



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 by completing the capital projects proposed in the EFMP. The systemic improvement program is designed to help FCPS operate all major building systems efficiently.

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, at the school in question and at adjacent or nearby 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. The FCPS Energy and Recycling Coordinator 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 no longer required. Several schools have pursued additional sustainability initiatives such as solar panels, composting, installation of bike racks, and educational campaigns to increase walking and biking to school. Led by administrators, students and families, six 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 elementary school 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 classes inside the building if enrollment pressure grows.

Efficiency is a priority for FCPS. 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 systemic projects. 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 projects identified are in [Chapter 7](#).

New Capacity Projects

Many new capacity projects are new buildings constructed on future school sites. Additional capacity can also be added at an existing school through a replacement building 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 portable classrooms to provide adequate instructional space. While portable classrooms may be necessary to temporarily provide needed seats, they should not be relied on to solve capacity issues. Portable classrooms are neither an effective nor appropriate long-term solution.

Once a new construction project receives state planning approval, it typically takes about 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 (see following section).

Modernization

“Modernization” refers to the design, construction and equipping process through which an aging school facility is brought up to current educational standards and its systems are renewed and updated to meet school system, 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. Decisions about which school will be considered for a modernization, renovation, or replacement are based in part on the FCI as discussed in [Chapter 4](#).

Limited Renovations

FCPS added “Limited Renovation” projects in the 2019 EFMP to investigate the feasibility of renovating aging schools that are not in need of additional capacity based on projected enrollment. The schools considered either have a current FCI value of 30 or more; or the FCI value will reach or exceed 30 by the year 2029. Any FCI value over 10 indicates poor facility condition. Numbers over 30 indicate that a facility is need of either replacement, major renovation, or upgrade to major building systems.

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 the school district over the long term.

Lewistown ES, Thurmont ES, Emmitsburg ES, and Wolfsville ES were evaluated in a 2020 study for limited renovation projects. The study was approved by the BOE at the October 21, 2020 meeting and recommended moving forward with the limited renovation of Thurmont ES. Further details can be found in [Chapter 7](#). Apart from the initial four schools, there are numerous other school facilities within the FCPS system that are approaching or exceeding the 30-year mark, have a high FCI, and significant deferred maintenance. Due to critical need for improvements to several building systems, Monocacy ES is planned to be the next limited renovation project. Additional 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. A study of multiple schools similar to the one described above could be conducted to identify the next candidates for limited renovation.

Systemic Projects

With the addition of limited renovation projects, the request for funds for specific systemic projects will be limited to targeted systems replacement, equipment replacement and repair projects needed to support system requirements. The CIP request for systemic projects will also include a contingency amount to help with emergency replacement needs for each fiscal year. A targeted approach to systemic projects will help free up funds that could be used towards limited renovation projects.

This group of projects includes all needed major improvements to existing schools. Capital systemic projects are necessary either to improve a building for instructional purposes or to make major systemic repairs to systems under imminent threat. Some of these improvements are identified by local evaluations conducted by maintenance staff, while others are in response to state/federal mandates.

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 owners to 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 or Construction Manager Agency (CMA) 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, or a variety of contractors, 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 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 for FCPS and is allowed by the IAC with prior approval. Several other LEAs in Maryland also use this method to deliver 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 complete, 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 for the first time to complete the addition at Oakdale MS. Under this method, FCPS hired one vendor 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.