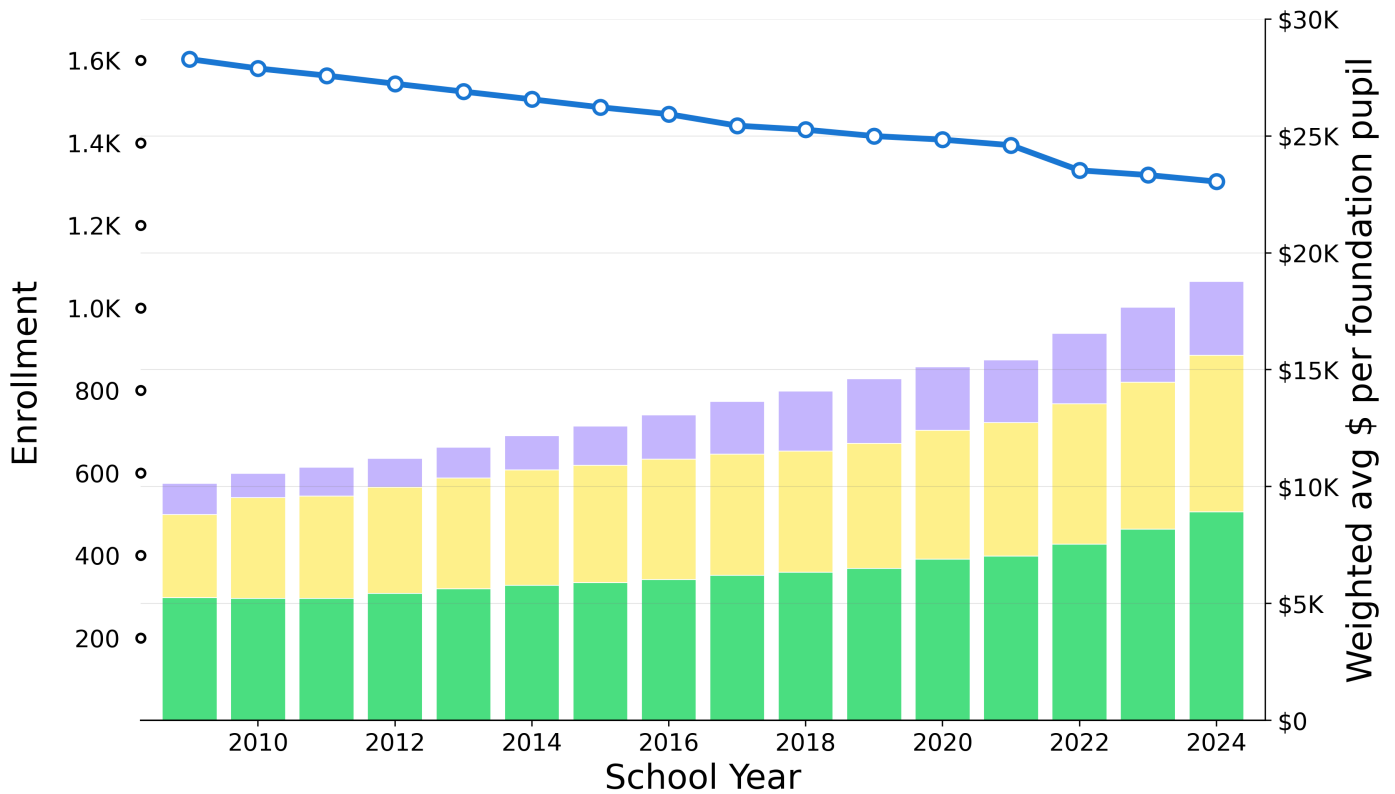


Figure 22

Table 28

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$1,345	5.86%	8.07%	2.63%	\$3,161
Req NSS (minus Ch70)	\$3,547	4.32%	3.09%	4.59%	\$6,692
Ch70 Aid	\$5,253	3.59%	4.43%	6.56%	\$8,919
Total (Actual NSS)	\$10,145	4.19%	4.43%	5.13%	\$18,772

Western MA (all, excl. Springfield) includes 59 members:

Districts (36): Agawam, Amherst, Belchertown, Berkshire Hills, Chicopee, Clarksburg, East Longmeadow, Easthampton, Erving, Florida, Granby, Greenfield, Hadley, Hancock, Hatfield, Holyoke, Lee, Lenox, Leverett, Longmeadow, Ludlow, Monson, North Adams, Northampton, Palmer, Pelham, Pittsfield, Richmond, Rowe, Savoy, Shutesbury, South Hadley, Ware, West Springfield, Westfield, Worthington.

Regional K-12 (20): Athol-Royalston, Central Berkshire, Conway, Deerfield, Farmington River Reg, Gateway, Gill-Montague, Hampden-Wilbraham, Hawlemont, Hoosac Valley Regional, Mohawk Trail, Mount Greylock, New Salem-Wendell, Orange, Petersham, Pioneer Valley, Southern Berkshire, Southwick-Tolland-Granville Regional School District, Sunderland, Whately.

Secondary regions (3): Amherst-Pelham, Frontier, Ralph C Mahar.

Note: The following districts are omitted from this analysis: Chesterfield-Goshen (missing expenditure data), Hampshire (missing expenditure data), Southampton (missing expenditure data), Warwick (no enrollment data), Westhampton (missing expenditure data), Williamsburg (missing expenditure data).

→ Compare to Chapter 70 Aid and Net School Spending for [Tiny \(0-200 FTE\) cohort](#) (page 21), [Small \(201-800 FTE\) cohort](#) (page 23), [Medium \(801-1600 FTE\) cohort](#) (page 25), [Large \(1601-10K FTE\) cohort](#) (page 27), [Outliers \(Springfield >10K FTE\) cohort](#) (page 29)

Section 3 — Selected districts

Section 3 examines five selected districts in depth: Amherst-Pelham Regional, Amherst, Leverett, Pelham, and Shutesbury. For each district, three detailed pages show:

- Total PPE breakdown by **expenditure category** with shaded comparison to cohort baseline
- **Chapter 70 aid** and **Net School Spending** breakdown per pupil with shaded comparison to cohort baseline
- **CAGR over 5, 10, and 15-year periods** with shaded comparison to cohort baseline

These district-level pages enable direct comparison between individual district spending patterns and their respective cohorts. Note that although this section focuses on the five selected districts and Western MA, the same visualizations can be produced for other MA districts and regions.

For detailed methodology, see [Appendix A: Data Sources & Calculation Methodology](#) (https://github.com/timshores/schools/blob/main/ppe_report/output/WMPPE%20Appendices.pdf).

Report Navigation:

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Section 1: Western MA Traditional District Trends	7
Section 2: Western MA Cohort Details	19
Section 3: Selected Districts	32

Section 3 — Specific districts

Amherst-Pelham Regional — PPE and Enrollment

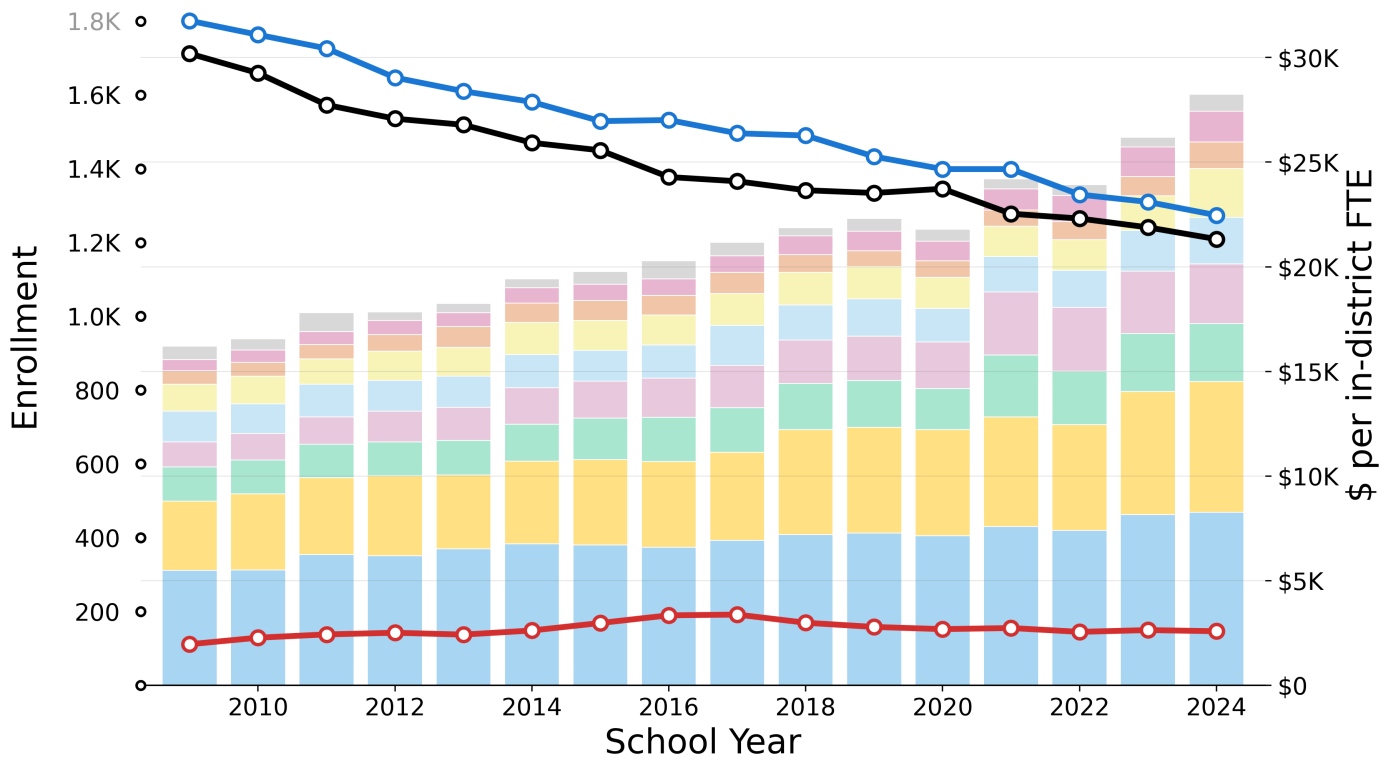


Figure 23

Table 29

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$646	+1.4%	+6.5%	+5.5%	\$799
Guidance, Counseling and Testing	\$525	+7.1%	+7.2%	+9.6%	\$1,465
Administration	\$652	+4.6%	+3.5%	+11.0%	\$1,277
Instructional Leadership	\$1,289	+4.0%	+4.2%	+8.6%	\$2,336
Operations and Maintenance	\$1,459	+2.8%	+3.4%	+4.6%	\$2,221
Other Teaching Services	\$1,199	+5.9%	+5.1%	+6.1%	\$2,851
Pupil Services	\$1,645	+3.5%	+4.6%	+4.3%	\$2,766
Insurance, Retirement and Other	\$3,305	+4.3%	+4.7%	+4.4%	\$6,248
Teachers	\$5,491	+2.8%	+2.0%	+2.6%	\$8,270
Total	\$16,211	+3.8%	+3.8%	+4.8%	\$28,233

Table 30

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	1,712	-2.3%	-1.9%	-1.9%	1,209
Foundation Enrollment	1,801	-2.3%	-2.1%	-2.3%	1,274
Out-of-District FTE Pupils	112	+1.8%	-0.1%	-1.5%	147
Shading vs baseline: $ \Delta\$/pupil \geq 5.0\%$, $ \Delta\text{Enrollment} \geq 5.0\%$, $ \Delta\text{CAGR} \geq 0.5\text{pp}$					Above cohort baseline (Medium (801-1600))
CAGR = $(\text{End}/\text{Start})^{(1/\text{years})} - 1$					Below cohort baseline (Medium (801-1600))

→ Compare to [Tiny \(0-200 FTE\) cohort: PPE and Enrollment \(page 20\)](#)

Section 3 — Selected districts

Amherst-Pelham Regional — Chapter 70 Aid and Net School Spending (per foundation pupil)

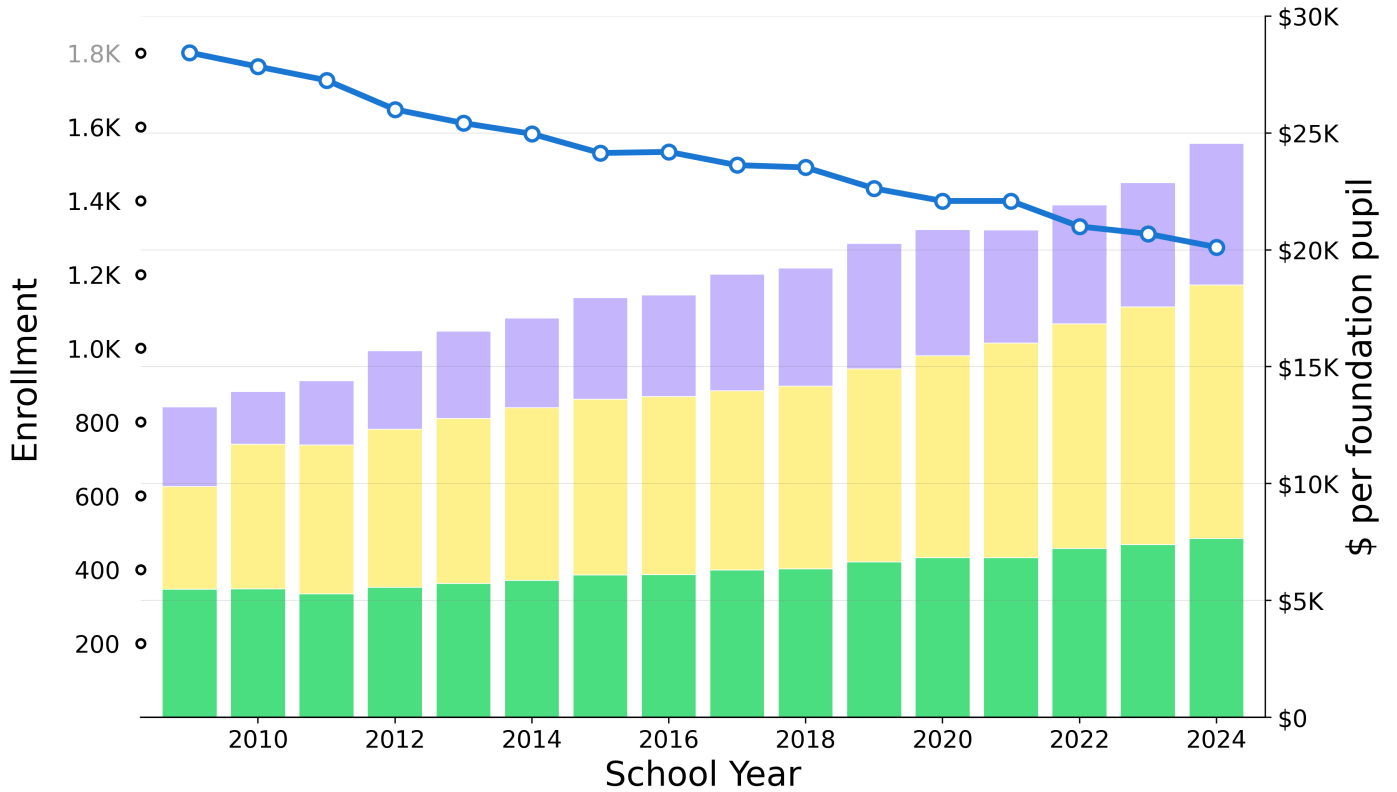


Figure 24

Table 31

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$3,407	3.91%	4.67%	2.46%	\$6,059
Req NSS (minus Ch70)	\$4,383	6.22%	3.91%	5.55%	\$10,835
Ch70 Aid	\$5,488	2.25%	2.70%	2.88%	\$7,658
Total (Actual NSS)	\$13,278	4.18%	3.69%	3.90%	\$24,552

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta CAGR| \geq 0.5pp$

CAGR = $(End/Start)^{(1/years)} - 1$

Above cohort baseline (Medium (801-1600))
Below cohort baseline (Medium (801-1600))

→ Compare to *Tiny (0-200 FTE) cohort: Chapter 70 Aid and Net School Spending* (page 21)

Section 3 — Specific districts

Amherst — PPE and Enrollment

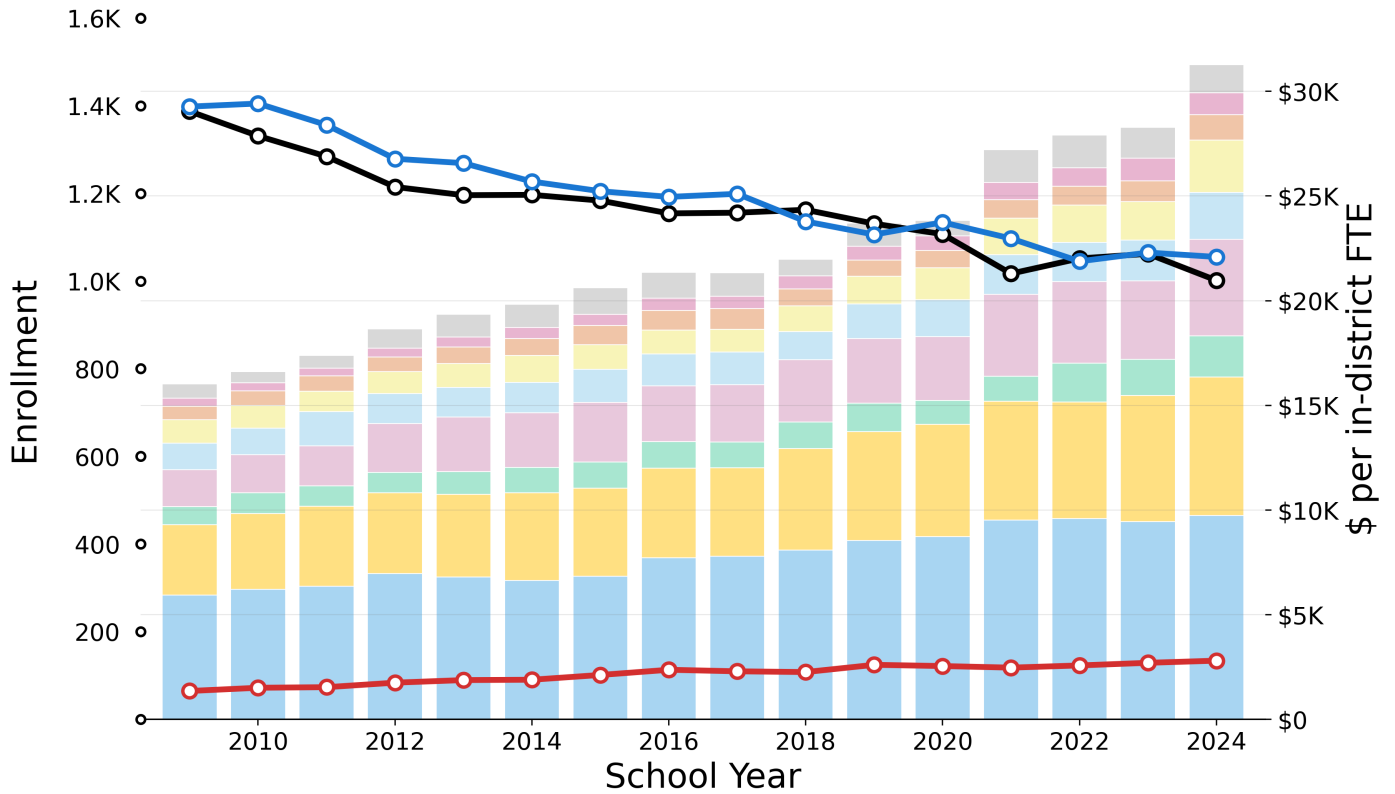


Figure 25

Table 32

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$684	+4.5%	+1.9%	+4.0%	\$1,328
Guidance, Counseling and Testing	\$396	+6.7%	+6.9%	+9.5%	\$1,053
Administration	\$627	+4.5%	+4.1%	+9.6%	\$1,213
Instructional Leadership	\$1,134	+5.4%	+7.0%	+13.5%	\$2,498
Operations and Maintenance	\$1,264	+3.9%	+4.5%	+6.4%	\$2,248
Other Teaching Services	\$1,762	+6.6%	+5.9%	+8.4%	\$4,612
Pupil Services	\$865	+5.6%	+4.9%	+7.6%	\$1,965
Insurance, Retirement and Other	\$3,353	+4.6%	+4.7%	+4.9%	\$6,605
Teachers	\$5,944	+3.4%	+3.9%	+2.7%	\$9,745
Total	\$16,029	+4.6%	+4.7%	+5.7%	\$31,267

Table 33

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	1,387	-2.1%	-1.8%	-2.4%	1,002
Foundation Enrollment	1,398	-1.9%	-1.5%	-0.9%	1,055
Out-of-District FTE Pupils	65	+5.0%	+4.0%	+1.5%	134

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta\text{Enrollment}| \geq 5.0\%$, $|\Delta\text{CAGR}| \geq 0.5\text{pp}$

CAGR = $(\text{End}/\text{Start})^{1/\text{years}} - 1$

Above cohort baseline (Medium (801-1600))

Below cohort baseline (Medium (801-1600))

→ Compare to *Medium (801-1600 FTE) cohort: PPE and Enrollment* (page 24)

Section 3 — Selected districts

Amherst — Chapter 70 Aid and Net School Spending (per foundation pupil)

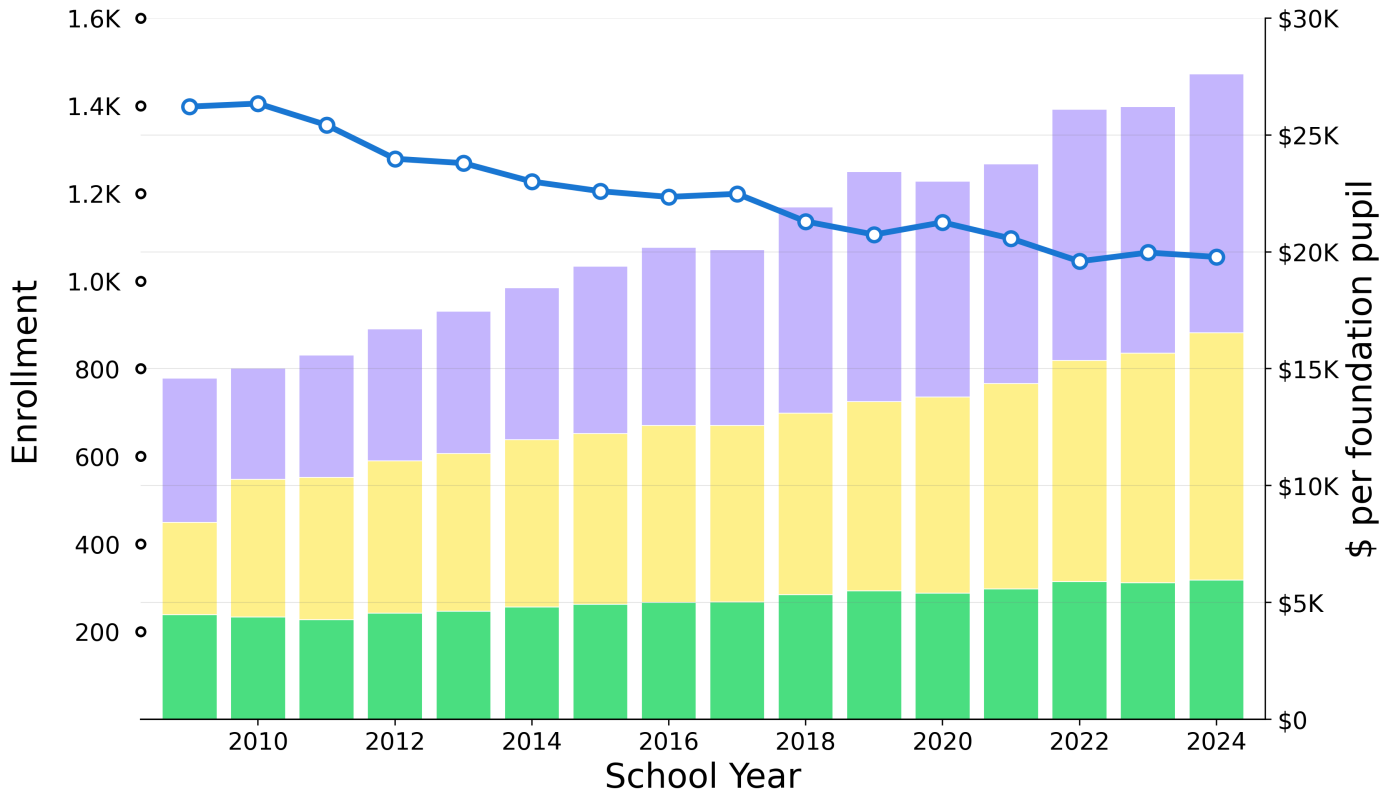


Figure 26

Table 34

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$6,169	3.98%	5.48%	2.41%	\$11,078
Req NSS (minus Ch70)	\$3,946	6.80%	3.99%	5.53%	\$10,586
Ch70 Aid	\$4,483	1.91%	2.17%	1.58%	\$5,953
Total (Actual NSS)	\$14,598	4.34%	4.11%	3.35%	\$27,617
Shading vs baseline: $ \Delta\$/pupil \geq 5.0\%$, $ \Delta CAGR \geq 0.5pp$				Above cohort baseline (Medium (801-1600))	
CAGR = $(End/Start)^{(1/years)} - 1$				Below cohort baseline (Medium (801-1600))	

→ Compare to *Medium (801-1600 FTE) cohort: Chapter 70 Aid and Net School Spending (page 25)*

Section 3 — Specific districts

Leverett — PPE and Enrollment

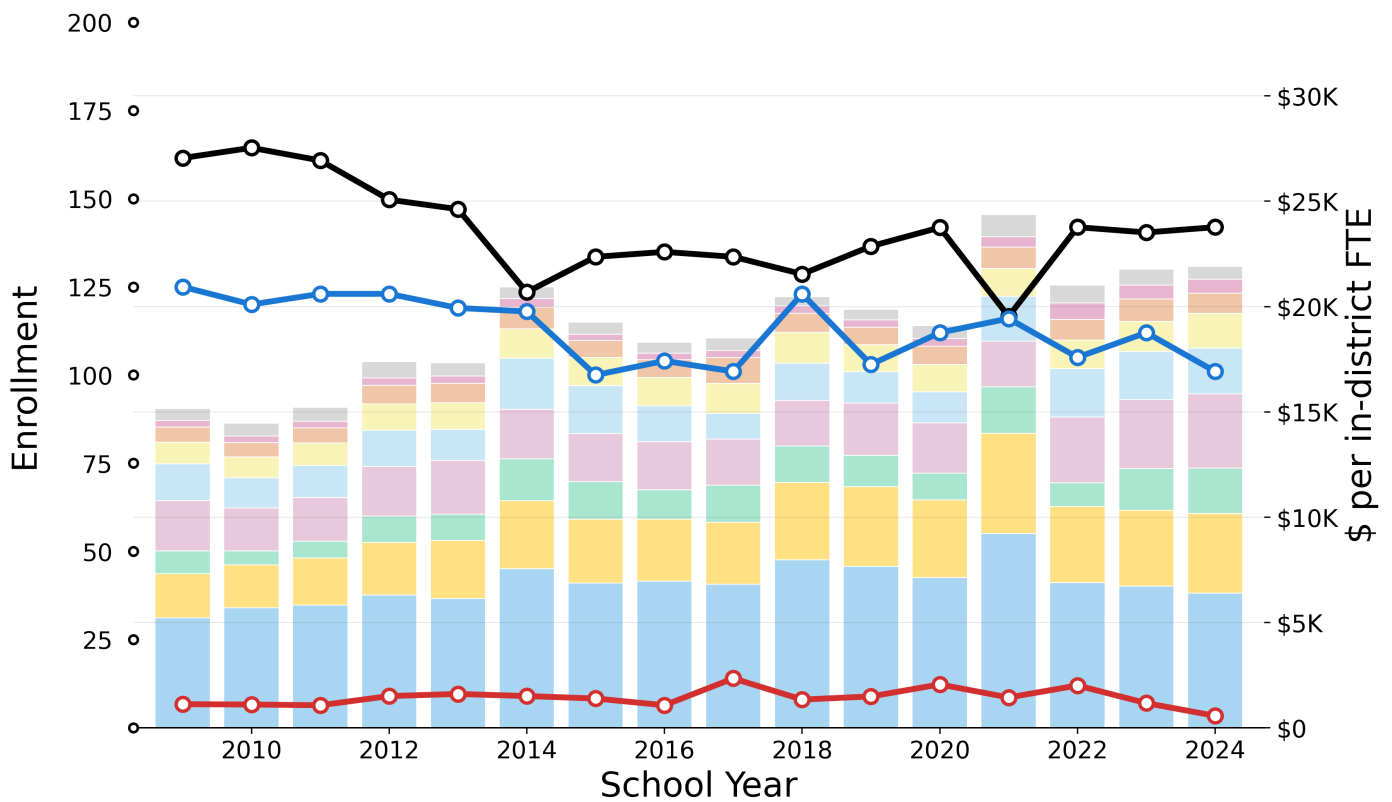


Figure 27

Table 35

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$575	+0.4%	+0.9%	+3.9%	\$608
Guidance, Counseling and Testing	\$310	+5.2%	+4.9%	+13.7%	\$666
Administration	\$715	+1.9%	-0.8%	+2.9%	\$953
Instructional Leadership	\$1,015	+3.3%	+1.8%	+5.4%	\$1,663
Operations and Maintenance	\$1,755	+1.4%	-1.1%	+7.7%	\$2,158
Other Teaching Services	\$2,385	+2.6%	+4.1%	+7.3%	\$3,526
Pupil Services	\$1,085	+4.7%	+0.8%	+7.5%	\$2,148
Insurance, Retirement and Other	\$2,098	+4.0%	+1.6%	+0.1%	\$3,793
Teachers	\$5,218	+1.4%	-1.6%	-3.6%	\$6,395
Total	\$15,156	+2.5%	+0.5%	+2.0%	\$21,910

Table 36

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	162	-0.9%	+1.4%	+0.8%	142
Foundation Enrollment	125	-1.4%	-1.5%	-0.4%	101
Out-of-District FTE Pupils	7	-4.4%	-9.3%	-17.5%	3

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta\text{Enrollment}| \geq 5.0\%$, $|\Delta\text{CAGR}| \geq 0.5\text{pp}$

CAGR = $(\text{End}/\text{Start})^{(1/\text{years})} - 1$

→ Compare to *Tiny (0-200 FTE) cohort: PPE and Enrollment* (page 20)

Section 3 — Selected districts

Leverett — Chapter 70 Aid and Net School Spending (per foundation pupil)

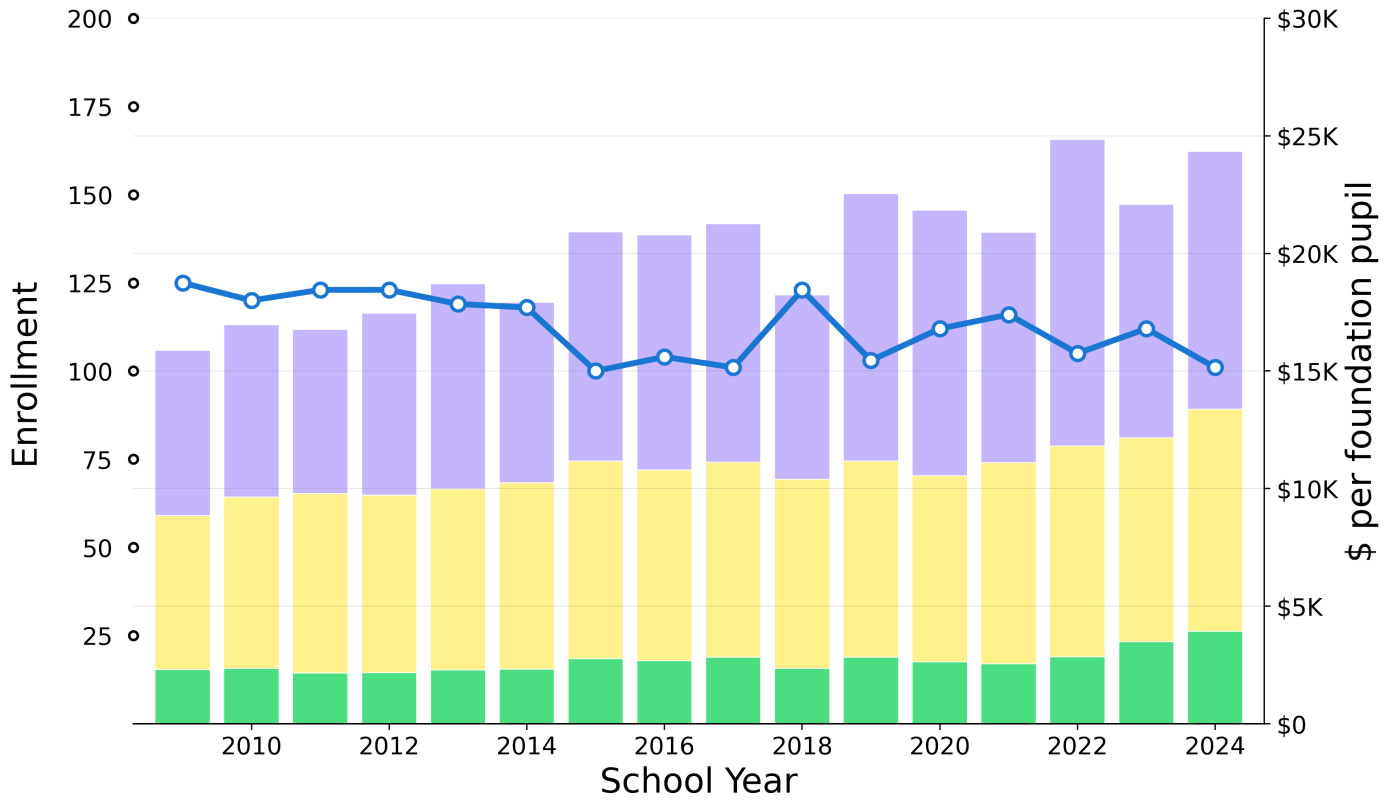


Figure 28

Table 37

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$7,014	3.02%	3.63%	-0.74%	\$10,957
Req NSS (minus Ch70)	\$6,555	2.47%	1.78%	2.55%	\$9,453
Ch70 Aid	\$2,303	3.63%	5.38%	6.74%	\$3,930
Total (Actual NSS)	\$15,872	2.89%	3.11%	1.55%	\$24,341

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta CAGR| \geq 0.5pp$

Above cohort baseline (Tiny (0-200))

Below cohort baseline (Tiny (0-200))

$CAGR = (End/Start)^{(1/years)} - 1$

→ Compare to *Tiny (0-200 FTE) cohort: Chapter 70 Aid and Net School Spending (page 21)*

Section 3 — Specific districts

Pelham — PPE and Enrollment

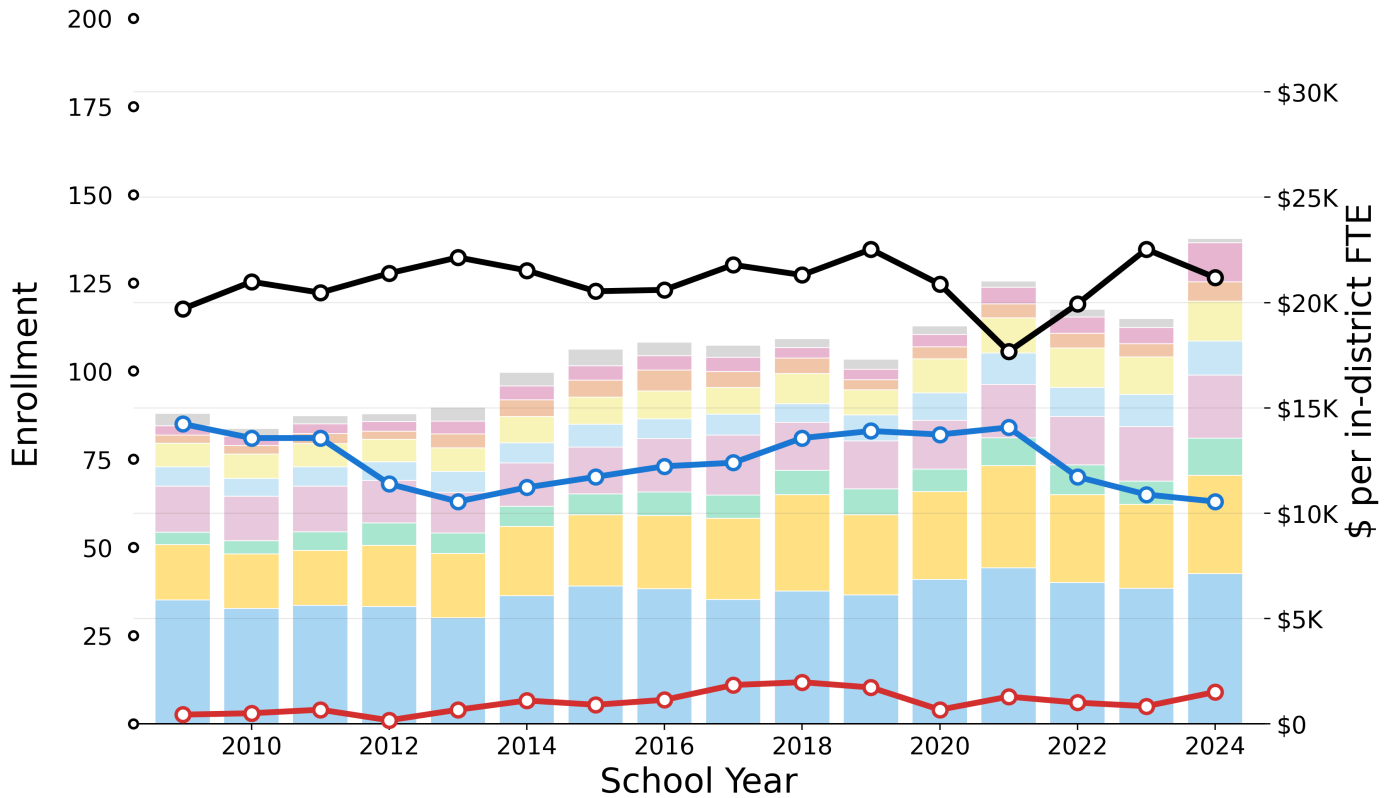


Figure 29

Table 38

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$580	-6.6%	-10.7%	-15.0%	\$207
Guidance, Counseling and Testing	\$438	+10.1%	+10.8%	+30.0%	\$1,855
Administration	\$390	+5.9%	+1.4%	+13.4%	\$917
Instructional Leadership	\$1,123	+3.5%	+4.2%	+9.6%	\$1,885
Operations and Maintenance	\$920	+3.8%	+5.5%	+5.6%	\$1,614
Other Teaching Services	\$2,184	+2.2%	+3.9%	+5.8%	\$3,010
Pupil Services	\$594	+7.5%	+6.3%	+7.3%	\$1,755
Insurance, Retirement and Other	\$2,615	+3.9%	+3.6%	+4.3%	\$4,670
Teachers	\$5,889	+1.3%	+1.6%	+3.1%	\$7,127
Total	\$14,733	+3.0%	+3.3%	+5.9%	\$23,040

Table 39

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	118	+0.5%	-0.2%	-1.2%	126
Foundation Enrollment	85	-2.0%	-0.6%	-5.4%	63
Out-of-District FTE Pupils	3	+8.6%	+3.2%	-2.7%	9

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta\text{Enrollment}| \geq 5.0\%$, $|\Delta\text{CAGR}| \geq 0.5\text{pp}$

$$\text{CAGR} = (\text{End}/\text{Start})^{(1/\text{years})} - 1$$

Above cohort baseline (Tiny (0-200))

Below cohort baseline (Tiny (0-200))

→ Compare to *Tiny (0-200 FTE) cohort: PPE and Enrollment* (page 20)

Section 3 — Selected districts

Pelham — Chapter 70 Aid and Net School Spending (per foundation pupil)

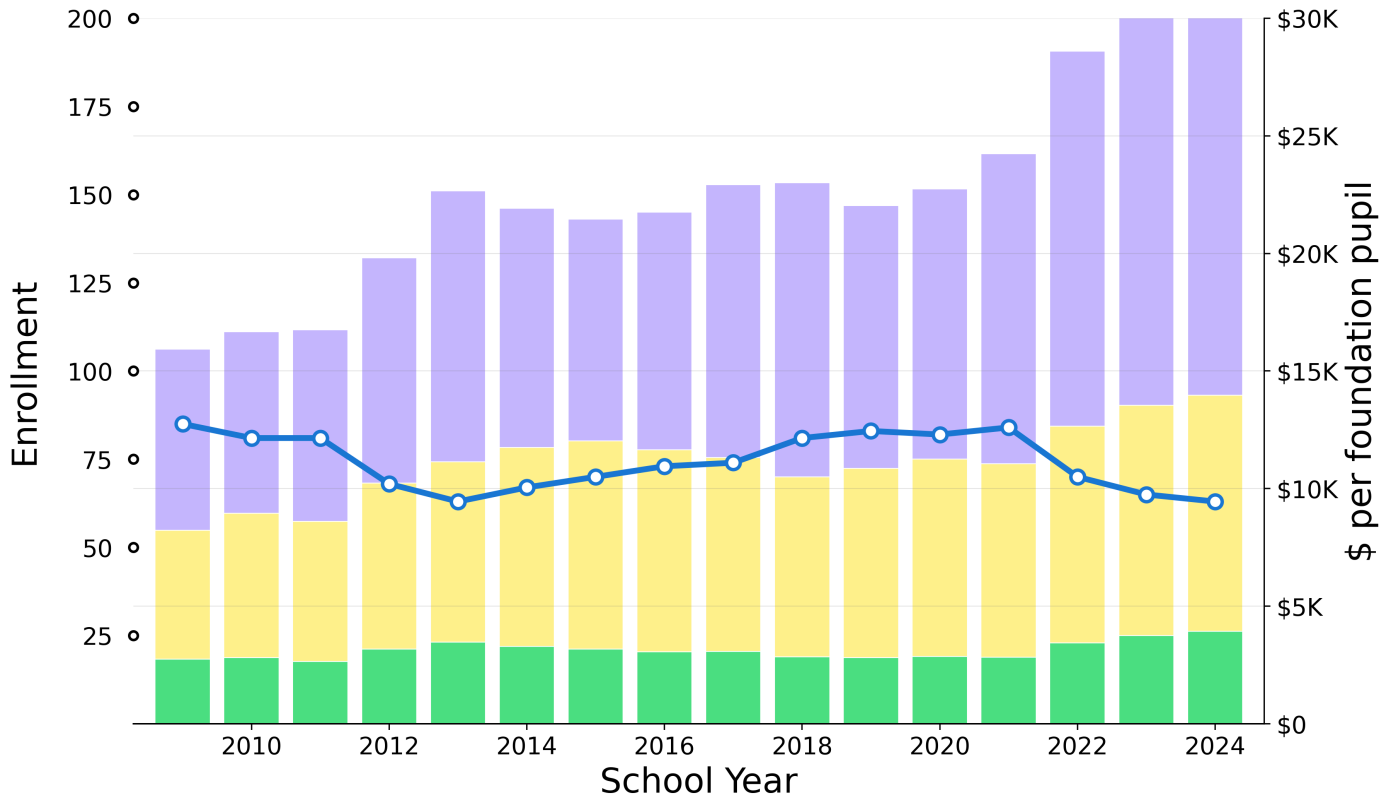


Figure 30

Table 40

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$7,694	6.66%	7.13%	12.64%	\$20,252
Req NSS (minus Ch70)	\$5,483	4.11%	1.72%	4.49%	\$10,031
Ch70 Aid	\$2,743	2.44%	1.82%	7.01%	\$3,941
Total (Actual NSS)	\$15,920	5.23%	4.56%	9.21%	\$34,224
Shading vs baseline: $ \Delta\$/pupil \geq 5.0\%$, $ \Delta CAGR \geq 0.5pp$				Above cohort baseline (Tiny (0-200))	
CAGR = $(End/Start)^{(1/years)} - 1$				Below cohort baseline (Tiny (0-200))	

→ Compare to *Tiny (0-200 FTE) cohort: Chapter 70 Aid and Net School Spending (page 21)*

Section 3 — Specific districts

Shutesbury — PPE and Enrollment

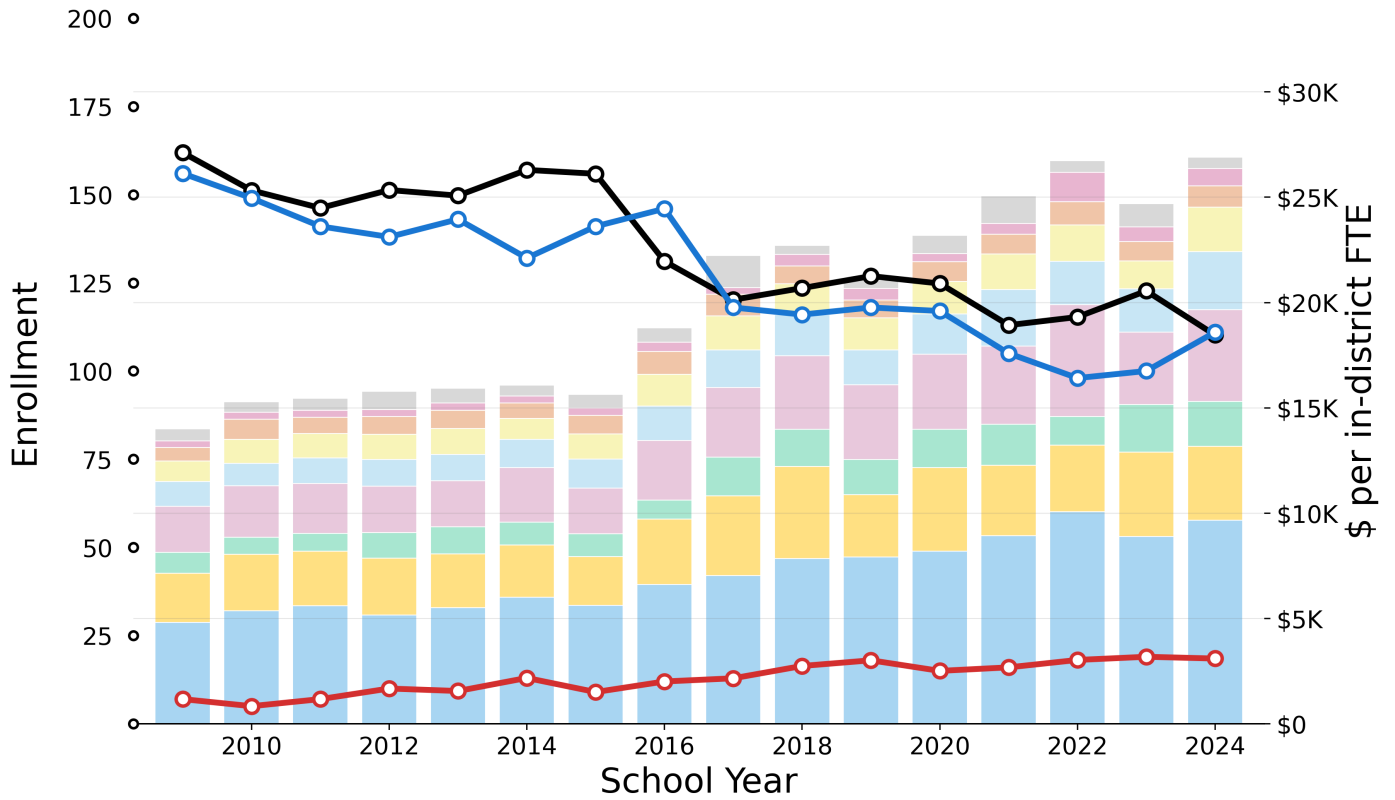


Figure 31

Table 41

Category	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Other	\$580	-0.4%	+0.6%	+7.2%	\$545
Guidance, Counseling and Testing	\$302	+6.9%	+9.2%	+8.8%	\$826
Administration	\$652	+3.0%	+3.4%	+3.5%	\$1,015
Instructional Leadership	\$969	+5.3%	+7.7%	+6.8%	\$2,103
Operations and Maintenance	\$1,180	+5.8%	+7.5%	+10.6%	\$2,754
Other Teaching Services	\$2,185	+4.7%	+5.3%	+4.2%	\$4,359
Pupil Services	\$990	+5.3%	+7.1%	+5.1%	\$2,136
Insurance, Retirement and Other	\$2,332	+2.7%	+3.5%	+3.3%	\$3,501
Teachers	\$4,821	+4.7%	+4.9%	+4.1%	\$9,669
Total	\$14,011	+4.4%	+5.3%	+5.0%	\$26,908

Table 42

In-district FTE	2009	CAGR 15y	CAGR 10y	CAGR 5y	2024
In-District FTE Pupils	162	-2.5%	-3.5%	-2.8%	110
Foundation Enrollment	156	-2.2%	-1.7%	-1.2%	111
Out-of-District FTE Pupils	7	+6.7%	+3.6%	+0.5%	18

Shading vs baseline: $|\Delta\$/pupil| \geq 5.0\%$, $|\Delta\text{Enrollment}| \geq 5.0\%$, $|\Delta\text{CAGR}| \geq 0.5\text{pp}$

$$\text{CAGR} = (\text{End}/\text{Start})^{(1/\text{years})} - 1$$

Above cohort baseline (Tiny (0-200))

Below cohort baseline (Tiny (0-200))

→ Compare to *Tiny (0-200 FTE) cohort: PPE and Enrollment* (page 20)

Section 3 — Selected districts

Shutesbury — Chapter 70 Aid and Net School Spending (per foundation pupil)

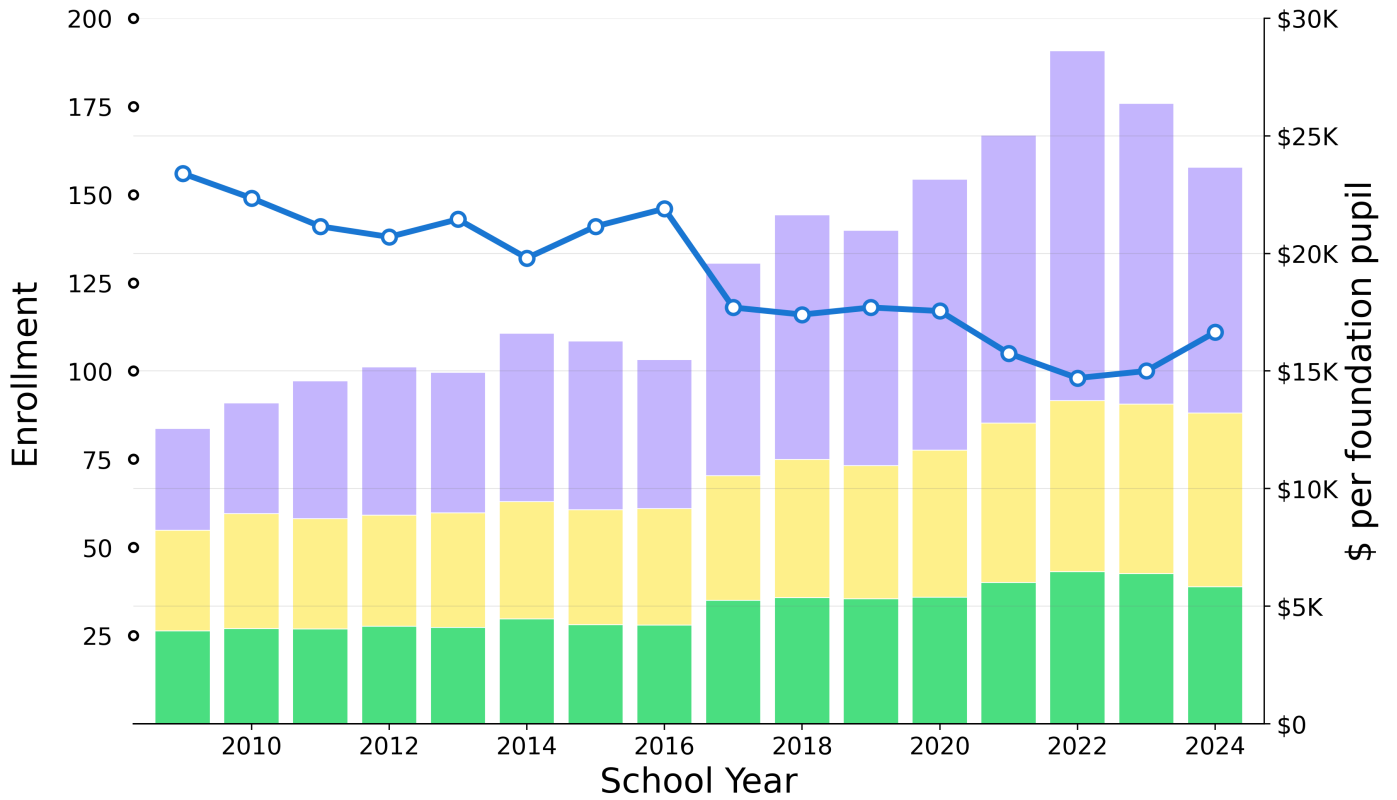


Figure 32

Table 43

Component	2009 \$/pupil	CAGR 15y	CAGR 10y	CAGR 5y	2024 \$/pupil
Actual NSS (minus Req NSS)	\$4,331	6.05%	3.85%	0.88%	\$10,450
Req NSS (minus Ch70)	\$4,280	3.71%	4.02%	5.44%	\$7,391
Ch70 Aid	\$3,952	2.61%	2.70%	1.84%	\$5,820
Total (Actual NSS)	\$12,562	4.31%	3.61%	2.43%	\$23,661
Shading vs baseline: $ \Delta\$/pupil \geq 5.0\%$, $ \Delta CAGR \geq 0.5pp$				Above cohort baseline (Tiny (0-200))	
CAGR = $(End/Start)^{(1/years)} - 1$				Below cohort baseline (Tiny (0-200))	

→ Compare to *Tiny (0-200 FTE) cohort: Chapter 70 Aid and Net School Spending (page 21)*