



6. Capital Projects

FACILITY GOALS

The foundational document for all of FCPS' planning efforts is the BOE's Strategic Plan outlined in [Chapter 1](#). This EFMP provides a road map for capital projects that will allow FCPS to meet the aspirational goals found in the Strategic Plan and establishes a framework for FCPS to make decisions, develop policy, and select projects.

In addition, the EFMP strives to meet a goal of operating at 90% of capacity, system-wide, at the elementary, middle and high school levels within 10 years, while balancing the need to maintain and operate all buildings as efficiently as possible. The capital projects proposed in the EFMP are intended to meet capacity goals and provide a schedule for renewal or modernization of aging buildings.

Project Selection Criteria

Based on the ongoing and long-term evaluations discussed in [Chapter 4](#), FCPS proposes major capital projects. The types of projects are outlined in the following sections. Project selection criteria include:

- Physical condition of existing buildings and systems
- Current and projected enrollments of existing schools
- Location of the population to be served
- Current and future housing development
- Current and planned educational programs as defined by the educational specifications
- Available capacity in existing schools
- Current school size and maximum size criteria for elementary, middle and high schools
- Potential attendance area changes to reduce overcrowding
- Need for changes to the school environment
- Improvements to health and safety
- Reduction of barriers for those with disabilities,

State-funded projects are priority ranked by Interagency Commission on School Construction (IAC) staff in accordance with criteria established by the IAC. All state projects are evaluated based on past and projected enrollments for the school in question as well as adjacent schools. Projects that add capacity may not be recommended for planning approval or construction funding if adequate capacity is available at adjacent schools. Although the County establishes priorities for its local capital program, the evaluation of these priorities with respect to other projects in the state and the limited state funds available is a responsibility of the IAC. The IAC may recommend that projects be deferred or modified so that more critically needed projects in other counties may proceed. [Appendix E](#) contains the state's project priority classifications.

Sustainability

FCPS incorporates principles of sustainability in existing and new school buildings. A coordinator of energy and utilities monitors energy bills and works with other maintenance staff to reduce energy and water usage. All new school buildings are built to the Silver level of the US Green Building Council’s Leadership in Energy and Environmental Design (LEED) standard, although certification is not required. Several schools have pursued additional sustainability initiatives such as composting, installation of additional bike racks, and educational campaigns to increase walking and biking to school. Led by administrators, students, and families, seven FCPS schools have achieved the Maryland Green School certification from the Maryland Association for Environmental and Outdoor Education.

Efficiency and Flexibility

As planning and design for schools begins, FCPS strives to make buildings as flexible as possible to allow for educational programming and capacity need changes over time. The current approved educational specifications provide centralized office and intervention spaces in rooms the size of a typical classroom so that classroom groupings can be adjusted to meet the capacity needs of each grade cohort. This also allows the school to add additional classes inside the building if enrollment pressure grows.

Efficiency is also a priority. Smaller spaces are distributed throughout the building to allow for pull-out interventions, professional development, small-group work, meetings, or material storage as needed. The goal is for these multi-purpose spaces to be used in multiple ways throughout the week.

PROJECT TYPES

FCPS uses the project selection criteria to identify and prioritize major capital projects. Depending on the needs identified, FCPS may pursue new capacity, modernization, limited renovation, or emergency systemic projects. Decisions about which schools will be considered for a modernization, renovation, or replacement are based in part on the age of the building and the FCI as discussed in [Chapter 4](#). Table 6A shows FCPS’ desired timeline for building renewal and modernization.

Table 6A: FCPS Goals for Building Renewal and Modernization

0-30 years	30-35 years	35-60 years	60+ years
Preventative maintenance and emergency systemic repairs	Renewal (Limited Renovation)	Preventative maintenance and emergency systemic repairs	Modernization (major renovation or replacement and building returns to “year 0”)

All of the projects listed in this plan are consistent with the recommendations found in the county and municipal comprehensive plans. All are located within residential growth areas and/or priority funding areas to serve existing or emerging communities. Specific details on the projects identified can be found in [Chapter 7](#).

New Capacity Projects

New capacity projects are either new buildings constructed on future school sites, a replacement building constructed on the same site at a larger size (if the existing building does not exceed the BOE’s policy for size) or by construction of an addition. New capacity projects have the primary goal of reducing overcrowding. Overcrowded schools impact students, teachers, and administrators in the following ways:

- Limits ability to schedule time for specials, including art, music, and physical education
- Results in inadequate space for student support services including media center instruction
- Requires additional lunch shifts in overcrowded cafeterias

- Creates stress due to congestion in the hallways and classrooms
- Limits opportunities for new instructional program initiatives

Overcrowded schools create a dependency on relocatable classrooms to provide adequate instructional space. While relocatable classrooms may be necessary to temporarily provide needed seats, they should not be relied on to solve capacity issues. Relocatable classrooms are neither an effective nor appropriate long-term solution.

Once a new construction project receives state planning approval, it typically takes three years to design and construct an elementary or middle school and four for a high school. Additions may be designed and constructed more quickly depending on the extent of the work and the delivery method selected.

Modernization

Modernization refers to the design, construction and equipping of an aging school through which it is brought up to current educational standards and through which all of its systems are renewed and updated to meet FCPS, county, state and federal codes and requirements. Modernizations may be accompanied by additions or redesign of existing spaces to meet educational program requirements. Modernizations begin with a feasibility study to determine whether the building should be renovated or replaced. A modernized building is intended to function as if it were a new building even if portions of the original structure remains. As such, a modernized building is ineligible for additional state capital funding for 16 years following project completion. FCPS will consider modernization projects for buildings that are 60 years old or older.

Limited Renovations

Some buildings need major system replacements but do not require a complete modernization. FCPS added “Limited Renovation” projects in the 2019 EFMP to provide a mid-life upgrade to school buildings. Under the state funding definition, at least five major building systems must be improved and educational improvements may also be completed. Performing limited renovations will enable FCPS to upgrade building systems at these facilities, and potentially right-size educational spaces to gain added capacity, increase building utilization, and efficiency. Upgraded systems will result in decreased energy and operating costs, providing savings to FCPS over the long term. FCPS will consider limited renovation projects for buildings around 30 years old with high FCI scores.

Limited Renovation candidates are identified in the Comprehensive Maintenance Plan that is updated and submitted to the BOE for approval every year. The Capital Programs Department will continue to coordinate with the Maintenance and Operations Department to identify the next schools in need of limited renovations and include those schools in future EFMP updates.

Systemic Projects

With the addition of limited renovation projects, the request for funds for specific systemic projects will be limited to systems or equipment under imminent threat of failure in buildings outside of the age-windows for limited renovation or modernization. The CIP request for systemic projects will include a contingency amount to help with emergency replacement needs for each fiscal year. Other systemic improvements could be in response to state/federal mandates. A targeted approach to systemic projects will help free up funds that could be used towards limited renovation projects.

FCPS will continue to monitor the status of existing buildings utilizing the computerized maintenance management software and periodic inspections by staff members. Required systemic projects will be revisited, and updated each year, along with the requested amount for contingency funds to help with emergency building system needs.

DELIVERY METHODS

In the construction industry, different types of project delivery methods are available for the owners to help mitigate risks associated with major construction projects in terms of cost, schedule, quality, and safety. FCPS has, in the past, used the traditional design-bid-build method to complete all major capital projects. In this type of project delivery, the design is completed, and permit is obtained before a general contractor is selected based on low bid. While this method has been used for centuries, it does expose the owner of the project to risks during the construction phase due to errors and omissions in the design documents, or unforeseen conditions. More recently, FCPS has implemented Design-Build, and Construction Manager at Risk (CMaR) as delivery methods for major construction projects. These methods are described more in detail below.

CM Agency

FCPS has been utilizing Construction Manager Agency (CMA) methods for the past 15 years to help mitigate some of the risks associated with the traditional design-bid-build method. The CMA model is similar to the traditional design-bid-build method, as the work is completed by low bid prime contractors after the design is completed. To minimize risks associated with quality of design documents, site logistics, and other schedule related risks, a construction management firm is hired at the beginning of the project. The CMA works as an agent for FCPS and reviews the design drawings as they progress to provide their input, which is incorporated into the drawing revisions. The CMA helps through the bidding process and provides on-site management during construction to ensure safety, and quality while managing the project schedule.

CM at Risk

Construction Manager at Risk (CMaR) is a relatively newer project delivery method. This method is allowed by the IAC (with prior approval), and several LEAs in Maryland use this method to complete major construction and renovation projects. The Construction Manager (CMaR) is hired early in the project, separately from the design consultant. As the drawings are developed by the project design team through the various stages of design (Schematic, Design Development, Permit, and Construction), the CMaR is responsible to review the documents at each stage, and develop plans for site logistics and project schedule. Once the design documents are completed, the CMaR is responsible for bidding and providing the owner with a Guaranteed Maximum Price (GMP). Once a GMP is established, and agreed between the owner and the CMaR, the CMaR is responsible for completing the construction of the project for the agreed-upon GMP amount. Unless the scope of the project is changed by the owner, the CMaR is not entitled to any change orders on the project. This method allows FCPS to transfer the risk associated with market volatility, and missing or incomplete information on the design documents over to the CMaR prior to starting construction.

Design-Build

The Design-Build method allows the building owner to hire one vendor to provide both design and construction services. FCPS utilized a modified design-build method to complete the addition at Oakdale MS. Under this method, FCPS is able to hire one vendor that will be responsible for both the design, and construction phases of the project. Once the design is completed, the design builder is responsible for bidding the design documents, and presenting the owner with a GMP. Once the GMP is agreed upon, the Design-Builder is responsible for completing the project on time and on budget. The method allowed FCPS to save time by combining two procurement processes (design, and construction manager). It also saves time during the design process, as the Design-Builder is able to provide a GMP before the design drawings are 100% complete. This is also beneficial for FCPS as risks associated with errors or omissions in the design, schedule challenges, market volatility, logistics, and unforeseen conditions are transferred to the design-builder when the GMP is approved and before construction begins.