



BUILDING AN INFRASTRUCTURE FOR QUALITY

An Inventory of Early Childhood Education and Out-of-School Time Facilities in Massachusetts

EXECUTIVE SUMMARY
2011

Children's Investment Fund was established in 1991 to increase the supply and quality of early childhood education (ECE) and out-of-school time (OST) facilities for children from low- and moderate-income families in Massachusetts. The Fund's mission is to ensure that children spend their days in physical environments that support healthy development and learning. The Fund provides loan and grant financing, technical assistance, and training to nonprofit ECE and OST organizations planning facilities projects.

The Children's Investment Fund is affiliated with the Community Economic Development Assistance Corporation (CEDAC). CEDAC is a public-private, community development finance agency that provides financial and technical assistance to nonprofit organizations involved in affordable housing development and preservation and to agencies that promote workforce development. The Commonwealth of Massachusetts created CEDAC in 1978 to serve as a resource for nonprofit organizations engaged in community economic development.

The Research Team and Methodology: Wellesley Centers for Women, an organization known for its research and policy work on ECE and OST quality, and On-Site Insight, an engineering firm known for its capital needs assessments, conducted the research and data analysis. The research team worked with Children's Investment Fund to develop evidence-based Program Facility Standards and the research methodology. The Facilities Inventory examined existing conditions in a random sample of 182 licensed sites across Massachusetts to provide a statewide data report and a separate Boston report. The complete Program Facilities Standards and the two data reports are on the Children's Investment Fund website at www.cccif.org. The Facilities Inventory sample was drawn from licensed nonprofit ECE and OST centers in communities with a high proportion of low-income children. All programs in the sample serve children whose families receive public tuition subsidies. On-Site Insight made the field visits to assess site conditions. Equipped with a tablet computer and instruments for collecting data on a variety of physical conditions, researchers spent approximately half a day at each of the 182 sites.

INTRODUCTION

The physical environment is a dimension of quality that is often overlooked, yet it is the setting where learning takes place, and it has a measurable impact on program quality. The Children's Investment Fund commissioned the Facilities Inventory, the first-ever comprehensive review of early childhood education (ECE) and out-of-school-time (OST) facilities, to determine whether physical learning environments support policymakers' and educators' ambitious educational goals for children at risk, or whether some spaces might actually interfere with successful teaching and learning.

The Importance of Quality: Early experiences shape how a child's brain develops. Society realizes a substantial return on investment from high quality early childhood education (ECE). High-quality out-of-school-time (OST) programs help build academic and life skills, and play a crucial role in reducing the summer learning loss experienced by many low-income children. Investment in human capital and high quality early child development programs are key ingredients to economic and community development. This small business sector is an essential part of the socio-economic infrastructure for employers and working parents in the Commonwealth and an economic driver in its own right.

Economics of the Sector: The choice of space, the modest level of renovations made upon occupancy, and difficulty budgeting and paying for repairs are indicative of tight operating margins in ECE and OST programs, especially in those that serve children on subsidy. Between 70 and 80 percent of ECE program revenues and 60 percent of OST revenues in programs in this study came from government sources, but publicly funded tuition-assistance rates only cover 52 to 58 percent of the market rate for services in Boston. A similar rate structure is found across the state.

THE FINDINGS FROM THE FACILITIES INVENTORY

The Positive Findings: The research team evaluated each site using three standards. The existing regulations for Massachusetts formed the Regulatory Standards. ECE and OST national accreditation, the Massachusetts Quality Rating and Improvement System (QRIS) standards, and other published quality criteria formed the Professional Standards. The U.S. Department of Defense Unified Facilities Criteria and other national standards served as the basis for the Best Practice Standards. The research team assessed each building and found:

- Nearly all sites met 80 percent of the 76 Regulatory Standards
- Nearly all sites met 50 percent of the 60 Professional Standards
- Nearly all sites met 50 percent of the 132 Best Practice Standards.

Despite budget constraints, most programs did their best to maintain physical environments that met the state standards for safety and health. All programs provided adequate classroom space to accommodate varied activities and children playing individually or in small or large groups. This finding shows the positive impact of Massachusetts QRIS and accreditation quality improvement efforts.

Areas for Improvement

Building Code Compliance: The review focused on code requirements that are mandatory for existing buildings that house an ECE or OST program. The team found that 9 to 26 percent of the program sites did not meet building code requirements for the condition of one or more of the following areas: exterior walls, roof, floors, or windows.

Health and Safety

Potential Hazards: Unexpectedly, the study uncovered number of potential hazards which warrant special attention because of the possibility of injury. All are relatively easy to fix and do not require substantial capital investments. Examples are:

- 33 percent of centers statewide and 50 percent of centers in Boston had entrapment hazards in play equipment and structures.
- 26 percent of centers statewide and 18 percent of Boston centers did not have screens in windows used for ventilation.

Indoor Air Quality: Children breathe a greater volume of air in proportion to their body weight than adults do, so the potential impact of poor air quality is more serious for young children. It contributes to absenteeism, illness, and increased incidence of asthma.

- **Finding:** 22 percent of centers statewide and 16 percent of centers in Boston have carbon dioxide levels that exceed 700 parts per million (ppm).
- **Finding:** 36 percent of centers statewide and 31 percent of centers in Boston lack mechanical ventilation systems over diapering areas and toilets.

Sinks and Toilets: The location of classroom sinks and children's bathrooms has a measurable impact on infection control, children's hygiene, and independence, as well as on teachers' ability to be present and actively participating in classroom activities.

- **Finding:** Nearly 70 percent of sites statewide and in Boston lack classroom sinks.
- **Finding:** While most ECE program sites have children's bathrooms located within fifty feet of the classroom space, 38 percent of ECE programs statewide and 62 percent in Boston did not meet the Best Practice Standard of locating bathrooms in an area directly accessible from the classroom.

Physical Activity and Childhood Obesity: There is growing concern about the increase in the number of overweight children, and related health risks, including Type 2 diabetes, high blood pressure, and asthma.

- **Finding:** 54 percent of ECE programs statewide and 31 percent in Boston lack indoor gross motor space and equipment.
- **Finding:** 31 percent of OST sites statewide and 43 percent in Boston lack separate indoor space for sports or active games.
- **Finding:** 82 percent of ECE sites and 61 percent of OST sites statewide have their own outdoor play space. In Boston, 37 percent have their own outdoor space and 20 percent share the outdoor space with another program. Program sites without outdoor space use public playgrounds, which were not visited as part of the study.
- **Finding:** 46 percent of OST programs statewide and 23 percent in Boston do not have playing fields for sports and games; 34 percent statewide and 28 percent in Boston have no hard-surface play area.

The Learning Environment

Key elements of a well designed environment for children include safety features, age-appropriate challenges, and a carefully planned layout with separate activity areas. Teachers need space with

convenient access to storage and resources, adult seating, and other features that support their work in the classroom.

Classroom Features: There should be a proper fit in the organization of the space and the activities that take place therein: a quiet, comfortable space for reading; separate spaces for noisy and quiet activities; and spaces where children can play uninterrupted or take breaks from the larger group. There should be furnishings and fixtures appropriate to the child's physical size and development, and sufficient space to avoid crowding. Research indicates that children exhibit problem behaviors, spend less time in group activities, and have trouble concentrating in crowded conditions. These factors create classroom management challenges and may make more densely occupied classrooms less rewarding places for teachers to work.

- **Finding:** Nearly every site for both ECE and OST programs meet the Regulatory and Professional Standards of thirty-five square feet per child of classroom space. Given the tight operating margins, programs serving a higher proportion of low and moderate income children are rarely able to exceed the thirty-five square feet per child minimum required for a state license.
- **Finding:** Over 90 percent of classroom environments in ECE programs meet most Regulatory and Professional Standards for room arrangement, display, and furnishings.
- **Finding:** 67 percent of OST sites did not meet the Professional Standard of forty-five square feet per child for enrichment activities, such as art, woodworking, or science activities; 40 percent did not have computer labs or access to technology.

Accessibility: The physical environment is often a significant barrier to full participation in education for children with special needs. If children with special needs cannot enroll in ECE or OST programs, they cannot benefit from the learning, development, and enrichment opportunities that these programs offer.

- **Finding:** Only one program site in the study is fully accessible, and it was constructed a year before the Facilities Inventory was conducted.

Acoustics: Noisy conditions are stressful for all occupants of the space and interfere with language development and reading skills and children's concentration. School age children need quiet spaces for homework and small group activities.

- **Finding:** 26 percent of centers lack acoustical tile or ceiling treatment.

Daylight and Artificial Lighting: Classrooms with ample daylight, supplemented by good artificial lighting, affect academic performance, comfort, and behavior.

- **Finding:** 20 percent of ECE and OST centers statewide and 21 percent in Boston have at least one classroom without exterior windows. The data for OST programs showed that one third of sites have one or more classrooms without windows.

Thermal Comfort: There is considerable research on the effects of temperature on concentration and learning; when children are too hot or too cold, they can't concentrate and may resist participating in activities.

- **Finding:** 34 percent of sites statewide do not comply with national thermal comfort standards of 68 to 78 degrees F. in the winter and 74 to 82 degrees F. in the summer.

Adult Work Space

Teachers working in good spaces feel better about their work and are more engaged and positive with children. Despite recent policy efforts related to upgrading teacher education and providing better compensation, little attention has been paid to the work environments and working conditions for teachers and administrators in ECE and OST programs.

- **Finding:** 18 percent of ECE programs statewide and 26 percent in Boston lack space for administrative work, planning, preparation, or meetings. It is worse for OST programs — 30 percent statewide and 53 percent in Boston lack adult workspace.
- **Finding:** 33 percent of sites have no secure place for staff to store personal belongings.
- **Finding:** 65 percent of sites statewide and 50 percent in Boston lack appropriate technology for teachers.

CAPITAL RESOURCE NEEDS

Cost Estimates: On-Site Insight used its cost-estimating protocol to calculate an average price to meet each program standard.

Table 4: Cost to Meet Facility Standards

Standards	Number of Sites That Met the Standards	Average Cost per Site to Meet the Standard
Accessibility	1	\$68,000
Regulatory	7	\$18,000
Professional	3	\$90,000
Best Practice	0	\$154,000*

**Note that this estimate is low. Please see discussion on Cost to Meet Best Practice Standards in the full “Building an Infrastructure for Quality Report” at www.cccif.org*

Capital Resource Needs and Models: To the extent the Facilities Inventory found deficiencies in the state’s ECE and OST facilities, it should not be construed as negligence or lack of interest on the part of program operators. The problem lies in the revenue model and the inability to generate enough revenue to adequately address capital needs.

In reality, there are three capital gaps: repair and replacement, capital improvements, and new facilities. There are several promising models to address these gaps.

- **Capital Grants:** Pennsylvania made available \$30 million in capital grants to construct or renovate 55 child care facilities. The centers had to match at least 20 percent of the cost.
- **Debt Service Support:** Connecticut has the most ambitious early childhood facilities development program. The state helps providers raise tax-exempt bond financing with the promise to pay an average of 80 percent of the debt service for each project. To fulfill this promise, originally the state appropriated \$2.5 million annually for the thirty year term of the bond; it has since increased the level to \$4 million per year.
- **Loans:** Because of the revenue constraints on OST and ECE programs, their ability to support debt and or meet conventional bank underwriting standards is very limited. Children’s Investment Fund and similar organizations in other states provide loans with more flexible terms, specifically designed for this small business sector.
- **Public-Private Partnerships:** The Children’s Investment Fund has raised \$29 million from foundations, corporations, and government sources to provide training, technical support,

and grants and loans to address the capital needs of ECE and OST programs across Massachusetts. Since 2003, the City of Philadelphia and United Way, the PA Department of Community and Economic Development, and four foundations have invested nearly \$11.7 million in repairs and improvements to child care facilities.

It is easy to focus exclusively on the shortage of capital. But it is important to remember that, for the most part, OST and ECE programs are small organizations without the time or experience to plan and manage capital improvements. Special purpose intermediaries, like the Children's Investment Fund, exist in 22 states and provide technical assistance during project planning and construction management, including predevelopment loans to cover the cost of architects and engineers who prepare the scope of work and oversee the project. Any capital funding should include resources to cover these costs to ensure the efficient and effective use of scarce capital dollars.

Child Development, Economic Development and Community Development: Building an infrastructure for quality is a critical piece of the Commonwealth's commitment to high quality education. It will have an impact on employment. Making repairs and capital improvements to program sites will require skilled workers in communities across the state. It is critical for families. Parents need high quality care and education for their children so they can maintain employment or pursue job training, secure in the knowledge that their children are getting what they need. Children need programs that support their optimal development, and in the future, those children will repay the investment through a lifetime of productivity and responsible citizenship.

RECOMMENDATIONS

1. **Address hazardous conditions:** Develop a pool of funding for programs to address hazards identified and other repairs or minor improvements to comply with licensing.
2. **Build partnerships with utility companies:** Target some of public utility subsidies for energy saving improvements to meet the needs of the ECE and OST small business sector -- not only will the investments improve the quality and functionality of these facilities, they should also yield much needed operating savings.
3. **Leverage community development resources to build or improve ECE or OST sites:** The community development system should realign its capital sources and investment strategies by using existing capital funding streams and regulatory tools to stimulate improvements in the supply and quality of ECE and OST services in lower-income communities.
4. **Leverage the focus on high quality ECE through the Race to the Top Early Learning Challenge competition to draw attention to the state of infrastructure.** There is an opportunity to demonstrate the measurable impact that a well-designed learning environment and good work environment will have on teacher effectiveness and children's educational outcomes.
5. **Develop a public funding mechanism** that will permit low interest, long term loans for major repairs, renovations and/or new construction of ECE and OST facilities to serve low income children. To build an infrastructure for quality, there must an affordable and dependable capital financing source for ECE and OST programs in lower-income communities.



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