

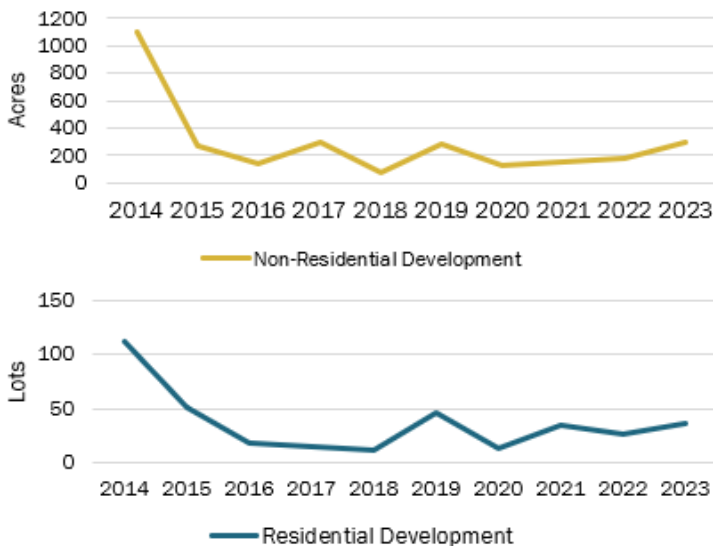
ADDRESSING STRESSED INFRASTRUCTURE



The Trend

The discussions around growth and the cost of infrastructure, including schools, roads, bridges, water and sewer facilities, parks, and solid waste facilities, typically focus on the needs caused by new development. There are often fees, dedication of land, or other development requirements assessed by local governments to offset the cost of these new infrastructure needs. However, another consideration when developing a plan for growth is how to continue to adequately fund the maintenance of the infrastructure that was put in place during the years that Carroll County was experiencing high rates of growth. Are elements of our public infrastructure aging or becoming stressed without the revenue needed to repair or replace essential facilities? What has improved or gotten worse over the past ten years?

10-Year Development Trend



What are the implications of limitations that these systems have? As the County embarks on an update to the 2014 County Master Plan, what is the significance of this assessment to developing a strategy for future growth?

New development, both residential and commercial, has slowed since the 1990s and early 2000s, and remained relatively flat over the past ten years. At the same time, County facilities have continued to age, requiring increased funding from a variety of sources, including federal, state, and county resources. The sources of funding for maintenance and repairs vary depending on the type of public infrastructure, causing disparities in the maintenance of the different facility types. Below is an assessment of the condition of the County’s facilities, the way in which they are funded, and the systems in place for planning for future maintenance requirements.

Background and Impact

Schools: The Carroll County Board of Education is responsible for the maintenance of 40 school buildings. According to the 2024 Carroll County Educational Facilities Master Plan (EFMP), the average school building is expected to last a minimum of 40 years before it receives a modernization. Modernizations, which bring the aging facilities to current educational standards and update all systems, have historically taken a back seat to new school construction due to the requirement to provide capacity relief to accommodate enrollment growth. In addition to modernizations; systems such as roofs; heating, ventilation, and air conditioning (HVAC); fire alarms; parking and driveway reconstruction; and technology infrastructure also require maintenance and often replacement prior to a full modernization.

There are currently several schools in the inventory that are over forty years old and in need of modernization. The majority of current schools were constructed in the 1980s and 1990s when Carroll County was experiencing considerable residential growth. The newest schools in the inventory are Manchester Valley High, which opened in 2009; the replacements for Mount Airy Middle and East Middle Schools, which opened in 2013 and 2023, respectively; and the modernization of the Career and Technology Center, which was completed in 2009.

In recent years, Carroll County Public Schools has performed an annual comprehensive assessment of school building needs, including both physical and functional assessments. The resulting individual scores and combined scores are presented in the EFMP and are used to prioritize capital needs. The 2025-2030 Adopted County Six-Year Community Investment Plan (CIP) includes funds for five roofs and fifteen HVAC systems, which is significantly less than the needs presented in the EFMP.



Modernizations and maintenance are primarily funded by dedicated local income tax revenue and state funds. The Impact Fee imposed on new development is not available for this purpose. State funding has been insufficient as construction costs have increased and the school construction CIP funding has stayed level, and is difficult to predict over the coming years. As schools continue to age over the next decade, additional revenue will need to be identified to modernize the majority of school buildings that will exceed their useful lives. The Blueprint for Maryland's Future, which is a set of state-mandated policies intended to transform Maryland's education system, may further exacerbate the problem. While the state will provide additional funding for this program, which includes increased teacher salaries, universal pre-kindergarten, and bolstered career and technology training, local districts will be responsible for meeting the full funding requirements of the Blueprint.

Water & Sewer Systems: Carroll County's eight municipalities own, operate, and maintain most of their own water and

wastewater treatment facilities. The exceptions to these include the Hampstead wastewater collection and treatment systems, as well as the Sykesville water and wastewater distribution and collection systems, which are owned and operated by the County. The County is also responsible for water distribution, wastewater collection, and water treatment in the Freedom District, as well as Bark Hill (water only), Pleasant Valley, and Woodbine (wastewater only).



Expansions to the water and wastewater systems required to support growth are developer funded. Pump stations are sized for the current service area and are upgraded by developers to add capacity to accommodate growth. While developers and homeowners will

fund initial infrastructure and capacity-enhancing costs, maintenance of the lines and pumping stations are then turned over to the County. The initial lifespan of a pumping station is 20 to 30 years. Beyond this, ongoing maintenance and equipment replacement upgrades are necessary for the county-owned pumping station fleet.

Ten years ago, maintenance and rehabilitation of the County facilities was less systematic and more reactionary, and much of the work was contracted out. The County now has a planned rehabilitation program in place through 2056. As part of this plan, several rehabilitations are CIP-funded per year, as opposed to previous years when only maintenance was performed. There has also been a significant shift to perform maintenance and rehabilitation internally.

The County funds the maintenance of water and sewer facilities primarily through the Utilities Enterprise Fund, which generates its own revenue. Between \$15 and \$16 million are collected annually, and the Bureau of Utilities' operating and capital budgets must stay within this range. In the Adopted FY25-30 CIP, \$8.6 million is included for water and sewer line rehabilitation and replacement, as well as funds for the rehabilitation of one pump station.

Solid Waste: The Carroll County Bureau of Solid Waste oversees the operation of the Northern Landfill and Recycling Center. This facility is located in the Westminster area, was designed in the mid-1980s, and first opened for operation in 1988. Very little has been done to upgrade the landfill infrastructure since that time, primarily due to lack of room to construct improvements and alternatives.



Until relatively recently, long-term planning for a time when Northern Landfill would reach capacity or for handling waste tonnages generated by a more populated county was not a high priority. However, in 2021, the Board of County Commissioners purchased 326 acres adjacent to the landfill for the purpose of developing long-term, sustainable solid waste and recycling options. A new Master Plan for the landfill was developed to guide the expansion. The current CIP includes some funds for the expansion, but new sources of funding will have to be identified for new and expanded infrastructure.

Solid waste operations are funded through the Solid Waste Revenue Fund. However, additional revenue sources will be necessary to fully realize the expansion of the Landfill.

Parks: The Carroll County Department of Recreation and Parks oversees the operation and maintenance of 32 parks and facilities, the majority of which were constructed during the late-1980s to 1990s.



Over the past decade, the County has acquired several parcels of parkland and established three new parks. Currently, the County focuses on maintaining existing equipment and making safety and accessibility improvements on small-scale projects, as the budget permits. While the County continues to acquire additional parkland through Program Open Space (POS) funds dedicated for that purpose, future plans prioritize maintaining the assets already owned rather than establishing new parks or undertaking major renovations.

The County funds park infrastructure replacement on a 20-year life cycle through Program Open Space, with matching funds provided by the CIP. Park maintenance is supported by small

allocations from the general fund. Facilities such as the Hap Baker Firearms Facility, Piney Run Park, Hashawa Environmental Center, and the Carroll County Sports Complex generate revenue through user fees and most are moderately self-supporting. Expansion of the County's parks inventory in response to growth will necessitate additional revenue sources beyond those allocated for maintaining the existing facilities.

Dams: Carroll County owns and maintains over 100 small stormwater dams, many of which were built in the 1980s and early 1990s. The County is responsible for the operation and maintenance of two dams that could pose a risk to life, significant property damage, or flooding of roadways. These dams are the Piney Run Dam in Piney Run Park and the Farm Museum Pond dam in Westminster. The eight municipalities own and maintain their own stormwater management dams, with some assistance from the County.

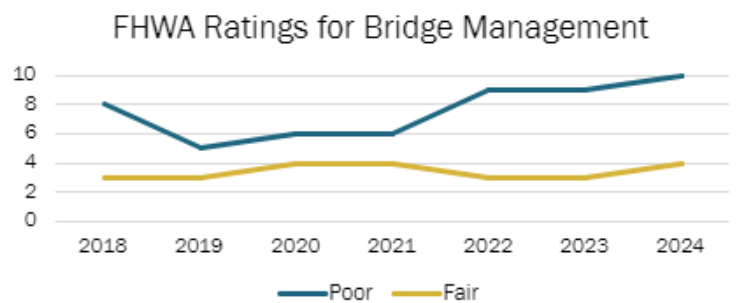
The Bureau of Resource Management maintains a comprehensive inventory management system to effectively budget for the repair and replacement of dams built in the 1980s and 1990s, as well as for minor improvements and ongoing maintenance. A study is being performed on the Piney Run Dam as directed by the Dam Safety Division of the Maryland Department of the Environment to determine the scope of improvements needed for the dam to be brought up to current State regulations. The County is also starting preliminary work on assessing the Farm Museum Pond for maintenance improvements.

The County finances the maintenance of small stormwater dams through National Pollutant Discharge Elimination System (NPDES) compliance funds, the CIP funded Restoration Program, and state and federal grants. The estimated cost for the Piney Run Dam and Farm Museum Dam projects is well into the millions. Funding for these projects may come from a combination of methods, including grants and general fund dollars.

Each year, new dams are added to the inventory, though at a slower rate than during the peak years, with designs intended to last longer—typically 50 to 100 years with routine maintenance. Expansion of the County’s stormwater facilities with dams to accommodate growth will require initial funding from developers for construction and short-term maintenance, followed by investment from the County to meet long-term maintenance needs.

Roads & Bridges: The Carroll County Bureau of Engineering oversees the maintenance of 931 miles of road and 156 bridges. Roadway evaluations are conducted every two years and feature an overall Pavement Condition Index (PCI). Although the PCI has remained steady at a satisfactory level from 2014 to 2022, even with the addition of 28 miles of roadway, the network's cost backlog has grown by an estimated \$90 million. In 2018, the Federal Highway Administration altered the way bridges are rated; since then, there has been a slight increase in the number of deteriorated bridges.

The County funds maintenance of roads primarily through Highway User Revenues (HURs), which are generated from the state's gasoline tax and allocated among the state, counties, and municipalities. Because HURs are determined by state legislative actions, they can vary from year to year. Recently, however, HURs have been declining due to increased fuel efficiency and the rise in electric vehicle usage. The PCI is a useful tool for forecasting roadway funding needs. Federal Aid funding is available for bridge maintenance and remains relatively flat annually. However, staffing shortages within the Bureau and the complex process required to access this funding often result in some of it going unused. Expanding the county’s road network to support growth will reduce the funding available per mile, while increased traffic will speed up wear and tear on the infrastructure.



Relevance to Carroll County

Since the 1990s, Carroll County has adopted a multi-year Operating Plan, as well as a six-year CIP. This long-term approach, which assesses needs and identifies revenue over multiple years, has served the citizens well. As infrastructure continues to age, maintenance and rehabilitation of existing infrastructure and facilities will continue to be a major concern and responsibility of local government. Certain facilities, such as water and wastewater, and solid waste, are primarily funded through Enterprise Funds, which places the financial burden of maintenance on the users. Other facilities are dependent on more volatile funding sources, making planning more challenging.

One key to Carroll’s continued success in providing quality services and facilities at a reasonable expense to the users and taxpayers is the documentation and establishment of systems to prioritize needs and plan for maintenance funding. The master planning process is an opportunity to consider ways to plan for and fund the operating and maintenance needs of existing infrastructure and facilities, and weigh the pros and cons of future development that, while adding to the demands on infrastructure, also could be a strong source of revenue to help pay for maintenance obligations.

Reference

The information provided in this paper was provided by the staffs of the Office of Management and Budget; the Department of Public Works: Bureaus of Solid Waste, Engineering, and Utilities; the Department of Recreation and Parks; and the Department of Planning and Land Management: Bureau of Resource Management.