

APPENDIX I: SUMMARY OF METHODOLOGY

Through the *Rethinking the Cost of Small High Schools* project, Education Resource Strategies (ERS) hopes to shift the discussion from “how much” to “how organized” by understanding the way small high schools organize existing resources (people, time, and money) to support student achievement. This project’s goal is to provide those deeply engaged in the work of small high schools with a more complete understanding of the impact and importance of rethinking resource use. This section describes our research methodology including:

- selecting schools and collecting data,
- calculating comparable school-level costs, and
- comparing school-level costs.

Selecting the Schools and Collecting the Data

How were Leading Edge schools selected?

The small high schools included in this project, dubbed “Leading Edge Schools,” were primarily selected based on student performance outcomes (including assessment data, graduation rates, and attendance rates) and to reflect a range of small high school designs. Additional school selection criteria included:

- a maximum enrollment of 500 students;
- a minimum of three to four years of operation;
- a non-selective academic admissions process; and
- a broad spectrum of the demographic, political, legal, and organizational issues facing small high schools.

We began our search for schools with these characteristics by conducting conversations with educators and reformers across the country and generating summaries of schools that met our criteria. The summaries described the school contact information, grades, model, enrollment, demographics, resource allocation characteristics, school performance, and a rationale of whether to include the school in the study.

Identifying high-performing small schools that met all of the above criteria was a challenge. We discovered that many successful small high schools are new and have not yet reached full

capacity. Additionally, the student performance data indicates that some schools with the most unique models are not yet outperforming other schools in their local district. In choosing the nine schools, we balanced our criteria to include schools that possess a range of flexibility around their resource use, have a student population that is similar to the district average, and are representative of various small school models. The Bill & Melinda Gates Foundation and ERS jointly agreed on the nine schools to include in the research project.

For the purposes of contrasting spending and organization of Leading Edge Schools to large comprehensive high schools, we worked with local district leaders to select the highest-performing schools in each district that did not select students based on academic performance. Demographics of the comparison high schools were generally representative of the district overall.

FIGURE 1

Demographics of the Large Comprehensive Comparison High Schools

District	San Diego	Oakland, Calif.	Worcester, Mass.	Chicago*	Boston
Total Enrollment	1682	1734	1575	1672	1286
% Students with disabilities	8%	12%	17%	12%	18%
% English language learners	24%	28%	16%	10%	12%
% Free/Reduced Lunch	38%	66%	66%	90%	71%
% African American	5%	63%	13%	12%	42%
% Caucasian	62%	7%	46%	11%	6%
% Hispanic	24%	12%	33%	72%	46%
% Asian	9%	18%	8%	5%	6%
% proficient and above in English language arts	94%	53%	52%	43%	36%
% proficient and above in math	93%	60%	49%	31%	52%

*We used data from 2 comparison high schools in Chicago based on the recommendation from district leaders.

We compiled spending and staffing data for each comparison school using the most detailed information possible. We use a slightly different set of comparison data to understand differences in resource use. For critical diagnostic indicators that vary by local district, such as the length of student and teacher day, we used the local district average as our basis for comparison. However, other indicators, such as average teacher load, vary less across districts, so we created a prototype of a national urban comprehensive large high school. The national prototype combines national composite data with our own detailed research on how typical large schools organize resources.

What data did we collect?

There were two phases to the data collection process: the data request and the interviews.

The school data request was a comprehensive list of all relevant documents and databases we needed to understand the school context and analyze the school's use of resources across ERS' "Big 3" Resource Strategies: investing in teaching quality, using time strategically, and creating individual attention for students. The request included local union contracts, the school bell schedule, budget, human resource data, course schedules, and other items.

The second phase of the data collection process involved school interviews. The interview questions were structured around ERS' "Big 3" Resource Strategies. The questions were intended to capture the resource implications of the school design, information about the school's structure and organization, and any barriers or obstacles to achieving the design. ERS provided the school with questions in advance and the principal proposed an interview schedule with the staff that could best answer our questions. ERS met primarily with principals, chief operating officers, academic deans, and teacher focus groups.

The complete data request and interview protocol can be found at our website at www.educationresourcestrategies.org.

How was the data analyzed?

We began the analysis upon completion of the data collection process and the interviews. The ERS team created Excel templates with each school's data and then analyzed that data using a standard methodology.

How we coded the budget

Budget documents vary from district to district. Terminology is not used consistently across schools. Some school budgets provided more detail than others.

In order to compare costs between schools in different districts, we needed to compare apples to apples. This required us to categorize costs the same way in each budget. To do this, we reviewed each budget and coded each line item in several ways, including:

Use: instruction, instructional support and professional development, pupil services, leadership, operations and maintenance, business services, and other central costs

Student Type: special education (resource or self-contained), English language learners, general education

Some of the coding was straight-forward (e.g., custodian costs belong in operations and maintenance), while other coding was not. Over the years, we have developed and continuously refined our coding methodology so that even ambiguous cost items are consistently categorized. In addition, we developed principles of coding, one of which is that all support costs for a particular function stay with that function. For example, instead of categorizing all clerical costs as part of administration (leadership), we took the time to understand each clerical function and coded it where it actually belongs (e.g., clerical staff who work for managers of special programs would be coded under pupil services). We provide further explanation in the section **“Calculating Comparable School-Level Costs”** below.

Due to the narrow focus of this study on nine schools and our direct access for interviews with each school, we were able to be much more detailed than a typical district analysis when looking at how staff spend their time—going beyond the position title to the actual function. Data on how each staff member spends his/her time was determined using the teacher schedule, course schedule data, or information gleaned from interviews.

How we coded the course schedule data

To analyze how students at Leading Edge schools spend their time, we used course schedule data, the school bell schedule, graduation requirements, and school interviews. Using this combination of data, we analyzed student time in a more nuanced way than an analysis of only the course schedule data allows.

Course titles and content vary from school to school. To be sure we coded classes consistently, we used a coding structure that categorizes the focus of students’ time in one of the following five categories: core academics, non-core academics, academic support and enrichment, social/emotional support and enrichment, and maintenance. The use of multiple data around student time allowed us to be consistent and specific. For example, while the general purpose of advisories is typically social/emotional in nature, Life Academy uses half of its advisory periods to focus on literacy. Accordingly, these periods have been coded as core academic, while the remainder were coded as social/emotional support and enrichment.

Calculating Comparable School-Level Costs

We used specific methods to ensure that the data were accurate and comparable from school to school despite the fact that schools are located in different districts and operate under different management structures.

To ensure data were accurate, comparable, and reliable we:

- A. Captured complete school-level budgets including all funds, staff, and services that might be located in schools, but not reflected on the budget;

- B. Adjusted for differences in the student population; and
- C. Compared spending levels across different geographies.

A. Captured complete, comparable school-level budgets

To ensure apples-to-apples comparisons we used five basic steps:

1. Analyzed school and district budgets to be sure we included all staff and services benefitting schools.
2. Adjusted for rent and transportation costs.
3. Adjusted charter school budgets to accurately represent any payments to outside organizations such as charter management organizations (CMOs).
4. Adjusted salary data to include the cost of benefits.
5. Included all sources of funding, including private funding not on the school budget.

1. Analyzed budgets to be sure we included all staff and services benefitting schools.

When comparing budgets across schools, we needed to be sure we included comparable items for each school. Since districts report different spending items at the school level, simply comparing school-reported budgets would be misleading. Therefore, we needed to analyze the total budget for each school. The total budget includes not just the school-reported budget, but also district-budgeted expenses that benefit the school. This includes any activity that occurs directly at the school but is on the district budget as well as a portion of the district's overhead costs. This is a two-step process:

- a) first, we analyzed school-reported budgets¹;
- b) second, we analyzed district-budgeted spending.

a) School-Reported Budgets

ERS received the line-by-line annual operating budget of all funds (federal, state, local, and private) for each school. This document included all account codes, fund types, and associated full-time employees. We requested this data for both case study and comparison schools.²

To fully understand the budget, ERS conducted on-site interviews with school leaders to make sure we included only operating costs associated with running a particular school during that year. In addition, we asked a series of questions to understand exactly which positions and programs were funded and how much flexibility schools had in their use. We were able to do this for all the case study schools and for the comparison schools in districts where ERS had a prior relationship (Boston and Chicago). For example, we asked:

- Does your budget reflect any additional start-up or transition costs that you anticipate will not recur after the start-up/transition period?
- If your school shares a facility with another high school, describe any shared space and costs and the decision-making process.
- What positions are you required to have by the state, district, or accreditation agency?

b. District-budgeted Spending

To capture district-budgeted spending that benefits the school we took two steps: First, we identified services or activities that happened at the school level but were not on the school-reported budget—often because they are shared by other schools or deemed uncontrollable by the school. We call these “direct shared” services. For example, an itinerant speech therapist who spends time with students at two different schools or a different school each year may be funded on the district budget. We attempted to identify all such activities and assigned the spending to the appropriate schools.

The second component was the district overhead and other operations costs that benefit schools but are not usually located in them. These included business services, human resources, research and assessment, school supervision, and other central office costs. We had to include these numbers in our totals because charter schools must find ways to accomplish these functions if they deem them necessary. For example, charter schools devote resources to recruiting, payroll, and insurance costs that are typically reported in district budgets. We allocated these costs to schools as well so that, in the end, we had a total “fully allocated” budget for each school.

For this portion of the analysis, schools fall into one of two groups:

- i. schools where ERS had detailed district-level budget data (through previous work in the district), and
- ii. schools where ERS did not have detailed district-level budget data.

i. Schools where ERS had detailed district-level budget data

Through partnerships with Boston Public Schools and Chicago Public Schools, ERS conducted a detailed per-pupil analysis at the district level where we allocated all direct shared and district overhead dollars to schools. This work included numerous conversations with district leaders to ensure appropriate allocations. We analyzed each cost item individually to determine the most appropriate way to allocate it to schools. In cases where a particular service varied widely from school to school, we counted actual services and staff provided to each school. For example, Boston provides some schools with instructional coaches. These positions are budgeted centrally, but we took the extra step to find out how many coaches were at each school in order to attribute the cost to those schools. In other cases, a cost item might vary based on the number of staff or staff salaries. As we discuss below in #4, we also allocated benefits in this way. We took a similar approach when allocating district overhead costs such as business services, utilities, and

management of various programs. In the end, we allocated the entire operating budget, including the cost of the superintendent's office.

We used this approach for Boston Arts Academy and TechBoston Academy, as well as comparison schools in Boston and Chicago.

The remaining case study schools in Boston and Chicago are charter schools. These include Academy of the Pacific Rim, Perspectives Charter School, and Noble Street Charter High School. For these schools, we assigned no direct-shared dollars from the district, since charter schools must purchase these services directly. There were, however, management and overhead costs for these schools, but these expenses reside on the each school's reported budget.

ii. Schools where ERS did not have detailed district-level data

This study includes three case study schools located in districts where ERS did not have a prior relationship: Oakland, Calif., Worcester, Mass., and San Diego. As such, we did not have the full district budget detail. While we conducted interviews with school leaders at the case study schools to ask questions about funds or services they receive that are not on their school budget, we did not have the opportunity to conduct such interviews at the comparison high schools. As a result, we did not want to make assumptions about the district-budgeted spending at the comparison schools that might distort the comparisons between small and large schools located in the same district. Therefore, we developed a methodology to estimate district-budgeted spending at these schools that is the same across case study and comparison schools within a given district.

To do this, we began by analyzing the district overall budget. Through public data sources,³ we identified the components of the district budget (e.g., instruction, operations, pupil services, etc.). We compared these components, on a per pupil basis, to the components of the schools' budgets that we had received. The difference is the district-budgeted portion of the budget. This district-budgeted portion is assumed to be the same on a per pupil basis across all schools in a given district.⁴ We made this assumption so that our lack of information about direct shared services and district overhead at comparison high schools did not drive any of our conclusions. We test this assumption in a sensitivity analysis described below and summarized in Figure 2.

Though it would have been preferable to have had the exact spending data for the district-budgeted staff and services for comparison and case study schools, we are comfortable that this method did not significantly distort our findings. Without detailed analysis, it is impossible to know whether small schools receive equal treatment or extra resources from local districts. Roza and Miller conducted such a study in Seattle and Denver and discovered that small schools in Denver received fewer resources than larger schools and in Seattle it was the reverse.⁵ Since we concluded that case study schools usually spend more than large high schools in their districts, we made sure not to overestimate district services to the three small district schools in our sample where we used this method—MetWest, Life Academy, and University Park. Figure 2

shows that our findings would not change directionally if we overestimated by 25 percent or even 50 percent. This is highly unlikely because most of this cost goes for business services, utilities, and operations that are typically higher for small schools.

FIGURE 2

Ratio of Fully Allocated Spending per Pupil Small vs. Large High School*

School	Current Finding	If overestimated district budgeted school spending by 25%	If overestimated district budgeted school spending by 50%
University Park	1.1	1.1	1.0
MetWest	1.4	1.4	1.3
Life Academy	1.3	1.2	1.1

*Spending per general education pupil, including private funds

We used the methodology described above to estimate the direct shared expenditures at all case study and comparison schools in Oakland, Worcester, and San Diego except High Tech High. Since High Tech High is a charter school, we assigned \$0 in direct shared services since charter schools generally do not receive school-level services from the district. High Tech High does, of course, have management and overhead costs, but these reside on the school’s reported budget.

2. Adjusted for rent and transportation costs.

In this analysis we excluded rent costs. For district schools, rent is generally not on the school-reported budget and estimating the portion of debt which should be allocated in lieu of rent would introduce additional comparability challenges. In the case of charter schools, rent is on the budget, but to be consistent, we excluded it from the analysis.⁶

We also excluded student transportation costs from the analysis because student transportation varies significantly from district to district. The decision to provide or subsidize transportation is based on issues related to a particular city (size, desegregation policies, traffic patterns, availability of public transportation) and that are often beyond a district’s control to alter. Including these costs would only add complexity around an issue schools have little option to control.

3. Adjusted charter school budgets to accurately represent any payments to outside organizations, such as charter management organizations (CMOs).

There are four charter schools in the study, three of which operate under the umbrella of a CMO. Each school has different practices with regard to how they account for this spending, which we detail below.

Perspectives and Noble Street

With the goal of replicating the school models in the years following this study in SY05-06, both Perspectives Charter School and Noble Street Charter High School created CMOs to support the schools' development and work. At both schools, the CMO is responsible for driving the replication process while also serving the needs of the original Perspectives and Noble Street schools. This includes positions related to business services, development, and external affairs. Our analysis includes the portion of these CMO positions that are spent on issues related to the original school.

To account for the fact that there was only one school for each model in operation during SY05-06 school year, we calculated the portion of the CMOs' expenses that serve the original school campus. We did this by taking a ratio of the Leading Edge School's student enrollment as compared to the fully projected enrollment in the set of schools the CMO was planning to open. For example, since Perspectives planned to open three additional schools within the next two years, each with an enrollment of 500, we estimated the time spent on the original Perspectives to be that school's current enrollment (378) divided by total projected enrollment (378+500+500+500), or 20 percent. Thus 20 percent of the CMO-related positions were included as expenses for Perspectives in our analysis. We used a similar process for Noble Street. It is important to note that as Perspectives and Noble Street continue to replicate, each school will pay a smaller percentage of its budget to the CMO as the CMO allocates its services over a greater number of schools.

High Tech High

High Tech High Learning, a CMO, was created in 2000 both to support the replication of the High Tech High (HTH) model and to support the back office functions of its seven schools. The CMO has a staff of 27 people, including a CEO, chief operating officer (COO), a director of special education, and staff supporting instructional technology, facilities, business, development, site support, communications, and outreach functions. The CMO is supported by an eight percent management fee for each school. For HTH, this management fee totaled \$241,000 in SY05-06. We included this \$241,000 as part of the HTH budget. This percentage was based on industry standard, although according to the COO it could potentially be a little higher, because in 2005, the year of the study, the CMO is subsidized by private sources.

Academy of the Pacific Rim

Academy of the Pacific Rim is a stand-alone charter and does not have a CMO.

4. Adjusted salary data to include the cost of benefits.

To ensure consistency across districts and schools, we analyzed total staff costs. Total staff costs include salaries as well as benefits. For district schools in Worcester, Oakland, and San Diego, the school-reported budgets included benefits. In San Diego, benefits were linked to employee position groups. In Oakland and Worcester, benefits were not tied to particular employees. In

both of those districts, benefits were 32 percent of salaries, so we allocated benefit dollars to each employee at the rate of 32 percent.

In Boston and Chicago, benefits were on the district budget, but not on each school's budget. In these districts, we analyzed all categories of benefits to see how to best allocate them. We found that some benefits were allocated per full-time employee (e.g., health care benefits were \$6.7K per employee in Boston) and some benefits were allocated as a percent of salary (e.g., workers compensation in Chicago). We reviewed all types of benefits in these districts and allocated appropriately to each employee.

For the charter schools, benefits were included on the school-reported budgets. Just as in district schools in Worcester and Oakland, benefits were not tied to particular employees. For each charter school, we calculated benefits as a percent of salary, and then allocated them to each employee.

5. Included all sources of funding, including private funding not on the school budget.

Private funds are the funds a school receives that are above the amount provided by the district. In many of our charts and analyses, we show per pupil spending both including and excluding private funds. When we included private funds, we only did so if one or both of the following were true:

- Private funds support capital expenditures or create spending reserves but did not support ongoing operating expenditures.
- Private funds are in the form of an in-kind service.

B. Adjusted for differences in the student population

Simply dividing total school costs by enrollment can lead to a very misleading representation of per pupil cost. One of the biggest factors that can affect a school's budget is the percentage of its student population that has special needs. A school with a larger portion of its population requiring special services will have a larger budget than a school of similar size and fewer special needs students.

To account for this funding difference, we reviewed each school's budget and identified costs associated with special needs and costs associated with the general education population. Costs associated with special needs includes special education and programs for English language learners. Costs associated with the general education population are those received by all students⁷ and include regular classroom teachers, librarian, food services, nurse, etc. The relevant metric to compare across schools is the general education cost per pupil—the costs associated with general education services divided by total enrollment. By stripping out costs associated with special program services, we got a metric that adjusted for the mix of student population.

Take Life Academy as an example. The total budget from public funds was \$1.8M in SY2005-2006. By reviewing each line in the budget, we identified \$107K associated with special program costs and the remaining \$1.7M associated with general education programming. We allocated the \$1.7M to all students, yielding a general education per pupil cost of \$6.8K⁸.

C. Compared spending levels across different geographies

In order to compare spending across districts, we needed to consider two factors and adjust for both:

1. Schools are in different geographies which, naturally, have different costs of living.
2. Our data for Boston Public Schools was from SY05, whereas data for all other schools in the study was from SY06.

1. Adjustment for cost of living differences

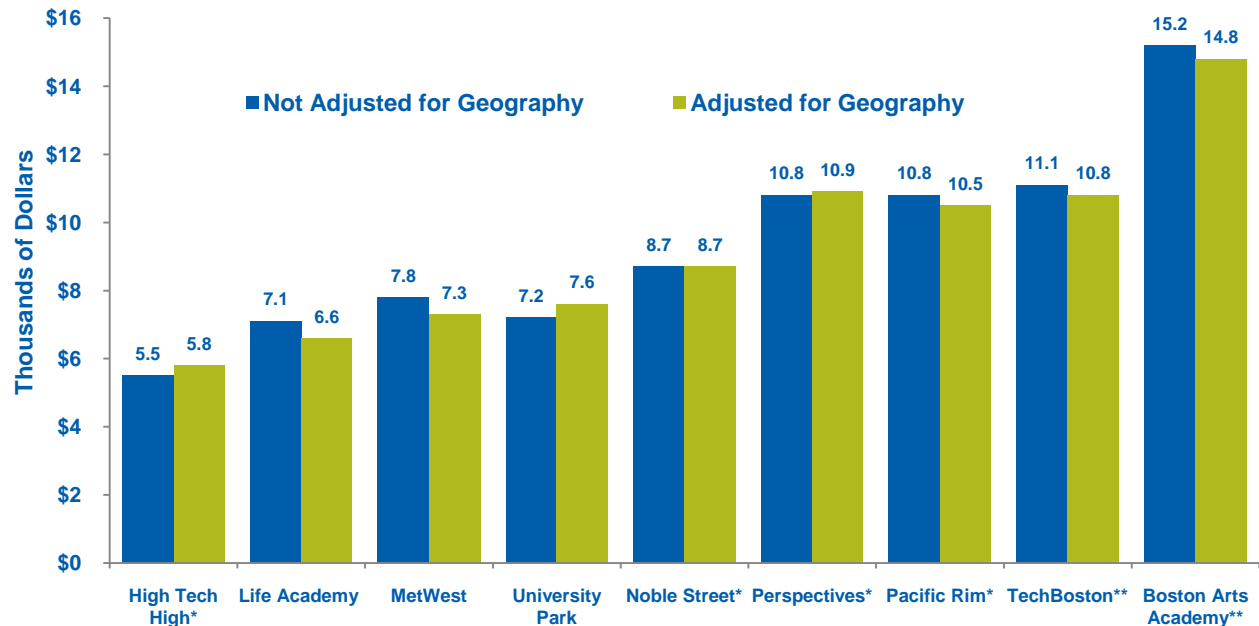
The “Strategic Designs” study includes schools from five different geographic areas. A geographic deflator was used to account for cost of living differences in the five areas. We chose to use the Comparable Wage Index (CWI)⁹ created by the National Center for Education Statistics (NCES). Of the indexes we considered, this was the most comprehensive and up to date. The CWI is a measure of the systematic, regional variations in the salaries of college graduates who are not educators. Researchers use it to adjust district-level finance data to make better comparisons across geographic areas. For example, Standard & Poor’s uses the CWI for its Web site www.schoolmatters.com.¹⁰

We calculated the average CWI for the five urban areas in our sample and then compared each metropolitan area’s index to the CWI average to create an index for our sample. For example, the city with the highest cost of living in our study is Oakland. When we compared Oakland’s CWI (1.43) to the average of the five areas (1.34), we found that Oakland is higher than the average of the five by a factor of 1.07. Similarly, San Diego has the lowest cost of living of our five cities (1.3). When compared to the average, we find that it is lower than the average by a factor of 0.95. We adjusted Oakland dollar figures down and San Diego figures up by the appropriate factors to get a true comparison for cost of living differences.

Since differences in cost of living did not change our findings significantly (see Figure 3), we used unadjusted numbers in the Strategic Designs report. We did this so readers who are familiar with per pupil spending in schools or districts in this study will be able to recognize and relate to the spending figures to which we referred.

FIGURE 3

Fully Allocated General Education \$/pupil (includes private funds)



*Charter school **Pilot school

Note: A pilot school in Boston is a district school that has significant waivers from both union contract and administrative policies.

2. Inflation adjustment to account for Boston Public Schools data SY05 vs. others SY06

Since the data we have for Boston Public Schools (BPS) was one school year older than the data we had for other districts in the study, we needed to adjust for one year's worth of inflation. Because the BPS spending per pupil rose by 5.1 percent from SY05 and SY06 we used 5 percent as an estimate of inflation and adjusted the BPS data accordingly.

Comparing School-Level Costs

There were several steps involved in transforming the budget data ERS collected from each school—each with its own structure, terminology and degree of detail—to create a uniform set of information that could be compared across schools. These steps allowed us to analyze, in great detail, spending patterns across the nine Leading edge schools and the large comparison high schools. As we coded each line in the budgets, according to the methodology previously outlined, we identified the portion spent on various school functions, including instruction, instructional support and professional development, pupil services, leadership, operations and maintenance, business services, and governance. Using our methodology, we can be sure our comparisons are consistent. For example, when we looked at instructional support and

professional development spending in one school, we knew that calculation included the same services as instructional support and professional development spending in another school. The same holds true for all categories we analyzed.

Figure 4 shows each of the Leading Edge high schools' per-pupil spending. These calculations are the basis for our discussion of leadership and pupil services in the *Strategic Designs* report on pages 68-69 and are referenced in Figure 26.

FIGURE 4

*Fully Allocated General Education \$/pupil including private funds
(in thousands of dollars)*

District	San Diego	Oakland		Worcester	Chicago		Boston		
School	High Tech HS	Life Academy of Health and Bioscience	MetWest HS	University Park Campus School	Noble Street Charter HS	Perspectives Charter School	Academy of the Pacific Rim	Tech-Boston Academy	Boston Arts Academy
Governance	charter	district	district	district	charter	charter	charter	pilot	pilot
School-Level Instruction	\$3.1	\$3.4	\$3.6	\$4.2	\$4.4	\$4.8	\$5.8	\$5.5	\$8.5
School-Level ISPD*	<\$0.1	\$0.2	\$0.2	\$0.2	\$0.2	\$0.9	\$0.1	\$0.6	\$0.6
School Level Pupil Services	\$0.3	\$0.3	\$0.1	\$0.5	\$0.8	\$1.1	\$1.4	\$0.9	\$0.8
School Level Leadership	\$0.7	\$1.0	\$1.5	\$0.6	\$0.6	\$1.1	\$1.6	\$1.5	\$0.9
Operations and Maintenance	\$0.7	\$1.4	\$1.6	\$0.8	\$1.5	\$1.6	\$0.7	\$1.5	\$1.7
Business Services and Other Central Services	\$0.7	\$0.8	\$0.8	\$0.9	\$1.2	\$1.3	\$1.2	\$1.1	\$2.7
Total Fully Allocated Gen Ed \$/pupil*	\$5.5K	\$7.1K	\$7.8K	\$7.2K	\$8.7K	\$10.8K	\$10.8K	\$11.1K	\$15.2K

ISPD = Instructional support and professional development

*These figures are not adjusted for geography

We also show these figures as a percent of school spending, allowing for an easier comparison across schools (see Figure 5). These figures are also referenced in the *Strategic Designs* report in Figure 26 on page 69.

FIGURE 5*Percent of Fully Allocated Budget (including private funds)*

District	San Diego	Oakland		Worcester	Chicago		Boston		
School	High Tech HS	Life Academy of Health and Bioscience	MetWest HS	University Park Campus School	Noble Street Charter HS	Perspectives Charter School	Academy of the Pacific Rim	Tech-Boston Academy	Boston Arts Academy
Governance	charter	district	district	district	charter	charter	charter	pilot	pilot
School-Level Instruction	57%	48%	46%	58%	51%	45%	54%	50%	56%
School-Level ISPD*	1%	2%	3%	2%	2%	8%	1%	5%	4%
School-Level Pupil Services	5%	4%	1%	7%	9%	11%	13%	8%	6%
School-Level Leadership	13%	14%	19%	8%	7%	10%	15%	14%	6%
Operations and Maintenance	12%	20%	20%	11%	17%	15%	6%	14%	11%
Business Services and Other Central Services	13%	12%	11%	14%	14%	12%	11%	10%	18%
Total Fully Allocated Gen Ed \$/pupil*	\$5.5K	\$7.1K	\$7.8K	\$7.2K	\$8.7K	\$10.8K	\$10.8K	\$11.1K	\$15.2K

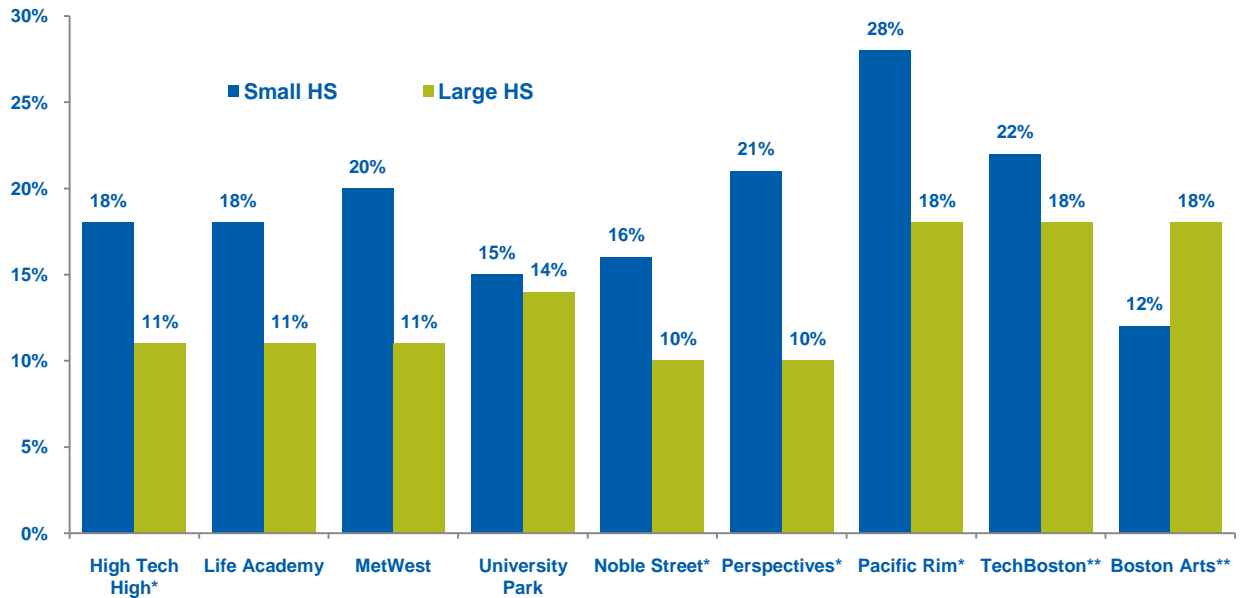
ISPD = Instructional support and professional development

*These figures are not adjusted for geography

To compare spending patterns at Leading Edge high schools to the comparison large high schools, we conducted the same analysis for large high schools. As a result, we found that almost all of the Leading Edge high schools in our study spent more on leadership and pupil support than the large comparison high schools (see Figure 6).

FIGURE 6

School-based Leadership and Pupil Services as % of Fully Allocated General Education \$/pupil



<i>Ratio of Small High Schools to Large High Schools</i>	1.6	1.7	1.8	1.1	1.6	2.1	1.6	1.2	0.6
<i>Fully allocated Gen Ed \$/Pupil (not adjusted for geography)</i>	\$5.5	\$7.1	\$7.8	\$7.2	\$8.7	\$10.8	\$10.8	\$11.1	\$15.2

*Charter school **Pilot school

Conclusion

This appendix describes the research methodology of how schools were selected and how data was collected and analyzed in the *Rethinking the Cost of Small High Schools* project. ERS spent hundreds of hours interviewing school leaders, reviewing school documents, and working with the data to ensure accurate, reliable, and consistent comparisons across schools.

Endnotes

¹ Some of our case study schools also include middle grades six through eight. Though ERS analyzed all expenditures, we carefully separated the costs associated with grades nine through 12, allocating portions of administration and other fixed costs

² Comparison schools are the highest performing, non-exam schools in the district that were selected to provide a comparison to the Leading Edge schools' per pupil cost. Each district process varied slightly. In Boston and Chicago, our partnerships allowed joint identification of the comparison school and access to the detailed coded budgets. In Oakland, Calif., Worcester, Mass., and San Diego, Calif. (districts with whom ERS did not have a prior relationship) we met with district leaders to seek feedback on which comparison school to use and obtain school budgets.

³ Standard & Poor's SchoolMatters.com, National Center for Education Statistics (NCES)

⁴ For example, for purposes of this analysis, we assumed the same district-budgeted per pupil spending at Met West, Life Academy, and Oakland Tech—all schools in Oakland.

⁵ Roza, M., Swartz, C., & Miller, L. (2005). *Lessons on Assessing the Costs of Small High Schools: Evidence from Seattle and Denver*. Seattle, WA: Center on Reinventing Public Education.

⁶ For discussion focusing specifically on the costs of facilities and the challenges of quantifying them see Thomas B. Fordham Institute. (August 2005) *Charter School Funding: Inequity's Next Frontier*. Monograph.

⁷ To be precise, general education instruction services are received by all students except those in self-contained classrooms. All other general education services are received by all students. In this study, this caveat applies to the large, comprehensive high schools only, as no case study schools had any self-contained students, except High Tech High which has just three self-contained students.

⁸ Not geographically adjusted

⁹ The CWI was developed by Lori L. Taylor and William J. Fowler, Jr. with support from NCES.

¹⁰ As explained on the Web site, "Standard and Poor's applies the (NCES) Comparable Wage Index (CWI) to improve the comparability of spending levels between districts."