
**THE COST OF LOCAL CONTROL:
SCHOOL CAPITAL INVESTMENT AND THE NEED FOR REGIONAL APPROACHES**

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I. EXECUTIVE SUMMARY

- **Maine invested \$790 million for school construction and renovation between 1995 and 2005, adding five million square feet of space to schools across the state. At the same time, student enrollment dropped by 13,000.**
- **Taking a regional approach to capital investment rather than a local approach could have saved \$201 million of this investment, 25 percent of the total.** A regional approach would use the classroom capacity of all schools in each region, keeping them fully utilized as the student population falls.
- **A regional approach also could remove much of the need for 62 pending capital projects, saving as much as \$870 million.** Student enrollment is expected to drop by an additional 11,000 pupils over the next 10 years.
- **Sprawl—families and students leaving urban areas and moving to suburban areas—accounts for 25 percent of the state’s capital investment, and is driving many rapidly growing communities to invest in “local only” capital projects.**

II. INTRODUCTION

Local control is the predominant characteristic of Maine government. The positive features of local control include greater input from citizens and more direct control of local government. On the other hand, local control de-emphasizes economies of scale and, by definition, complicates top-down change. It also has implications for the state budget. Since 1970, financial contributions from the state government to local governments have grown steadily. The state is now the majority funder of both school operating costs and school capital investment. It is in the state's interest to look for economies of scale and to exert greater control on how its money is spent, but the state-local relationship has proven particularly resistant to renegotiation. Local governments firmly assert the value of local control. Meeting resistance, the state government is reluctant to force top-down changes in governance.

To assert the value of something implies an understanding of both its costs and benefits, but there has been very little attempt to quantify the costs and benefits of local control.

This report looks at one significant cost of local control—the cost of building and renovating schools district-by-district rather than regionally. Some of these costs are obvious: the cost of construction, the cost of new school sites, the operational costs of having more, rather than fewer, schools. Some costs are less obvious—the inefficient allocation of limited resources, the way that new schools induce families to move out of cities and into suburbs, the surplus space left behind in shrinking school districts, and the failure to consider whether small schools can maintain sufficient educational quality.

These issues are particularly important as Maine's student population continues to fall. There are 13,000 fewer students in Maine schools than there were 10 years ago, a 6 percent decrease. Eighty-five percent of Maine's school districts lost students during this period. This trend will continue until at least 2015, by which time the number of students will have fallen by 24,000 or 12%.

The number of students in the average Maine school district, school building, and classroom is among the lowest in the nation. As enrollment has fallen, there has been much political debate about regionalization or consolidation. In fact, though, the number of school districts has increased as towns secede from school districts or municipalities as a result of disparate property taxation.

Schools are built or renovated for two reasons: (1) the space available is inadequate to handle the enrollment; or (2) the building becomes obsolete as its systems age. The last review of statewide school capital needs was done in 1998. At that time, "health, safety, and compliance . . . [maintenance] repairs and improvements" accounted for 17.5 percent of the total capital need.¹ The remainder (82.5 percent of the \$637 million total) was for "new construction, additions, and

¹ The staff in the Maine Department of Education's Office of School Facilities believes that the 17.5 percent estimate understates the health and safety issues in many school buildings. The 1998 survey, typically, was completed by school principals, and not by experts such as architects, engineers, or code-enforcement officials. The need for an expert assessment of school buildings across the state will be revisited in the recommendation section of this paper.

renovations.” In response to this analysis, the school capital-construction process was re-designed and new capital money committed.² Since 1995, the state has invested \$790 million in school capital projects to build 5.25 million square feet of space.

Student enrollment patterns show two different trends. The most common is a decrease, which reflects national demographic trends such as falling birth rates and rising median ages. The other trend is caused by population dispersal—migration to suburban areas that pushes up student enrollment in some districts, leaving adjacent districts with fewer students. Population dispersal is seen around all six of Maine’s largest cities.

This report looks at both trends. First, it will quantify the cost of making capital-investment decisions locally rather than regionally in a period of shrinking enrollment. Second, it will quantify the cost of sprawl. The regional approach uses the state’s 31 Labor Market Areas (LMAs). LMAs are drawn by Maine’s Department of Labor to show, in part, the regional area where one can live, work, and change jobs without having to move to another area. LMAs offer a more intuitive approach to the notion of “region” than counties or other catchment areas.

² *The Governor’s School Facilities Commission: A Report Submitted to Gov. Angus S. King* (The Joint Standing Committee on Education and Cultural Affairs, and the Joint Standing Committee on Appropriations and Financial Affairs, James E. Rier, Jr., Chair, 1998).

III. BACKGROUND

How Maine Schools Are Organized

As a New England state, Maine has a long tradition of local control. This tradition includes town-meeting governance, elementary schools in most towns, and property-tax rates set and collected at the local level. There are four types of “School Administrative Units” (SAUs) in Maine, with all but one retaining legislative and budgetary control at the municipal level. School Administrative Districts (SADs) operate as a single unit with a Board of Directors, typically operating several schools across all 13 grades. An SAD adopts its own budget without direct municipal input. Community School Districts (CSDs) typically are formed to operate a single multi-town school—often a high school—under the direction of a single school committee. Large municipalities usually operate as single units, with an elected school committee, and legislative authority held by town meeting or by a town council. Small municipalities often belong to School Unions, where the town has its own school committee and school, but shares the services of a superintendent and district administration with neighboring towns. Table 1 shows the number of towns, school administrative units, and schools by LMA.

	Table 1	Towns % of Total	SAU	Of Total	Schools	Of Total	
01	Augusta	24	4.82%	20	7.55%	44	6.02%
02	Bangor	44	8.84%	27	10.19%	75	10.26%
03	Belfast	19	3.82%	4	1.51%	23	3.15%
04	Boothbay	4	0.80%	3	1.13%	4	0.55%
05	Bridgton-Paris	9	1.81%	2	0.75%	13	1.78%
06	Brunswick	16	3.21%	11	4.15%	31	4.24%
07	Calais	21	4.22%	13	4.91%	18	2.46%
08	Camden	9	1.81%	7	2.64%	10	1.37%
09	Conway NH	6	1.20%	2	0.75%	7	0.96%
10	Dover-Foxcroft	20	4.02%	8	3.02%	22	3.01%
11	Ellsworth	37	7.43%	31	11.70%	42	5.75%
12	Farmington	26	5.22%	7	2.64%	24	3.28%
13	Houlton	28	5.62%	7	2.64%	15	2.05%
14	Lewiston-Auburn	16	3.21%	14	5.28%	46	6.29%
15	Lincoln	11	2.21%	3	1.13%	7	0.96%
16	Machias	23	4.62%	10	3.77%	19	2.60%
17	Madawaska	4	0.80%	4	1.51%	7	0.96%
18	Millinocket	7	1.41%	4	1.51%	7	0.96%
19	Pittsfield	11	2.21%	6	2.26%	15	2.05%
20	Portland Metro	41	8.23%	27	10.19%	136	18.60%
21	Portsmouth NH	2	0.40%	2	0.75%	5	0.68%
22	Presque Isle	39	7.83%	16	6.04%	37	5.06%
23	Rochester NH	3	0.60%	2	0.75%	10	1.37%
24	Rockland	7	1.41%	5	1.89%	15	2.05%
25	Rumford	18	3.61%	4	1.51%	15	2.05%
26	Saint George	4	0.80%	3	1.13%	3	0.41%
27	Sanford	4	0.80%	3	1.13%	11	1.50%
28	Skowhegan	23	4.62%	5	1.89%	29	3.97%
29	Waldoboro	11	2.21%	8	3.02%	11	1.50%
30	Waterville	7	1.41%	4	1.51%	20	2.74%
31	York	4	0.80%	3	1.13%	10	1.37%
	TOTAL	498		265		731	

Table 2 shows school sizes, by quartiles, based on 2005 enrollment data.³

Table 2	Elementary Schools	Middle Schools	High Schools
1 st Quartile	7-105	90-261	80-234
2 nd Quartile	106-193	262-357	235-418
3 rd Quartile	194-293	358-557	419-745
4 th Quartile	294-852	558-964	746-1467

Over the last 10 years, elementary school sizes in each quartile have fallen by 10 percent. Conversely, high schools in the third quartile grew by 13 percent and, in the highest quartile, by 10 percent over the same period. These changes illustrate a topic that we will return to later—that the tail-end of the student population has left the elementary grades and is headed toward graduation. Students are not being replaced in the lower grades, because Maine’s population is aging and the birth rate has fallen.

A 2005 study of the costs of small schools versus large schools noted that the national median for “small elementary schools” was about 325 students, for “small middle schools” was 400, and for “small high schools” was 325.⁴

Student Enrollment Trends

Table 3 shows the K-12 student enrollment in 1995 and 2005, the percentage of all students in each LMA, and the change over the period. A description of the sources and types of enrollment data can be found in the methodology section at the end of this paper.

Note that 27 of the LMAs experienced a decrease in enrollment. Of the four LMAs that had enrollment increases, only one—Portland Metro—includes an urban area.

³ “Smallest School” refers to schools on the mainland, not in the unorganized territory, and in a conventional grade configuration (i.e., elementary, middle school, high school). The smallest elementary school is a K-5 school in Shirley. The smallest middle school is the 6-8 middle school in Lee. The smallest high school is the 7-12 Easton Junior-Senior High School. The largest elementary school is the K-6 Montello School in Lewiston. The largest middle school is the 6-8 Bonny Eagle Middle School in SAD 6. The largest high school is Bangor High School.

⁴ An Analysis of Construction of Small Schools vs. Larger Schools (Office of School Facilities Services, Maine Department of Education, 2005), pp 15-17.

Table 3	95 Enrollment	Of Total	05 Enrollment	Of Total	10 Yr Change	10 Yr %
Augusta	14,313	6.59%	12,776	6.28%	-1,537	-10.74%
Bangor	20,486	9.44%	18,727	9.21%	-1,759	-8.59%
Belfast	4,646	2.14%	4,325	2.13%	-321	-6.91%
Boothbay	935	0.43%	877	0.43%	-58	-6.20%
Bridgton-Paris	4,187	1.93%	3,909	1.92%	-278	-6.64%
Brunswick	11,786	5.43%	10,996	5.41%	-790	-6.70%
Calais	2,860	1.32%	2,197	1.08%	-663	-23.18%
Camden	1,829	0.84%	1,582	0.78%	-247	-13.50%
Conway NH	1,406	0.65%	1,622	0.80%	216	15.36%
Dover-Foxcroft	5,149	2.37%	4,064	2.00%	-1,085	-21.07%
Ellsworth	9,160	4.22%	7,531	3.70%	-1,629	-17.78%
Farmington	6,493	2.99%	5,320	2.62%	-1,173	-18.07%
Houlton	3,947	1.82%	2,890	1.42%	-1,057	-26.78%
Lewiston-Auburn	16,789	7.73%	16,043	7.89%	-746	-4.44%
Lincoln	1,792	0.83%	1,663	0.82%	-129	-7.20%
Machias	3,283	1.51%	2,426	1.19%	-857	-26.10%
Madawaska	1,980	0.91%	1,655	0.81%	-325	-16.41%
Millinocket	1,953	0.90%	1,391	0.68%	-562	-28.78%
Pittsfield	2,465	1.14%	2,157	1.06%	-308	-12.49%
Portland Metro	51,815	23.87%	54,814	26.95%	2,999	5.79%
Portsmouth NH	1,926	0.89%	1,422	0.70%	-504	-26.17%
Presque Isle	9,250	4.26%	7,750	3.81%	-1,500	-16.22%
Rochester NH	4,611	2.12%	4,039	1.99%	-572	-12.41%
Rockland	3,186	1.47%	3,721	1.83%	535	16.79%
Rumford	3,863	1.78%	3,716	1.83%	-147	-3.81%
Saint George	314	0.14%	235	0.12%	-79	-25.16%
Sanford	4,426	2.04%	4,237	2.08%	-189	-4.27%
Skowhegan	5,735	2.64%	5,197	2.55%	-538	-9.38%
Waldoboro	3,236	1.49%	3,124	1.54%	-112	-3.46%
Waterville	8,679	4.00%	7,968	3.92%	-711	-8.19%
York	4,563	2.10%	5,037	2.48%	474	10.39%
TOTAL	217,063		203,411		-13,652	-6.29%

The Capital Investment Process

Building or renovating schools in Maine is a state-local partnership. Maine has two funding mechanisms for capital projects: the Major Capital Program and the Revolving Renovation Fund. The latter is a low-interest borrowing mechanism for school districts to correct health and safety problems or replace building systems such as boilers and roofs. The Major Capital Program is much larger in scope; it is directed by the State Board of Education, administered by the Department of Education, regulated, in part, by the Bureau of General Services, and funded by legislative authorization for bonding.

The Major Capital Program is state-funded, but locally controlled. At the beginning of each two-year cycle, local school districts submit an application. A team from the Department of Education visits each district and rates each application. The scores are tallied and ranked. The 2004-2005 cycle received 66 applications. The number of SAUs that did not submit an application, despite need, is unknown. There was money available to fund 22 of projects. Once approved, each local district forms a building committee, hires an architect, and designs its school, using guidelines adopted by the state. The 20-year construction bond is paid off using the formula for state aid to schools, which is based on each community's "ability to pay."

As student enrollment has declined, attempts have been made to use capital investment to encourage both inter- and intra-district consolidation. The Commissioner and the State Board have encouraged the consolidation of small schools across a district into a larger school (e.g., Old Town consolidated four elementary schools into one). On the other hand, despite the lure of new state-funded schools, no two school districts have opted to consolidate during the 10-year period analyzed in this report; for example, during this time, Millinocket/East Millinocket, Howland/Lincoln have been encouraged to consider such mergers.

A comparison study by the Office of School Facilities and two architectural firms looked at construction costs for recent school projects.⁵ The study “reinforces the point that, as school populations decrease, the square footage per student increases; thus, the cost per student also increases.” Generally, schools with fewer than 450 students required more space per student than larger schools, and schools smaller than 250 students required “dramatically more space per student.” Note that as Table 2 shows, at least three-quarters of the elementary schools and half of the middle and high schools have fewer than 450 students. After studying the extra costs associated with building small schools, the State Board of Education adopted rules that put barriers in the way of—but did not prohibit—capital projects for high schools with fewer than 300 pupils.⁶

School-Construction Costs and Trends

Table 4 shows the state-funded projects completed between 1995 and 2005.⁷

Table 4	No. of Projects	Project Cost	Sq Ft Total	Students
EL New	21	\$188,792,936	1,078,691	7,842
EL Add	24	\$78,638,289	718,315	6,531
EL Total	45	\$267,431,225	1,797,006	14,373
MS New	12	\$179,854,168	1,001,041	6,490
MS Add	6	\$43,541,690	364,155	2,705
MS Total	18	\$223,395,858	1,365,196	9,195
HS New	9	\$192,815,755	1,214,364	6,945
HS Add	9	\$107,159,199	881,251	6,121
HS Total	18	\$299,974,954	2,095,615	13,066
TOTAL	81	\$790,802,037	5,257,817	36,634

Note that nearly half of the projects—while funded under the Major Capital Program—were for additions and renovations to existing schools rather than for new construction. These projects do not require the purchase of a new site, and retain an existing campus. Sites for new schools are often away from the community’s population center, which increases operational costs and contributes to sprawl.

⁵ Chapter 61, State Board of Education Rules for Major Capital School Construction Projects.

⁶ Chapter 61, State Board of Education Rules for Major Capital School Construction Projects.

⁷ 1972-2005 (5.23.05). Excel Spreadsheet provided by Office of School Facilities, Maine Department of Education.

IV. FINDINGS: A REGIONAL APPROACH TO SCHOOL CONSTRUCTION

Quantifying the Cost of Local Control

Is there a cost to local control when it comes to making capital investment in school buildings? Identifying needs and funding capital improvements community-by-community is clearly more costly than using a regional approach. Consider an analogy: Does the Maine Department of Transportation (MDOT) wait for each community to identify when a section of highway needs repair and then repair only that stretch? Of course not. MDOT assesses the capital needs across the state, prioritizes them, develops a long-term plan, and allocates its resources accordingly.

A regional approach to school capital investment would reduce costs, keep many existing school buildings up-to-date, insure ongoing capital improvement in regions with sharply falling enrollments, remove an incentive to population dispersal, and put structures in place that could support further regionalization or consolidation of school administrative units. It need not alter school size in any way.

A “regional approach” means that the state would consider all the classroom space in an area larger than a single school district before committing to capital investment.⁸ Such an approach would focus on keeping and maintaining existing schools and buildings, rather than building new schools in new locations. It would not make schools any larger than they traditionally have been, but it would stop some of them from declining below a sustainable level.

No governance structures for making these decisions currently exist. While a regional approach to capital investment certainly would conserve capital investment, it should be noted that some operating costs—especially transportation costs—would increase. Most importantly, regional approaches for capital investment could lead the way for local school districts to consider “shared service” models for administrative functions and, perhaps, consolidation.

Tables 5 through 7 illustrate this approach. In each labor market area, the highest point of student enrollment during the last decade is used, and the numbers of students in portable classrooms are removed from this figure. (It is assumed that portables are needed due to overcrowding and that each portable houses 20 students.) The resulting “capacity” is then compared with the current enrollment. In most cases, this shows a “surplus” of classroom space in each region. The money invested in school construction is shown using project costs, the design capacity for these projects, and cost-per-student. The column “> Surplus” compares number of students used to determined the project’s design capacity with the number of “Surplus” students. The number of students exceeding the surplus is then multiplied by the cost-per-student to determine how much new construction was needed to address overcrowding. This amount is subtracted from the total project costs to determine the potential savings if the full capacity of all schools in the region had been used before considering construction. Note that “full capacity” refers only to schools of comparable grade spans, not schools serving older or younger students.

⁸ The pending revision of Chapter 61, the Rules for Major Capital School Construction Projects, includes language that requires “study of the availability and accessibility of space in other facilities, both those within the administrative unit and those in adjacent and nearby administrative units” (Ch. 61.2.3).

For example, the Augusta LMA held 7,716 elementary students at one point. But 460 of these students were housed in portable classrooms, making the true capacity of the available school buildings 7,256 students. This Augusta LMA currently has only 6,146 students, which means that it could absorb 1,110 additional students without any additional classrooms being built. Since 1995, the state spent \$26 million on school construction in this region. This money built new classrooms for 1,696 students. This broke down to \$15,568 per student. Because there was classroom space for 1,110 of these students, it would not have been necessary to build additional classrooms for these students if regional capacity had been considered. On the other hand, classrooms were needed for 586 students and, at a per-student cost of \$15,568, that would have cost \$9,122,907. By putting 1,110 students into elementary classrooms elsewhere in the region, \$17 million could have been saved in this region.

These savings add up. The hypothetical regional approach to elementary-school construction would have saved \$172 million since 1995. A regional approach to middle-school construction would have saved \$18 million and \$10.6 million with high schools. The potential savings total \$201 million. Note, too, that the evaluation of “necessary” and “unnecessary” construction is responsive to the realities in each region. While half the money spent on elementary-school construction might have been saved by using a regional approach, only 8 percent of the money spent on middle schools and 4 percent of the money spent on high schools could have been saved because enrollment was increasing in those grades and there was a lack of space in the affected regions. The regional analysis shows that the fragmented approach to capital investment caused by such a high degree of local control cost \$201 million over the last 10 years.

Table 5 Elementary Regional Analysis, Completed Projects, 1995-2005

ELEMENTARY	Enrollment High	Portables	Capacity	Enrollment Now	Surplus	Project Costs	Students	\$/per Student	> Surplus	Cost	Savings
Augusta	7,716	460	7,256	6,146	1,110	\$26,403,498	1,696	\$15,568	586	\$9,122,907	\$17,280,591
Bangor	10,699	500	10,199	8,497	1,702	\$43,547,734	2,278	\$19,117	576	\$11,011,192	\$32,536,542
Belfast	2,259	0	2,259	1,902	357	\$11,578,062	503	\$23,018	146	\$3,360,630	\$8,217,432
Boothbay	712	0	712	592	120	\$4,049,856	150	\$26,999	30	\$809,971	\$3,239,885
Bridgton-Paris	2,525	80	2,445	2,054	391	\$19,437,538	950	\$20,461	559	\$11,437,457	\$8,000,081
Brunswick	6,449	40	6,409	5,115	1,294	\$6,733,950	515	\$13,076	-779	\$6,733,950	\$0
Calais	1,813	0	1,813	1,399	414	\$0	0	\$0	-414	\$0	\$0
Camden	1,245	60	1,185	902	283	\$9,827,054	250	\$39,308	-33	\$9,827,054	\$0
Conway NH	658	0	658	563	95	\$36,415,066	0	\$0	-95	\$0	\$36,415,066
Dover-Foxcroft	2,223	0	2,223	1,371	852	\$0	0	\$0	-852	\$0	\$0
Ellsworth	5,922	100	5,822	4,404	1,418	\$8,902,225	736	\$12,095	-682	\$8,902,225	\$0
Farmington	3,469	0	3,469	2,281	1,188	\$10,472,524	522	\$20,062	-666	\$10,472,524	\$0
Houlton	1,706	0	1,706	1,265	441	\$0	0	\$0	-441	\$0	\$0
Lewiston-Auburn	9,273	140	9,133	8,558	575	\$61,614,550	4,518	\$13,638	3,943	\$53,772,946	\$7,841,604
Lincoln	667	0	667	506	161	\$0	0	\$0	-161	\$0	\$0
Machias	1,910	0	1,910	1,403	507	\$677,000	100	\$6,770	-407	\$677,000	\$0
Madawaska	617	0	617	493	124	\$0	0	\$0	-124	\$0	\$0
Millinocket	621	0	621	514	107	\$0	0	\$0	-107	\$0	\$0
Pittsfield	1,397	0	1,397	1,053	344	\$3,834,000	287	\$13,359	-57	\$3,834,000	\$0
Portland Metro	27,100	200	26,900	23,673	3,227	\$54,946,178	4,697	\$11,698	1,470	\$17,196,270	\$37,749,907
Portsmouth NH	1,257	0	1,257	807	450	\$0	0	\$0	-450	\$0	\$0
Presque Isle	4,670	0	4,670	3,578	1,092	\$0	0	\$0	-1,092	\$0	\$0
Rochester NH	2,643	0	2,643	1,766	877	\$0	0	\$0	-877	\$0	\$0
Rockland	1,748	0	1,748	1,621	127	\$7,932,500	751	\$10,563	624	\$6,591,052	\$1,341,448
Rumford	1,900	260	1,640	1,493	147	\$13,892,036	380	\$36,558	233	\$8,518,012	\$5,374,024
Saint George	323	0	323	235	88	\$2,760,000	301	\$9,169	213	\$1,953,090	\$806,910
Sanford	2,739	0	2,739	2,171	568	\$0	0	\$0	-568	\$0	\$0
Skowhegan	3,045	80	2,965	2,568	397	\$20,304,718	607	\$33,451	210	\$7,024,697	\$13,280,021
Waldoboro	1,942	0	1,942	1,635	307	\$0	427	\$0	120	\$0	\$0
Waterville	4,213	0	4,213	3,048	1,165	\$0	0	\$0	-1,165	\$0	\$0
York	1,814	0	1,814	1,550	264	\$0	520	\$0	256	\$0	\$0
	115,275	1,920	113,355	93,163	20,192	\$343,328,488	20,188				\$172,083,513

Table 6 Middle School Regional Analysis, Completed Projects, 1995-2005

MIDDLE	Enrollment High	Portables	Capacity	Enrollment Now	Surplus	Project Costs	Students	\$/per Student	> Surplus	Cost	Savings
Augusta	2,747	0	2,747	2,662	85	\$16,258,990	1,010	\$16,098	925	\$14,890,659	\$1,368,331
Bangor	4,117	0	4,117	3,847	270	\$7,864,050	630	\$12,491	360	\$4,491,602	\$3,372,448
Belfast	1,021	0	1,021	913	108	\$0	0	\$0	-108	\$0	\$0
Boothbay	0	0	0	0	0	\$0	0	\$0	0	\$0	\$0
Bridgton-Paris	632	0	632	612	20	\$0	0	\$0	-20	\$0	\$0
Brunswick	2,403	0	2,403	2,299	104	\$16,327,000	1,127	\$14,487	1,023	\$14,820,338	\$1,506,662
Calais	173	120	53	0	53	\$0	0	\$0	-53	\$0	\$0
Camden	418	0	418	414	4	\$0	0	\$0	-4	\$0	\$0
Conway NH	357	0	357	383	-26	\$0	0	\$0	26	\$0	\$0
Dover-Foxcroft	1,322	120	1,202	962	240	\$0	0	\$0	-240	\$0	\$0
Ellsworth	726	80	646	603	43	\$7,657,950	410	\$18,660	367	\$6,855,582	\$802,368
Farmington	1,098	0	1,098	971	127	\$8,442,000	350	\$23,831	223	\$0	\$8,442,000
Houlton	217	0	217	221	-4	\$0	0	\$0	4	\$0	\$0
Lewiston-Auburn	2,158	0	2,158	1,916	242	\$0	0	\$0	-242	\$0	\$0
Lincoln	540	0	540	511	29	\$0	0	\$0	-29	\$0	\$0
Machias	0	0	0	0	0	\$0	0	\$0	0	\$0	\$0
Madawaska	0	0	0	0	0	\$0	0	\$0	0	\$0	\$0
Millinocket	561	0	561	386	175	\$0	0	\$0	-175	\$0	\$0
Pittsfield	650	0	650	615	35	\$7,657,950	410	\$18,660	375	\$7,004,860	\$653,090
Portland Metro	13,111	1,180	11,931	13,097	-1,166	\$100,319,304	4,435	\$22,620	4,435	\$100,319,304	\$0
Portsmouth NH	341	0	341	294	47	\$6,900,000	425	\$16,235	378	\$6,136,941	\$763,059
Presque Isle	998	0	998	976	22	\$0	0	\$0	-22	\$0	\$0
Rochester NH	1,369	0	1,369	1,420	-51	\$0	0	\$0	51	\$0	\$0
Rockland	720	0	720	527	193	\$0	0	\$0	-193	\$0	\$0
Rumford	985	0	985	931	54	\$0	0	\$0	-54	\$0	\$0
Saint George	0	0	0	0	0	\$0	0	\$0	0	\$0	\$0
Sanford	704	0	704	656	48	\$0	0	\$0	-48	\$0	\$0
Skowhegan	813	120	693	736	-43	\$9,177,000	480	\$19,119	523	\$9,177,000	\$0
Waldoboro	200	0	200	171	29	\$13,162,834	345	\$38,153	316	\$12,056,393	\$1,106,441
Waterville	1,861	80	1,781	1,827	-46	\$15,125,000	725	\$20,862	725	\$15,125,000	\$0
York	1,197	0	1,197	1,160	37	\$0	669	\$0	632	\$0	\$0
Total	41,439	1,700	39,739	39,110	629	\$208,892,078	11,016	197,384			\$18,014,399

Table 7 High School Regional Analysis, Completed Projects, 1995-2005

HIGH SCHOOLS	Enrollment High	Portables	Capacity	Enrollment Now	Surplus	Project Costs	Students	\$/per Student	> Surplus	Cost	Savings
Augusta	4,323	360	3,963	3,968	-5	\$45,491,656	2,056	\$22,126	2,056	\$45,491,656	\$0
Bangor	6,383	0	6,383	6,383	0	\$0	0	\$0	0	\$0	\$0
Belfast	1,545	480	1,065	1,510	-445	\$4,924,672	585	\$8,418	585	\$4,924,672	\$0
Boothbay	318	0	318	285	33	\$0	0	\$0	-33	\$0	\$0
Bridgton-Paris	1,285	0	1,285	1,243	42	\$28,964,200	1,240	\$23,358	1,198	\$27,983,155	\$981,045
Brunswick	3,673	0	3,673	3,582	91	\$0	0	\$0	-91	\$0	\$0
Calais	877	0	877	798	79	\$0	0	\$0	-79	\$0	\$0
Camden	288	20	268	266	2	\$13,615,894	300	\$45,386	298	\$13,525,121	\$90,773
Conway NH	676	0	676	676	0	\$0	0	\$0	0	\$0	\$0
Dover-Foxcroft	1,850	0	1,850	1,731	119	\$0	0	\$0	-119	\$0	\$0
Ellsworth	2,755	0	2,755	2,524	231	\$1,598,894	1,160	\$1,378	929	\$1,280,494	\$318,400
Farmington	2,153	0	2,153	2,068	85	\$0	0	\$0	-85	\$0	\$0
Houlton	2,024	0	2,024	1,404	620	\$0	0	\$0	-620	\$0	\$0
Lewiston-Auburn	5,813	0	5,813	5,569	244	\$35,594,000	1,585	\$22,457	1,341	\$30,114,545	\$5,479,455
Lincoln	637	0	637	646	-9	\$0	0	\$0	9	\$0	\$0
Machias	1,373	20	1,353	1,023	330	\$0	0	\$0	-330	\$0	\$0
Madawaska	1,394	0	1,394	1,162	232	\$0	0	\$0	-232	\$0	\$0
Millinocket	780	0	780	491	289	\$0	0	\$0	-289	\$0	\$0
Pittsfield	515	0	515	489	26	\$0	0	\$0	-26	\$0	\$0
Portland Metro	17,796	780	17,016	18,044	-1,028	\$80,215,267	5,525	\$14,519	5,525	\$80,215,267	\$0
Portsmouth NH	356	0	356	321	35	\$0	0	\$0	-35	\$0	\$0
Presque Isle	3,601	0	3,601	3,196	405	\$3,215,000	306	\$10,507	-99	\$3,215,000	\$0
Rochester NH	867	0	867	853	14	\$23,103,370	1,100	\$21,003	1,086	\$22,809,327	\$294,043
Rockland	1,640	0	1,640	1,573	67	\$24,967,856	750	\$33,290	683	\$22,737,394	\$2,230,462
Rumford	1,292	0	1,292	1,292	0	\$4,296,000	270	\$15,911	270	\$4,296,000	\$0
Saint George	0	0	0	0	0	\$0	0	\$0	0	\$0	\$0
Sanford	1,410	0	1,410	1,410	0	\$0	0	\$0	0	\$0	\$0
Skowhegan	2,113	0	2,113	1,893	220	\$0	0	\$0	-220	\$0	\$0
Waldoboro	1,318	0	1,318	1,318	0	\$0	0	\$0	0	\$0	\$0
Waterville	3,113	0	3,113	3,093	20	\$0	0	\$0	-20	\$0	\$0
York	2,380	0	2,380	2,327	53	\$33,988,145	1,500	\$22,659	1,447	\$32,787,231	\$1,200,914
Total	74,548	1,660	72,888	71,138	1,750	\$299,974,954	16,377				\$10,595,093

These tables use the actual costs for the projects done in each region rather than current construction costs so that the savings shown are “real.” The dollar values shown are actual dollars spent by the state to build these projects, excluding interest costs for the bonds. The cost per student varies widely due to the size of the school, whether it was new construction or a renovation, the time period when the project was done, and construction costs at that time. Note that there are no middle or high schools in some regions (see the methodology section for more information).

All 31 regions had surplus classroom space in elementary schools before any capital investment was made, despite the fact that nearly 2,000 students were housed in portable classrooms in some school districts. Five of the regions needed new space in their middle schools, while 26 had surplus space. Nine of the regions needed new space in their high schools, while 21 had surplus space. These differences reflect the student population aging and moving into the upper grades.

This analysis looks only at classroom space and student enrollment. It does not take into account that many of the schools with surplus space have sub-standard “core spaces,” such as cafeterias, libraries, and gymnasiums. Some of these schools may have life safety-code or building-system issues that could be remedied by using the Revolving Renovation Fund. However, the central point remains: As student enrollment is falling, most regions have enough classroom space to house students, and significant money could have been saved if a regional approach to capital investment had been taken. If necessary, some of the hypothetical savings of \$201 million could be applied to upgrading the existing capital stock of school buildings, which would keep many schools rooted in the local community. If one uses cost-per-student calculations from the projects completed since 1995, costs of renovation and addition are about 50 percent less than the cost of new construction.

Capital projects done over the last decade added five million square feet of space across the state, increasing the student capacity. Because the disposal of school buildings is handled at the local level, the state Department of Education does not know how many of the “old” buildings were removed from the inventory, except in cases where some intra-district consolidation took place. For example, the Old Town Elementary School project consolidated four smaller elementary schools, and the Windham High School project removed more than 30 portable classrooms from the inventory. It remains impossible to say how much of the five million square feet of new space is “net.” We at least know that the full five million square feet is now available for use. Table 8 shows these changes by region. “Former” refers to capacity as shown in Tables 5 through 7. “New” adds in the newly built space, from the “Surplus” column in the above tables.

Table 8	ELEMENTARY			MIDDLE SCHOOLS			HIGH SCHOOLS		
	Former	New	% Change	Former	New	% Change	Former	New	% Change
Augusta	7,256	7,842	8.08%	2,747	3,672	33.67%	3,963	6,024	52.01%
Bangor	10,199	10,775	5.65%	4,117	4,477	8.73%	6,383	6,383	0.00%
Belfast	2,259	2,405	6.46%	1,021	1,021	0.00%	1,065	1,650	54.93%
Boothbay	712	742	4.21%	0	0	0.00%	318	318	0.00%
Bridgton-Paris	2,445	3,004	22.86%	632	632	0.00%	1,285	2,483	93.23%
Brunswick	6,409	6,409	0.00%	2,403	3,426	42.57%	3,673	3,673	0.00%
Calais	1,813	1,813	0.00%	53	53	0.00%	877	877	0.00%
Camden	1,185	1,185	0.00%	418	418	0.00%	268	566	111.19%
Conway NH	658	658	0.00%	357	383	7.28%	676	676	0.00%
Dover-Foxcroft	2,223	2,223	0.00%	1,202	1,202	0.00%	1,850	1,850	0.00%
Ellsworth	5,822	5,822	0.00%	646	1,013	56.87%	2,755	3,684	33.72%
Farmington	3,469	3,469	0.00%	1,098	1,321	20.31%	2,153	2,153	0.00%
Houlton	1,706	1,706	0.00%	217	221	1.84%	2,024	2,024	0.00%
Lewiston-Auburn	9,133	13,076	43.17%	2,158	2,158	0.00%	5,813	7,154	23.07%
Lincoln	667	667	0.00%	540	540	0.00%	637	646	1.41%
Machias	1,910	1,910	0.00%	0	0	0.00%	1,353	1,353	0.00%
Madawaska	617	617	0.00%	0	0	0.00%	1,394	1,394	0.00%
Millinocket	621	621	0.00%	561	561	0.00%	780	780	0.00%
Pittsfield	1,397	1,397	0.00%	650	1,025	57.75%	515	515	0.00%
Portland Metro	26,900	28,370	5.46%	11,931	16,366	37.17%	17,016	23,569	38.51%
Portsmouth NH	1,257	1,257	0.00%	341	719	110.85%	356	356	0.00%
Presque Isle	4,670	4,670	0.00%	998	998	0.00%	3,601	3,601	0.00%
Rochester NH	2,643	2,643	0.00%	1,369	1,420	3.73%	867	1,953	125.26%
Rockland	1,748	2,372	35.70%	720	720	0.00%	1,640	2,323	41.65%
Rumford	1,640	1,873	14.21%	985	985	0.00%	1,292	1,562	20.90%
Saint George	323	536	65.94%	0	0	0.00%	0	0	0.00%
Sanford	2,739	2,739	0.00%	704	704	0.00%	1,410	1,410	0.00%
Skowhegan	2,965	3,175	7.08%	693	1,216	75.47%	2,113	2,113	0.00%
Waldoboro	1,942	2,062	6.18%	200	516	158.00%	1,318	1,318	0.00%
Waterville	4,213	4,213	0.00%	1,781	2,506	40.71%	3,113	3,113	0.00%
York	1,814	2,070	14.11%	1,197	1,829	52.80%	2,380	3,827	60.80%
TOTALS	113,355	122,321	7.91%	39,739	50,102	26.08%	72,888	89,348	22.58%

The net increase in statewide student capacity created by capital investment since 1995 is 35,789. (This number differs from the 47,581 students shown in Tables 5 through 7 because the capital investment was inadequate to meet the existing demand in some regions.)

Capital Investment and Future Enrollment

The Office of School Facilities uses student-enrollment projections done by the State Planning Office (SPO) to determine the need for construction projects. The enrollments shown in the tables below use the SPO calculations for the year 2015, adjusted for LMA and attending (rather than resident) enrollment, so that they are comparable to the enrollments used in the regional analysis.

The Construction Team at the Maine Department of Education has used a formula to put a dollar value on the 66 pending projects. They have not yet determined whether any particular project would be new construction or an addition/renovation. Nor have they determined the precise design capacity of each project. The tables below reflect the budget figures provided by Department staff, and the current (2005) student enrollment in the school (or schools in the case of intra-district consolidation). As in the previous section, the request for capital investment is compared to the LMA's capacity.

Table 9: Elementary Regional Analysis, Pending Projects, 2015 Enrollment Projection

ELEMENTARY	New Capacity	Proj Enroll	Surplus	Est Proj Costs	Est Students	\$/Student	>Surplus	Cost	Savings
Augusta	7,842	6,298	1,544	\$10,000,000	268	\$37,313	0	\$0	\$10,000,000
Bangor	10,775	8,374	2,401	\$20,700,000	892	\$23,206	0	\$0	\$20,700,000
Belfast	2,405	1,678	727	\$5,670,000	222	\$25,541	0	\$0	\$5,670,000
Boothbay	742	490	252	\$0	0	\$0	0	\$0	\$0
Bridgton-Paris	3,004	1,948	1,056	\$0	0	\$0	0	\$0	\$0
Brunswick	6,409	5,569	840	\$72,983,750	2,126	\$34,329	1,286	\$2,734,601	\$70,249,149
Calais	1,813	1,587	226	\$11,800,000	0	\$0	0	\$0	\$11,800,000
Camden	1,185	1,021	164	\$0	0	\$0	0	\$0	\$0
Conway NH	658	414	244	\$0	0	\$0	0	\$0	\$0
Dover-Foxcroft	2,223	1,305	918	\$0	0	\$0	0	\$0	\$0
Ellsworth	5,822	4,174	1,648	\$17,094,875	779	\$21,945	0	\$0	\$17,094,875
Farmington	3,469	2,432	1,037	\$11,000,000	361	\$30,471	0	\$0	\$11,000,000
Houlton	1,706	1,627	79	\$0	0	\$0	0	\$0	\$0
Lewiston-Auburn	13,076	8,698	4,378	\$17,255,000	580	\$29,750	0	\$0	\$17,255,000
Lincoln	667	523	144	\$0	0	\$0	0	\$0	\$0
Machias	1,910	1,247	663	\$0	0	\$0	0	\$0	\$0
Madawaska	617	566	51	\$0	0	\$0	0	\$0	\$0
Millinocket	621	335	286	\$7,200,000	0	\$0	0	\$0	\$7,200,000
Pittsfield	1,397	1,618	-221	\$0	0	\$0	0	\$0	\$0
Portland Metro	28,370	26,081	2,289	\$143,739,625	5,254	\$27,358	2,965	\$15,576,001	\$128,163,624
Portsmouth NH	1,257	727	530	\$0	0	\$0	0	\$0	\$0
Presque Isle	4,670	3,501	1,169	\$13,400,000	350	\$38,286	0	\$0	\$13,400,000
Rochester NH	2,643	2,058	585	\$0	0	\$0	0	\$0	\$0
Rockland	2,372	1,582	790	\$7,897,500	472	\$16,732	0	\$0	\$7,897,500
Rumford	1,873	1,298	575	\$0	0	\$0	0	\$0	\$0
Saint George	536	364	172	\$0	0	\$0	0	\$0	\$0
Sanford	2,739	2,650	89	\$5,433,750	205	\$26,506	116	\$23,782	\$5,409,968
Skowhegan	3,175	2,714	461	\$8,500,000	281	\$30,249	0	\$0	\$8,500,000
Waldoboro	2,062	1,263	799	\$10,200,000	241	\$42,324	0	\$0	\$10,200,000
Waterville	4,213	3,074	1,139	\$0	0	\$0	0	\$0	\$0
York	2,070	1,598	472	\$0	0	\$0	0	\$0	\$0
TOTALS	122,321	96,812	25,509	\$362,874,500	12,031	\$30,162		\$18,334,384	\$344,540,116

Table 10: Middle-School Regional Analysis, Pending Projects, 2015 Enrollment Projection

MIDDLE	New Capacity	Proj Enroll	Surplus	Est Proj Costs	Est Students	\$/Student	>Surplus	Cost	Savings
Augusta	3,672	1,907	1,765	\$0	0	\$0	0	\$0	\$0
Bangor	4,477	3,092	1,385	\$0	0	\$0	0	\$0	\$0
Belfast	1,021	632	389	\$0	0	\$0	0	\$0	\$0
Boothbay	0	0	0	\$0	0	\$0	0	\$0	\$0
Bridgton-Paris	632	439	193	\$0	0	\$0	0	\$0	\$0
Brunswick	3,426	1,588	1,838	\$18,165,000	775	\$23,439	0	\$0	\$18,165,000
Calais	53	66	-13	\$0	0	\$0	0	\$0	\$0
Camden	418	797	-379	\$0	0	\$0	0	\$0	\$0
Conway NH	383	410	-27	\$0	0	\$0	0	\$0	\$0
Dover-Foxcroft	1,202	625	577	\$0	0	\$0	0	\$0	\$0
Ellsworth	1,013	264	749	\$0	0	\$0	0	\$0	\$0
Farmington	1,321	731	590	\$0	0	\$0	0	\$0	\$0
Houlton	221	138	83	\$0	0	\$0	0	\$0	\$0
Lewiston-Auburn	2,158	1,648	510	\$20,101,000	727	\$27,649	0	\$0	\$20,101,000
Lincoln	540	473	67	\$0	0	\$0	0	\$0	\$0
Machias	0	0	0	\$0	0	\$0	0	\$0	\$0
Madawaska	0	0	0	\$0	0	\$0	0	\$0	\$0
Millinocket	561	260	301	\$0	0	\$0	0	\$0	\$0
Pittsfield	1,025	468	558	\$0	0	\$0	0	\$0	\$0
Portland Metro	16,366	10,702	5,664	\$55,918,750	2,180	\$25,651	0	\$0	\$55,918,750
Portsmouth NH	719	318	401	\$0	0	\$0	0	\$0	\$0
Presque Isle	998	481	517	\$0	0	\$0	0	\$0	\$0
Rochester NH	1,420	1,100	320	\$0	0	\$0	0	\$0	\$0
Rockland	720	369	351	\$0	0	\$0	0	\$0	\$0
Rumford	985	626	359	\$0	0	\$0	0	\$0	\$0
Saint George	0	0	0	\$0	0	\$0	0	\$0	\$0
Sanford	704	731	-27	\$0	0	\$0	0	\$0	\$0
Skowhegan	1,216	633	583	\$0	0	\$0	0	\$0	\$0
Waldoboro	516	101	415	\$0	0	\$0	0	\$0	\$0
Waterville	2,506	1,074	1,432	\$0	0	\$0	0	\$0	\$0
York	1,829	934	895	\$0	0	\$0	0	\$0	\$0
TOTALS	50,102	30,605	19,497	\$94,184,750	3,682	\$25,580		\$0	\$94,184,750

Table 11 High-School Regional Analysis, Pending Projects, 2015 Enrollment Projection

HIGH SCHOOLS	New Capacity	Proj Enroll	Surplus	Est Proj Costs	Est Students	\$/Student	>Surplus	Cost	Savings
Augusta	6,024	3,204	2,820	\$0	0	\$0	0	\$0	\$0
Bangor	6,383	5,094	1,289	\$69,943,000	2,149	\$32,547	0	\$0	\$69,943,000
Belfast	1,650	1,167	483	\$23,000,000	516	\$44,574	0	\$0	\$23,000,000
Boothbay	318	267	51	\$0	0	\$0	0	\$0	\$0
Bridgton-Paris	2,483	773	1,710	\$0	0	\$0	0	\$0	\$0
Brunswick	3,673	2,929	744	\$37,800,000	1,109	\$34,085	0	\$0	\$37,800,000
Calais	877	348	529	\$0	0	\$0	0	\$0	\$0
Camden	566	240	326	\$0	0	\$0	0	\$0	\$0
Conway NH	676	779	-103	\$0	0	\$0	0	\$0	\$0
Dover-Foxcroft	1,850	921	929	\$5,536,000	197	\$28,102	0	\$0	\$5,536,000
Ellsworth	3,684	2,318	1,366	\$10,045,000	341	\$29,457	0	\$0	\$10,045,000
Farmington	2,153	1,461	692	\$28,800,000	917	\$31,407	0	\$0	\$28,800,000
Houlton	2,024	1,086	938	\$0	0	\$0	0	\$0	\$0
Lewiston-Auburn	7,154	4,613	2,541	\$92,127,250	2,883	\$31,955	0	\$0	\$92,127,250
Lincoln	646	633	13	\$0	0	\$0	0	\$0	\$0
Machias	1,353	477	876	\$8,800,000	142	\$61,972	0	\$0	\$8,800,000
Madawaska	1,394	539	855	\$0	0	\$0	0	\$0	\$0
Millinocket	780	245	535	\$0	0	\$0	0	\$0	\$0
Pittsfield	515	258	257	\$0	0	\$0	0	\$0	\$0
Portland Metro	23,569	16,162	7,407	\$82,250,500	2,801	\$29,365	0	\$0	\$82,250,500
Portsmouth NH	356	125	231	\$0	0	\$0	0	\$0	\$0
Presque Isle	3,601	2,234	1,367	\$0	0	\$0	0	\$0	\$0
Rochester NH	1,953	825	1,128	\$0	0	\$0	0	\$0	\$0
Rockland	2,323	836	1,487	\$0	0	\$0	0	\$0	\$0
Rumford	1,562	1,178	384	\$0	0	\$0	0	\$0	\$0
Saint George	0	0	0	\$0	0	\$0	0	\$0	\$0
Sanford	1,410	1,379	31	\$52,430,000	1,410	\$37,184	0	\$0	\$52,430,000
Skowhegan	2,113	1,455	658	\$0	0	\$0	0	\$0	\$0
Waldoboro	1,318	952	366	\$0	0	\$0	0	\$0	\$0
Waterville	3,113	2,272	841	\$0	0	\$0	0	\$0	\$0
York	3,827	934	2,893	\$0	0	\$0	0	\$0	\$0
TOTALS	89,348	55,703	33,645	\$410,731,750	12,465	\$32,951			\$410,731,750

This analysis shows a potential cost savings for the 62 pending projects of \$850 million, if a regional approach were to be used. Only a \$20 million capital investment is necessary due to a lack of classroom capacity. Projections such as this, of course, are riskier than the analysis of completed projects. Enrollment patterns change, the organization of schools within a district change for a wide variety of reasons, and the stock of existing school buildings needs to be maintained and improved. However, once again, the regional analysis raises the issue of whether some of the \$870 million projected investment would not be better used on improving the current school buildings through renovation and system upgrades.

V. FINDINGS: POPULATION DISPERSAL AND SPRAWL

Statewide Overview

Because student enrollment is falling sharply across the state, population dispersal from service center communities to the suburbs and rural areas is less apparent than it appears in census and housing data. All 31 LMAs had a decrease in K-8 enrollment between 1996 and 2005. Twenty LMAs had an increase in their high-school enrollments. Yet this increase was not large enough to offset the elementary student losses: only four LMAs had a net gain in students. The greatest gain was in the Portland Metro area, followed by York, Conway NH (Fryeburg), and the islands of the Saint George area.

Table 12 shows the number of school units in each LMA, the number of those units that had a K-12 enrollment increase, the number of service centers, the number of service center communities that showed an increase, and the net gain or loss of pupils for the LMA.

	Table 12	SAU	Increase	SC	Increase	K-8	9-12	K-12
01	Augusta	19	5	1	0	-1,419	-32	-1,451
02	Bangor	24	6	4	0	-2,078	343	-1,735
03	Belfast	4	0	1	0	-485	-1	-486
04	Boothbay	3	0	1	0	-135	30	-105
05	Bridgton-Paris	2	0	2	0	-662	154	-508
06	Brunswick	13	2	2	0	-1,366	375	-991
07	Calais	19	2	2	0	-363	-195	-558
08	Camden	6	1	0	0	-62	-575	-637
09	Conway NH	1	1	1	1	-111	158	47
10	Dover-Foxcroft	10	0	4	0	-611	-136	-747
11	Ellsworth	34	3	4	0	-1,394	47	-1,347
12	Farmington	12	2	2	0	-937	-17	-954
13	Houlton	11	0	1	0	-409	-244	-653
14	Lewiston-Auburn	11	5	2	1	-1,167	341	-826
15	Lincoln	5	0	1	0	-241	20	-221
16	Machias	17	0	3	0	-468	-253	-721
17	Madawaska	3	0	1	0	-104	-164	-268
18	Millinocket	5	0	1	0	-439	-191	-630
19	Pittsfield	3	1	1	1	-60	50	-10
20	Portland Metro	25	13	7	3	-2,701	3,024	323
21	Portsmouth NH	1	0	1	0	-160	22	-138
22	Presque Isle	19	2	6	0	-1,001	-398	-1,399
23	Rochester NH	2	0	0	0	-520	255	-265
24	Rockland	4	0	2	0	-833	762	-71
25	Rumford	9	2	2	0	-485	154	-331
26	Saint George	2	0	0	0	0	3	3
27	Sanford	2	1	1	0	-583	254	-329
28	Skowhegan	11	0	2	0	-602	-139	-741
29	Waldoboro	10	0	1	0	-240	29	-211
30	Waterville	4	1	2	0	-783	261	-522
31	York	2	2	0	0	-64	158	94
	TOTALS	293	49	58	6	-20,483	4,095	-16,388

Seventeen percent of all school districts had a net K-12 enrollment increase, while only 10 percent of service centers had such an increase. Generally, enrollment trends in the 58 school districts that contained a service center were not significantly different from the trends in all 293 school districts. The table below shows the median percent change of all school districts, the number of service centers that lost fewer students than the median and lost more students than the median.

	Median percent change	SC > Median	Percent	SC < Median	Percent
K-8	-16.53 percent	26	45 percent	32	55 percent
9-12	0.00 percent	30	52 percent	28	48 percent
K-12	-13.40 percent	30	52 percent	28	48 percent

Population dispersal, or “sprawl,” means that the population—in this case, school-age children—are leaving service center communities and migrating to outlying areas. While about half of the LMAs had some school districts with a net increase in K-12 students, only four LMAs—all containing Maine’s largest cities—show evidence of sprawl. Each of these areas has a slightly different pattern, so they will be discussed separately.

Augusta Micropolitan Area

The Augusta School Department had a net loss of 495 pupils, 17.24 percent of its 1996 enrollment. The pattern of this loss was unique—rather than losing a large number of elementary students and gaining high school students, enrollment declined 17 percent across the board. Five districts in the Augusta area showed enrollment gains.

	K-8		9-12		K-12	
MARANACOOK CSD-READFIELD	56	20.74%	46	10.07%	102	14.03%
MONMOUTH	8	1.54%	52	24.19%	60	8.16%
PALERMO	8	5.33%	5	6.41%	13	5.70%
VASSALBORO	-42	-7.76%	67	33.17%	25	3.36%
WINDSOR	72	28.80%	-6	-4.03%	66	16.54%
Total	102		164		266	

Bangor Metropolitan Area

There are four service centers in this area—Bangor, Brewer, Orono, and Newport—all of which had a net loss of students. Elementary enrollment fell by more than 1,000 students, while high-school enrollment rose slightly, by 90 students. Five districts in the Bangor area showed enrollment gains.

	K-8		9-12		K-12	
BRADLEY	25	18.66%	28	65.12%	53	29.94%
HERMON	46	7.88%	17	7.56%	63	7.79%
SAD #23 CARMEL	62	10.60%	52	20.16%	114	13.52%
SAD #38 DIXMONT	12	4.43%	-4	-3.08%	8	2.00%
SAD #64 CORINTH	-52	-5.66%	88	23.40%	36	2.78%
Total	93		181		274	

It also should be noted that three other school districts immediately outside the Bangor/Brewer urban core (Hampden, Orrington, and Veazie) showed evidence of population dispersal, even though their overall enrollment was down slightly. While the median enrollment decline in the metropolitan area was 11.05 percent, these three districts lost only about 3 percent of their pupils.

Lewiston –Auburn Metropolitan Area

Auburn lost a total of 440 pupils, or 11.26 percent of its 1996 total. The loss of 477 pupils in the elementary schools was slightly offset by a 3 percent increase in high-school enrollment. Lewiston, on the other hand, gained a total 114 pupils. This was most likely caused by the influx of English Language Learners (primarily with Somalian backgrounds) that began in 2001. In fact, Lewiston’s enrollment was falling between 1996 and 2001, consistent with other urban areas, but increased by nearly 200 students between 2001 and 2005. In addition to Lewiston, four suburban school districts in the LMA showed a net gain in students.

	K-8		9-12		K-12	
MINOT	1	0.35%	7	5.38%	8	1.91%
OAK HILL CSD-WALES	-	-	58	11.09%	58	11.09%
POLAND	12	2.11%	43	19.91%	55	7.02%
WALES	8	4.47%	-	-	8	4.47%
Total	21		108		129	

Portland Metropolitan Area

The seven service centers in this area are tightly clustered. Portland, South Portland, Westbrook, and Scarborough form a contiguous area. Biddeford and Saco are neighboring cities. Freeport, the remaining service center in this LMA abuts Brunswick, a service center community in a different LMA. Among the seven service centers, elementary enrollment is down by 1,835 pupils, while secondary enrollment has risen by 1,295 pupils. This is a net loss of 540 pupils.

Four of the service centers saw sharp declines in their elementary enrollment, offset by increases in high-school enrollment.

	K-8		9-12		K-12	
FREEPORT	-140	-15.22%	118	40.41%	-22	-1.82%
PORTLAND	-1,399	-23.03%	393	18.31%	-1006	-12.24%
SOUTH PORTLAND	-390	-16.04%	26	2.66%	-364	-10.68%
WESTBROOK	-176	-9.03%	30	3.93%	-146	-5.39%
Total	-2,105		567		-1538	

The three remaining service centers saw net increases in their enrollment.

	K-8		9-12		K-12	
BIDDEFORD	5	0.26%	83	9.95%	88	3.16%
SACO	-137	-7.07%	239	30.48%	102	3.75%
SCARBOROUGH	402	20.96%	406	67.89%	808	32.11%
Total	270		728		998	

Scarborough, which lies directly between the Biddeford-Saco and Portland-South Portland areas, is the fastest growing school district in the state. In addition to these three school districts, 13 suburban districts had enrollment increases.

	K-8		9-12		K-12	
ARUNDEL	22	5.63%	56	32.00%	78	13.78%
CAPE ELIZABETH	-9	-0.72%	70	13.23%	61	3.42%
DAYTON	96	49.48%	38	50.00%	134	49.63%
FALMOUTH	330	27.57%	265	75.50%	595	38.44%
GORHAM	-2	-0.11%	223	33.89%	221	8.83%
RAYMOND	-26	-4.40%	79	42.93%	53	6.84%
SAD #51 CUMBERLAND	101	6.77%	270	61.36%	371	19.20%
SAD #57 WATERBORO	-8	-0.32%	278	31.06%	270	8.00%
SAD #71 KENNEBUNK	-161	-9.34%	196	31.82%	35	1.50%
WINDHAM	100	5.55%	160	23.81%	260	10.51%
Total	448		1,636		2,084	

The Cost of Sprawl

Twenty-seven of 31 labor market areas show no evidence of sprawl. Whatever population dispersal is present is masked by the decline in student enrollment statewide. Four LMAs, which include Maine's largest urban areas and a total of 14 service centers, show evidence of sprawl that offsets the drop in enrollment in their service centers. Of the 14 service centers in these areas, only four had increased student enrollment. Lewiston's increase was due to an influx of immigrant families. The other three centers—Biddeford, Saco, and Scarborough—are contiguous, on the coast, adjacent to the Maine Turnpike, and lie between Maine's largest city and fast-growing York County.

Of the four labor market areas, one (Augusta Micro) had decreasing enrollment across the board, one (Portland Metro) had increasing enrollment across the board, and two (Bangor and Lewiston-Auburn) saw a sizable loss of elementary students, partly offset by increases in high-school students, which still resulted in a net K-12 loss of pupils.

Increases in suburban and outlying areas only partially offset decreases in the service centers. In the Augusta area, increases in the suburban districts made up only 53.7 percent of the enrollment decrease in Augusta. In the Bangor area, suburban districts made up only 29.78 percent of the loss in the service centers. In the Lewiston-Auburn area, only 40 percent of the loss was made up by Lewiston's gain and that of the suburban districts. On the other hand, the student increase in Biddeford, Saco, Scarborough, and the 13 suburban districts netted 1,544 students, a 200 percent increase.

Thirteen of the school-construction projects completed between 1995 and 2005 were built in response to population dispersal in the school districts discussed above. Table 13 shows these projects. In addition, Cape Elizabeth, Cumberland, Dayton, Freeport, Scarborough, and South Portland completed local-only renovation projects during this same period.

Table 13

PROJECT	COST	SQ. FT	STUDENTS
Wales Central School	\$2,151,750	16,500	185
Windsor Elementary School	\$7,850,518	194,777	340
Levant Elementary School	\$4,818,500	33,108	300
Raymond Elementary School	\$7,794,682	61,857	450
Kennebunk Elementary School	\$16,052,724	56,895	600
Windham High School	\$35,582,000	220,000	1,100
Poland Regional H S	\$18,000,000	125,710	785
Falmouth High School	\$22,003,714	141,800	750
Maranacook Community Middle Sch	\$8,520,000	64,000	400
Gorham Middle School	\$21,930,000	139,000	750
Greely Middle School	\$17,918,500	56,420	750
Massabesic Jr High School	\$20,668,428	64,534	500
Middle School of the Kennebunks	\$17,019,000	123,000	760
Total	\$200,309,816	1,297,601	7,670

What are the capital costs caused by families moving further and further out from service center areas? The state spent \$200 million to increase the capacity of suburban communities to enroll new pupils, while enrollment fell precipitously in nearby urban areas. In the Augusta, Bangor, and Lewiston-Auburn LMAs, these “new” students easily could have fit into schools in those cities. In the Portland Metro area, all but 546 students could have fit into the region’s classroom space. Construction for those 546 students would have cost \$8.5 million (using the \$15,586 figure from the regional analysis above). The remaining \$192 million would have been “unnecessary,” if a regional approach had been used.

VI. DISCUSSION

Renegotiating the State-Local Partnership

Among the documents reviewed as background for this project was a monograph written by Frank O'Hara of Planning Decisions and issued by the State Planning Office in May, 1997 entitled *The Cost of Sprawl*. The report is not about school funding or construction, but it contains this telling quote:

Between 1970 and 1995, the number of elementary and secondary public-school students in Maine actually declined by 27,000. Yet from 1975 to 1995, Maine state government alone committed \$727 million to new school construction and additions. Some of the money was used to renovate or consolidate old schools. But 46 percent, or \$338 million, went to build new capacity in fast-growing towns.

This new capacity was redundant. It was not needed, because Maine's school population was increasing—in fact students were decreasing. It was simply needed to serve existing students whose families had moved around.

More schools for fewer students also has a subtler cost. It means that the old schools left behind in the cities are underused. This, in turn, means higher per-pupil costs for maintenance. So we're paying twice—once to build a new set of schools in the countryside, and once more to maintain older schools which are underused.

Maine's two most recent governors both have spoken of the need to regionalize and consolidate schools, school districts, and municipal services. There has been much discussion, some experimentation, and few results. The Legislature's Rural Caucus, the Maine Small School Coalition, and the Maine Municipal Association argue vigorously in favor of local control.

On the pro-consolidation side, the debate tends to focus on the number of superintendents and district administrative overhead. But "System Administration" accounts for just 4 percent (\$70 million) of the \$2 billion spent on K-12 education in Maine each year.⁹ On the anti-consolidation side, the debate focuses on closing "our school." In many small towns, the potential loss of a school is psychologically and demographically devastating.

Yet, statewide student enrollment has been falling steadily since 1970. Over the last 10 years the number of classroom teachers in Maine has been remarkably stable, meaning that district size, school size, class size, and teacher-pupil ratios all have fallen. Per-pupil spending has risen accordingly: Maine's per pupil spending on K-12 education is seventh highest in the nation, exceeding \$10,000 per student.¹⁰

⁹ *Financial Indicators for 2004-2005, Preliminary* (1/17/06). Data from EFM-45 submitted by each SAU.

¹⁰ *CQ's State Fact Finder, 2006*. Washington, D.C.: Congressional Quarterly Press, 2006.

The tradition of “local control” is deeply rooted in Maine. But the need to provide equity for both property taxpayers and students has made the state government a bigger and bigger partner in “local” decisions. Rather than explicitly addressing this changed relationship, the state has created a collection of “agency problems,” in which one level of government (local) makes decisions and another level of government (state) pays for them.

Until the current Legislature passed the tax-relief measure known as LD1 and its Essential Programs and Services (EPS) education aid mechanism, the state had committed to paying 55 percent of whatever 300 local school districts chose to spend on their schools, with no cost-containment measures in place. Since the passage of the Sinclair Act in 1957, the state similarly has been committed to funding most of the capital investment for schools.

EPS changed the paradigm for state aid to education from “certifying the costs” spent at the local level to defining the “Essential Program and Services” to which the state would contribute. Most importantly, EPS is based on research done on resource allocation in Maine’s “high performing” schools. The model is too complex to describe in full here, but it establishes ratios for the number of teachers, support staff, and administrators. For example, there should be one administrator for every 305 students in K-8 and for every 350 high-school students. There should be one guidance counselor for every 350 elementary students and for every 250 secondary students. In this way, the legislature set targets for operating expenses, and began cajoling school districts to move toward those targets. EPS takes a highly rational, top-down approach to funding the operation of schools.

Capital investment through state-local partnership lacks this sort of rationality. The significant changes to Chapter 61 in 1999 improved the situation: Districts have to show evidence of maintaining their school buildings over time; the rating process was depoliticized; and the process of negotiating the design of the building began to assume that the local district would pick up costs that went beyond state prototypes. In particular, the involvement of a consistent team of three experts to visit the schools that made application, rate their need, and then actively engage in the design of each school has brought considerably more consistency to the process. Nonetheless, the process is fundamentally driven by local control from beginning to end.

School districts (and schools)—85 percent of which are getting smaller each year and will continue to shrink for the foreseeable future—have little incentive to consolidate to conserve operating expenses. They have a great deal of incentive to stay the way they are, if the state will help them maintain surplus space or build schools for “new” students. In the abstract, legislators and policy makers know that this is unsustainable. The State Board of Education has identified school size as a cost-driver in capital projects and taken steps to consider it in decision-making. The EPS model—based on how “high-performing Maine schools” allocate their resources—is predicated on a district size of 1,500 and school sizes of greater than 300. Yet the governance structures of local control block strategic reform.

How much is local control costing? When it comes to capital investment, approximately \$200 million could have been saved through the hypothetical regional approach shown above. If such an approach is taken over the next decade, about \$800 million could be saved, or the resources could be better spent on renovation and maintenance.

It is important to emphasize that this is *not* a “Two Maines” issue. It has little to do with north vs. south or urban vs. rural. The patterns that are evident statewide exist in any particular county or LMA, even in southern Maine where the population has remained most stable. The dominant trend is that student enrollment has been falling for 35 years and is continuing to fall. To the degree that they are able, many families prefer to live in suburban and more rural areas, straining resources in those communities by their presence, and straining resources in the service centers by their absence.

Despite the fact that the state is the majority investor in school capital projects, the process is driven by local control. This perspective exacerbates fragmented governance, wastes resources, and misses an opportunity to foster greater collaboration and regionalization. And, of course, there are obligations that infrastructure places on local and state officials.

If the state were to take a more strategic and regional approach to its investment in school capital projects, how might it support quality education, deal efficiently with population shifts, show increased stewardship for its current stock of buildings, and foster collaboration and regionalization?

Policy Recommendations

The following policy recommendations are intended to insure that: (a) the state’s majority investment in school construction is made rationally; (b) school buildings across the state are adequately maintained in *all* communities; (c) school buildings can be improved and enhanced, even if enrollment is falling; and, (d) school space across the state is efficiently used.

1. The Commissioner of Education should create, and the Legislature should fund a plan to create an inventory of all Maine school buildings. No such plan currently exists. The inventory process should be conducted by experts such as those familiar with life safety codes and educational programming, and include:
 - a. The size, location, and age of each building;
 - b. The size and attributes of the school site;
 - c. The degree to which the building meets current life safety codes;
 - d. The degree to which the building meets the current educational programming requirements found in the *Space Allocation Workbook*; and
 - e. An estimate of annual maintenance costs and a basis for these, such as one might see in a “reserve study” done for other types of commercial property.
2. The Department of Education budget should include annual funding for a comprehensive student-enrollment projection by grade level in each municipality. The projection methodology should consider the effect of new housing development and other shifts in population.
3. Using the data from the inventory, a standing committee of the Department of Education authorized by the Legislature should create student-enrollment projections, operating costs drawn from the EPS model, and a 10-year strategic plan for capital investment (similar to MDOT’s plan for roads and bridges).
 - a. The plan should:

- i. Identify school buildings that are high priorities for removal from the inventory, due to code deficiencies and the inadequate design;
 - ii. Determine what portion of the state's capital investment should be spent on maintenance and system-improvements to existing buildings;
 - iii. Set priorities for capital investment -- both renovation and new construction -- in each region of the state, with the regions to be determined by the standing committee; and
 - iv. Set spending targets to be included in the Department of Education's biennial budget.
 - b. The process for developing the plan should include significant public input, and the plan should be readily available on the Web.
 - c. The capital inventory should be updated, and the strategic plan should be revised every five years.
4. The implementation of EPS should include the tracking of disparities in spending patterns based on school size, and the law should be revised to keep schools of all sizes on track. "Cushions" and "Transition Adjustments" should not be used to protect small schools, but only should be used to move schools toward "100 percent of EPS," and to protect those schools in truly difficult-to-serve geographic areas.
5. The Legislature should create a Select Panel to recommend a "Sinclair Act" approach to encourage consolidation of school districts as enrollment continues to fall. This approach could use targeted (and perhaps mandatory) capital investment to create larger school administrative units, if not larger schools.

VII. METHODOLOGY

Regional Analysis

The Maine Department of Education reports student enrollment information in two forms. “Resident Enrollment” is based on where a student lives. “Attending Enrollment” is based on where a student is educated. The original source of both sets of data is the October 1 and April 1 student counts submitted by each SAU.

Because the regional analysis is focused on capital investment, “attending enrollment” data was used. Annual data was provided by the Management Information Systems Team at the Department of Education. Each school was assigned to the LMA where it was located. In several cases, this meant that schools within a single school district were in different LMAs. Every effort was made to capture changes in grade span or catchment area in a specific school and to reflect these changes in the 1995-2005 trend analysis.

“High School” means any school that includes grade 12, including K-12 schools. “Middle School” means any school that includes grade 8, but not K-8 schools. “Elementary School” means all other schools. Many school administrative units do not operate a K-12 program, and some do not operate any schools at all.

The “academies” were included in this analysis, even though they are private schools. The academies educate public-school students in a town or region under formal tuition arrangements (see, for example, Thornton Academy in Saco). They were included in this analysis because, without them, thousands of high school students would have been missing from the analysis. The academy model is also a useful template for possible regionalization: Thornton Academy, for example, is constructing a new, private middle school that will take responsibility for educating middle-school students from Saco, leaving that district with additional space for its elementary students.

Enrollment Projections

The Office of School Facilities uses enrollment projections done by the State Planning Office (SPO) during the application rating process. The most recent version of these projections was done in 2003. These figures have received attention lately because they have underestimated statewide enrollment by 2,000-6,000 pupils over the last three years. Resident student enrollment is a key determinant of state aid to education and, when the projections understate the actual enrollment, the Legislature budgets too little money for local districts. Although several alternative enrollment-projection methods were considered for use in this paper, in the end, the SPO numbers were used for three reasons: (1) they are the official numbers used in the construction process; (2) they break out elementary, middle, and high school students; and (3) they are constructed by municipality rather than by SAU.

For this analysis, the SPO projections were adjusted as follows: (1) each municipality was assigned to its LMA; (2) the percentage change from 2000 (an “actual,” not projected number in the SPO analysis) to 2015 was calculated for elementary, middle, and high school students in each

LMA; (3) this percentage change was applied to the “attending” enrollment in each LMA in 2000 (i.e., the same figures used in the regional analysis for the 1995-2005 period); and (4) the 2015 enrollment derived by this process was used in Tables 9, 10, and 11.

A few caveats are in order, regarding both the original SPO projections and the modification made for this analysis. First, the SPO projections generally overestimate elementary-school enrollment and underestimate middle- and high-school enrollment, especially in the near term. Second, while the projections underestimated enrollment by about 6,000 pupils in 2005—3 percent of the state’s total enrollment—there is no pattern to this underestimate. It is not, for example, just that new development in some communities is causing a steeper rise than expected or that the decline in other communities is not as sharp as predicted. Finally, while the adjusted projections are useful for comparison at the LMA level, they are less trustworthy for use with smaller units such as school districts and individual schools. The Department of Education reports that it will be asking the SPO to redo the projections this year.

The projected “design capacity”—the student enrollment—for the 62 pending school projects uses the actual 2005 enrollment in the affected schools. In some cases, the MDOE Office of School Facilities already has identified schools within an SAU that can be consolidated, building one school and closing two or more. The elementary schools in Brewer are an example of this approach. In those cases, the 2005 enrollment in the affected schools was combined.

Sprawl Analysis

Because many communities and school districts do not operate schools, October 1 Unit History for Resident Students was used. This information is available at:

<http://www.maine.gov/education/enroll/enr/facts.htm>.

This data is based on student grade levels, K-8 and secondary. Specific data for middle schools is not available. Each SAU was assigned to the LMA where the majority of its students live.

Construction Analysis

All data used in this report were provided by the Facilities Team at the Maine Department of Education. Because the staff on that team began work when new rules were adopted in 1999, the information dating from that time is complete and accurate. On the other hand, information before 1999 was not necessarily complete. When the design capacity for a school was not provided (1995-1999), the enrollment of the school in the year of construction was used. This number is always smaller than the actual design capacity would be.

“Completed Projects” means projects for which all information—project costs, design capacity, and square footage—was available. There were a few projects that have been approved by the state during previous approval cycles but that have not yet been fully “costed out.” These projects were treated as “pending,” just as the 62 projects on the 2004-05 list were treated.

The Department of Education does not collect, and could not provide, detailed information on “local only” construction projects, although all such projects are required to have the approval of the Commissioner. All the local-only projects appeared to be additions and renovations rather than new schools.

Regions and Service Centers

“Labor Market Area” uses the current list of 31 LMAs used by the Maine Department of Labor. These are available at: www.maine.gov/labor/mis/LaborMarketAreaDefinitionsChange.html. The “Isolated Communities” on the LMA list were assigned to specific regions: Durham to the Brunswick LMA; Monmouth to the Augusta LMA; and Acton and Newfield to the Sanford LMA.

“Service Center” uses the list of 63 centers defined in Chapter 220.