



# chapter 9

## Supporting Infrastructure



# Supporting Infrastructure

Infrastructure in Howard County supports the daily needs of the community and delivery of essential services. Planning for infrastructure investment is driven by the type, location, age, and capacity of the particular service, be it public safety, parks, drinking water, wastewater treatment, stormwater management, solid waste disposal, public buildings, or schools. Maintaining and enhancing the County's infrastructure is critical to meet existing demands and support future opportunities for growth and conservation.

To support the future growth and development depicted on the Future Land Use Map (FLUM), planning for new or expanded infrastructure should acknowledge that new infrastructure investments have a significant impact on the type, location, pattern, intensity, and timing of new development. Equally important, the County must maintain existing infrastructure when and where needs arise to avoid larger and more costly repairs in the future.

This chapter provides policies and implementing actions for the following infrastructure categories: police protection, fire and rescue services, recreation and parks, county facilities, allied agency facilities, drinking water supply and wastewater treatment, and solid waste management. Additional information on public schools can be found in the Public School Facilities chapter. This information will be shared with different facility and service providers and will be refined in future functional plans or master plans.



# What We heard

Throughout the public engagement process, community members, residents, and stakeholders universally emphasized the draw of the County's amenities—top-notch recreational opportunities; award-winning library system; outstanding police, fire, and rescue services; and high-performing public schools—as reasons people move to and stay here.

The project team also heard the following concerns related to water and wastewater treatment in the Rural West: developing additional units near existing wells could further burden the local water table; the use of shared septic systems, or similar technology, could lead to overdevelopment; shared septic systems could impact groundwater quality; and the cost and responsibility associated with maintaining shared septic systems could lead to challenges, particularly when replacing failing systems. Some community members shared a concern that the cost of shared septic systems may make housing unaffordable for potential residents.

Still others supported the idea of limited residential housing clusters in both the East and West using shared septic system technology, as it decreases the need for ecologically-disruptive sewer lines. Many wanted the County to update its septic system rules to better use land for housing, to pursue septic system technology innovations that would allow limited mixed-use and multi-family development in existing rural crossroads, and to allow "missing middle" housing options and infill development on existing land. They supported small-scale development in the Rural West if it were concentrated and if new infrastructure models were explored, such as mini-composters, wastewater recycling, and low-use fixtures.

Finally, some community members suggested the County should maintain and invest in wastewater treatment and solid waste facilities that protect the Chesapeake Bay and the County's rivers.



## Diversity, Equity, and Inclusion Focus Groups Findings

- Invest in high-quality libraries, recreation centers, and parks where there are gaps throughout the County, especially in the Route 1 Corridor.
- Ensure Wi-Fi access is available in public spaces and buildings (recognizing some people rely on libraries and community centers during power outages).
- Provide flexible indoor and outdoor spaces for community use.

# Sustainable and Equitable Infrastructure Investments

Infrastructure investments require careful long-term fiscal planning and prioritization. ~~Some communities struggle with strategic planning or accounting for the full cost of infrastructure projects, which may include not only the cost of construction or acquisition of the facility or equipment, but also annual operating and maintenance costs. There may also be necessary expenses in the future to eventually rehabilitate or replace the asset once it has reached the end of its useful life. It is important to account for full long-term costs to avoid large unanticipated expenses.~~

## Spending Affordability Advisory Committee (Saac)

The Spending Affordability Advisory Committee (SAAC) is tasked with making recommendations to the County Executive on revenue projections, General Obligation bond authorizations, long-term fiscal outlook, and county revenue and spending patterns. SAAC is directed to prepare and present a report to the County Executive, on or before March 1 annually, including:

- Projected General Fund revenues for the upcoming fiscal year.
- Recommended new county debt (General Obligation bonds) authorization.
- An analysis of the long-term fiscal outlook including multi-year projections.
- Other findings and/or recommendations that the Committee deems appropriate.

In March 2021, the Howard County Spending Affordability Advisory Committee (SAAC) released their report for Fiscal Year 2022, which identified the need to strengthen long-term strategic planning and fiscal discipline to ensure infrastructure investments are sustainable, with adequate prioritization and full cost accounting.

The SAAC noted that spending requests from all agencies significantly outpaced resources available and that the funding gap was projected to grow in coming years, as slower economic growth has been forecasted compared to prior decades. The magnitude of the funding gap was alarming: requested funds for capital projects by all agencies in Fiscal Years 2022-2027 were approximately double the projected debt capacity and other dedicated resources for the same fiscal years.



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The Committee acknowledged that expanding the tax base is the optimal long-term strategy, but the immediate focus should be to prioritize needs versus wants and take a strategic, comprehensive, long-term approach.

The SAAC urged all stakeholders to prioritize and collectively bring total funding requests more in line with available resources. The Committee also encouraged the County to address ongoing or significant maintenance backlogs that have resulted from years of deferred maintenance. Deferring unmet infrastructure operating and maintenance costs to future years may also lead to larger, more expensive capital costs when facilities fail and require emergency repairs or renovation. The Committee urged the County to fully plan for infrastructure costs, including associated operating budget impacts.

Such decisions are even more critical as the County begins to experience both a slowdown in revenue growth and rising debt burden, which will limit or reduce its capacity to authorize new debt for future capital projects. The County will have to make difficult decisions to prioritize competing infrastructure requests and maintain existing service levels.

## Capital Improvement Program (cip)

The Capital Improvement Program (CIP) provides a plan for maintaining and improving the County's public infrastructure. The County's General Plan and supporting master plans for recreation and parks, human services, schools, community college, water and sewer, solid waste, libraries, police and fire stations, and public facilities guide the identification of new capital projects and maintenance needs funded in the CIP. The County uses an annual debt affordability process to determine reasonable debt levels.

### INF-1 Policy Statement

Prioritize Capital Improvement Program requests that directly implement General Plan policies and implementing actions.

### Implementing Actions

1. Expand project statements to refer to policies and implementing actions in the General Plan.
2. Make existing and deferred maintenance projects a priority in the Capital Improvement Program, with sustainable funding sources and levels allocated to address ongoing needs and backlog.

## Equity in Capital Planning

Incorporating equity into capital improvement planning processes is an emerging practice across the County, the region, and the nation. In September 2021, the Baltimore Metropolitan Council (BMC) released a report, "Best Practices for CIP Development and Promoting Healthy Communities," that shared best practices in CIP development, including a recommendation for incorporating equity measures in the process. The report suggests that jurisdictions should evaluate their communities and determine the social vulnerability of a population by analyzing factors such as socioeconomic status, household composition, age, disability, race/ethnicity/language, housing, and transportation access.

As noted in the report, Howard County has started to use a system based on BMC's Vulnerable Population Index (VPI) to track whether certain capital investments are being made in an equitable manner. Specifically, the County's Complete Streets Policy involves tracking the percentage of new roadway projects or roadway repairs in priority communities, as identified by the VPI. To produce a percentage figure, the number of projects or repairs located in vulnerable census tracts are divided by the total number of projects and repairs completed countywide.



There are other meaningful ways that equity could be incorporated into the County's CIP planning process. Some examples from the BMC report include the following:

- **Participatory budgeting and other community-driven planning efforts** that directly engage “vulnerable” or underserved communities in the decision-making process. For example, the Cities of Denver and Philadelphia have set aside capital funding for underserved neighborhoods. These neighborhoods are invited to submit project proposals for how these capital funds should be spent within their communities.
- **Developing a scoring system** based in equity that helps prioritize capital projects. By using a score-based system to prioritize projects, jurisdictions can make better-informed planning decisions for vulnerable communities. Below are factors that metropolitan planning organizations typically use to prioritize transportation projects; however, these can also apply to local government level capital planning.
  - **Location burdens-based**, which considers the location of a project within equity communities as detrimental for them. Projects are awarded points if they are not located within an equity community or if they include measures to mitigate harm.
  - **Location benefits-based**, which considers the proximity of a project to equity communities as beneficial. Projects are awarded points if they are located within or adjacent to an equity community.
  - **Impacts-based**, which evaluates both the potential benefits and burdens a project will have on equity communities. Projects are awarded more points if they will bring about benefits and fewer points if they will bring about burdens.
  - **Access to destinations-based**, which considers accessibility improvements that a project may provide an equity community. Projects are awarded more points if they can increase access to key destinations.
  - **User-based**, which considers who will use a project. A project is awarded more points if more people from equity communities use the facility.
  - **Community engagement-based**, which considers how project sponsors involved equity communities before and during a project's development. Projects with more stakeholder engagement are awarded more points.

Howard County has a participatory and transparent process. But as with any process, there are always opportunities for improvements. Equity should be incorporated throughout the capital planning process to develop the CIP in a transparent and inclusive way. Transparency should extend far beyond the development and into the implementation process.

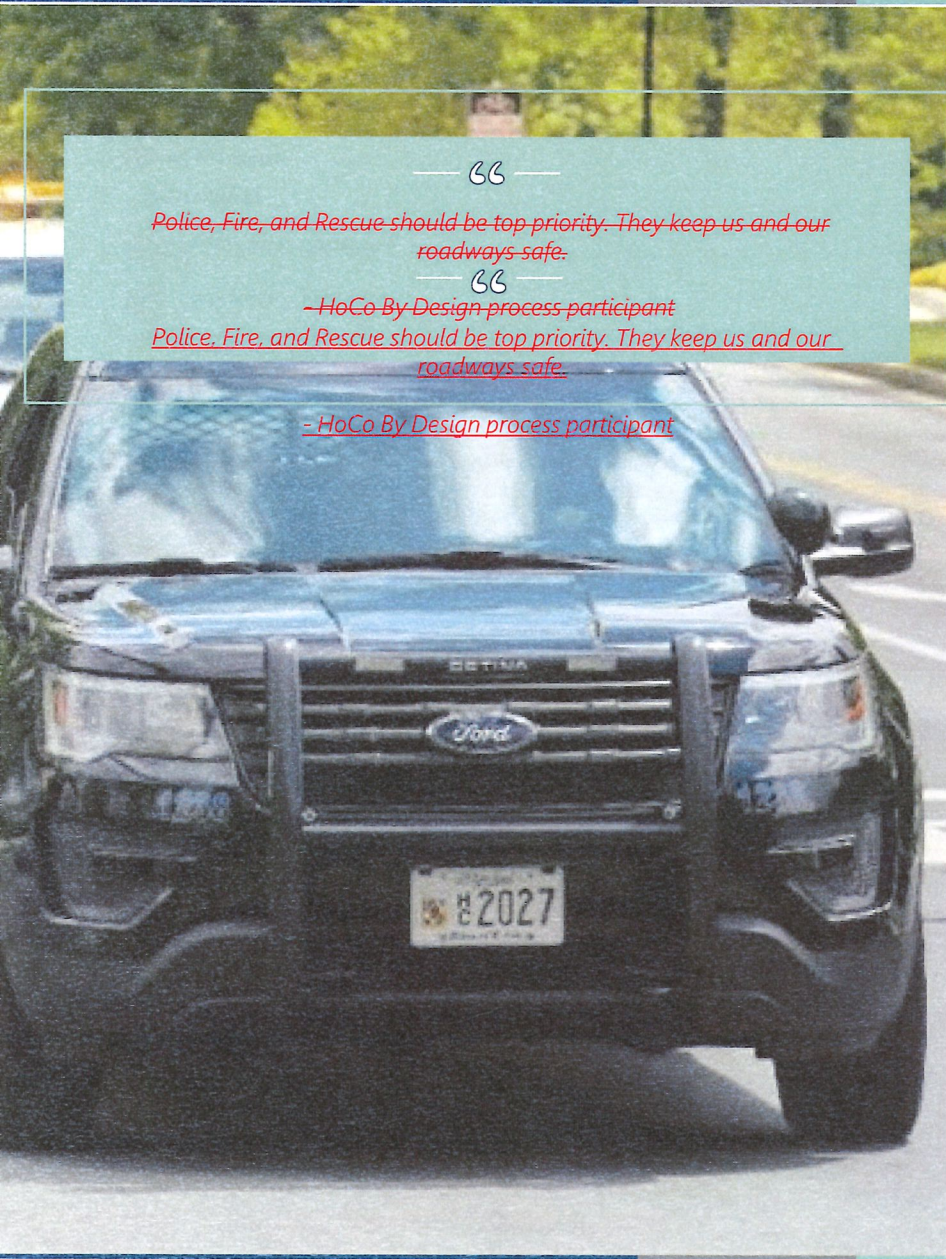
### INF-2 Policy Statement

Prioritize equity in capital improvement planning and programming.

### Implementing Actions

1. Explore how to implement a diverse and inclusive outreach process for identifying capital needs.
2. Implement a diverse and inclusive outreach process for capital planning.
3. Work with partners to develop a methodology to identify socially vulnerable communities.
4. Incorporate equity measures into prioritization processes for capital projects [, including community centers, and develop a scoring system to prioritize capital investments in equity emphasis areas.](#)





# Police Protection

In 2022, police protection in Howard County was provided by the 509 sworn officers serving in the Howard County Police Department (HCPD) and was supported by 229 full-time and contingency civilian staff members. The department included 67 bike officers and eight K-9 teams. Given Howard County’s population at that time of 334,529, HCPD had one police officer per 657 residents.

The HCPD is separated into two patrol districts, each of which has its own police station. The Southern District Police Station is located in Laurel and covers the Columbia area and the southeastern part of the County. The Northern District Police Department is located in Ellicott City, adjacent to the George Howard Building, and covers Ellicott City, Elkridge, and the Rural West. HCPD moved its administrative components—including the Police Chief, Command Staff, and Human Resources—out of the Ellicott City station to Elkridge in August 2020 because of inadequate space and the need to consolidate the Criminal Investigations Bureau at that location. HCPD also has a Community Outreach Center in Columbia, a small space at the Gary J. Arthur Community Center in the Rural West, and a 20-year-old training center in Marriottsville.

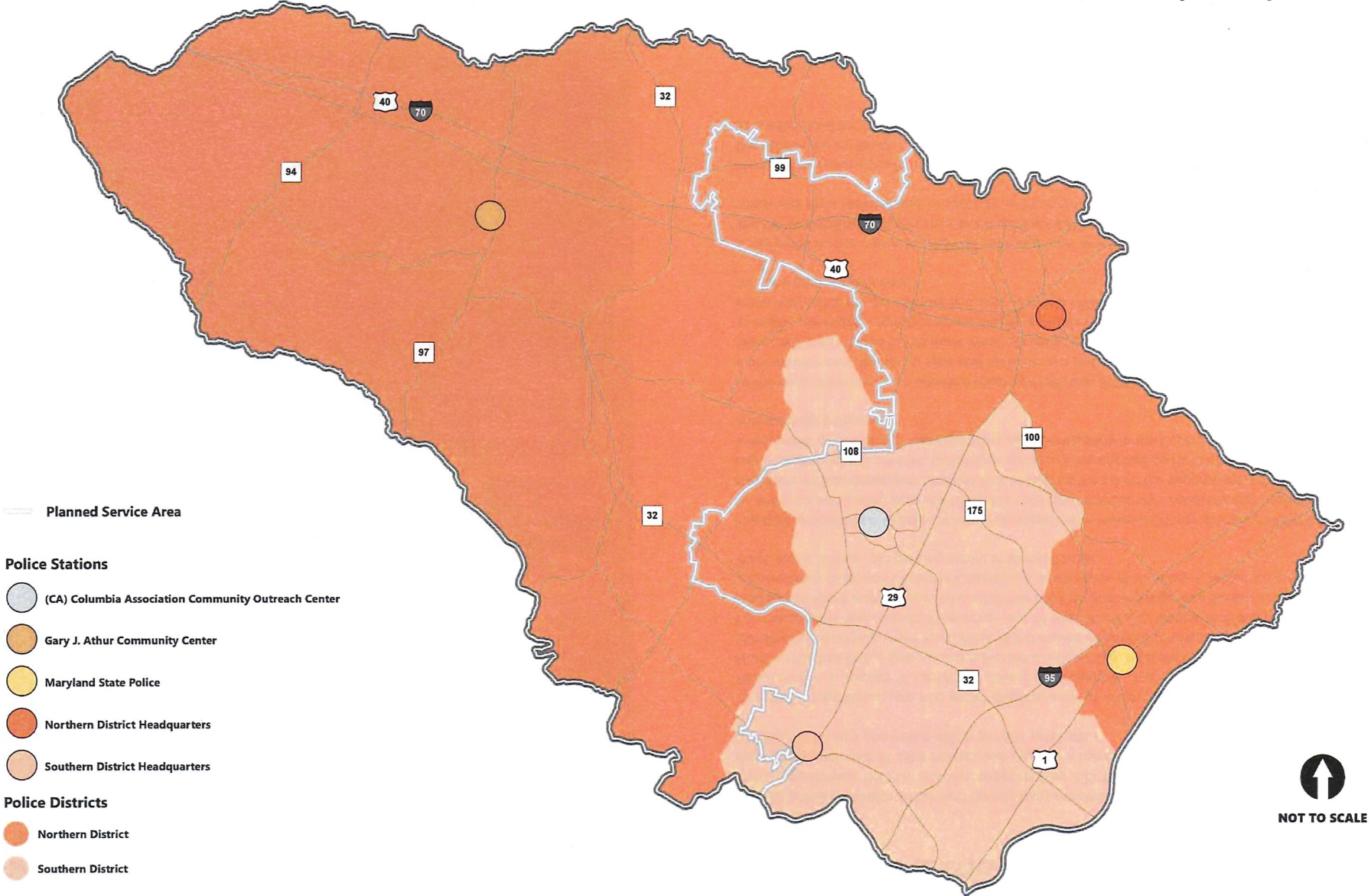
The type, amount, and location of future development in Howard County all impact HCPD’s needed resources and its ability to adequately respond to service calls from the County’s residents and businesses. Police department members are less dependent on a network of stations than their fire department colleagues because they typically rely on mobile patrol vehicles, rather than stationary fire engines and ambulances. Therefore, the most important investments for sustaining and expanding police protection in the County are new police officers, patrol vehicles, and specialty equipment.

As the population grows, so does the volume of calls that HCPD needs to respond to, and the number of calls from a community can vary by its type and location. For instance, senior housing and lower-density neighborhoods (especially those found in the Rural West) generally generate fewer service calls, while commercial centers, such as malls, and higher-density neighborhoods typically generate more calls. Furthermore, a community’s activity levels may influence the number and type of police officers needed to adequately cover a beat patrol and meet the local community’s needs.

A key performance metric for HCPD is response time, which is directly influenced by a patrol beat’s activity levels and the availability of officers to respond quickly. HCPD strives to maintain and improve its average response time, which was eight minutes and 14 seconds for Priority 1 calls in 2022.

Many of the patrol beats in eastern portions of the County—inside both the Northern and Southern Patrol Districts—such as Route 1, are overburdened compared to other areas. The County should consider early ideas about the need for, and benefits of, a third HCPD patrol district and police station.

map 8-1 : police patrol districts





The existing firing range for the HCPD was built in 1990 and refurbished in 2007. A residential neighborhood was built adjacent to the existing facility that creates new challenges for safety related to long-range (up to 200 yards) shooting practice. New compliance standards from recent state policing reform legislation also create new demands at the firing range. The County is currently remediating lead embedded in the protective berm of the firing range and will need to investigate and implement lead solutions post-remediation. A feasibility study was completed in 2020 to evaluate the current location and determine if a new location or upgraded facility might best meet the future needs of the HCPD. The investment for an upgraded facility to meet new demands in the same location is estimated at \$24.0 million.

Future planning for the County's bike lanes and greenways should consider opportunities for police patrol by bicycle (vs. automobile) in more densely-populated areas. HCPD should participate in planning efforts that address ways to connect portions of the community via walkways, bikeways, and greenways. A police-on-bike program opens new avenues of community engagement for the HCPD and increases police presence as a deterrent to crime; however, some situations may still require a police cruiser because it is more fully equipped.

HCPD would like to implement different integration technologies that improve police services in the community. In particular, the department would benefit from a broader "Smart Cities" Initiative in Howard County that links together different information systems and provides more opportunities for real-time information-sharing with the community.

### INF-3 Policy Statement

Enhance police protection.

#### Implementing Actions

1. Evaluate the need for new or modified police department facilities. Emphasize the need for Explore the creation of a third police patrol district and police headquarters to meet future demands and decrease lease costs. Act upon the feasibility study completed in 2020 to improve the police department firing range at its current location.
2. Ensure the police department has adequate staff and equipment based on levels of crime population, number and types of crime, response times, and demand for services.
3. Enhance and expand community policing programs. Consider Continue the use of greenways for police patrols on bike or on foot and consider expanding the program. Develop additional outreach programs to engage young people and future recruits. Continue recruiting officers with diverse backgrounds and ethnic heritages so that cultural and language skills are reflective of the population.
4. Advocate for "Smart City" or other police-focused technologies that improve police protection and provide real-time information to the police department and other system users.



# fire and reScue Services

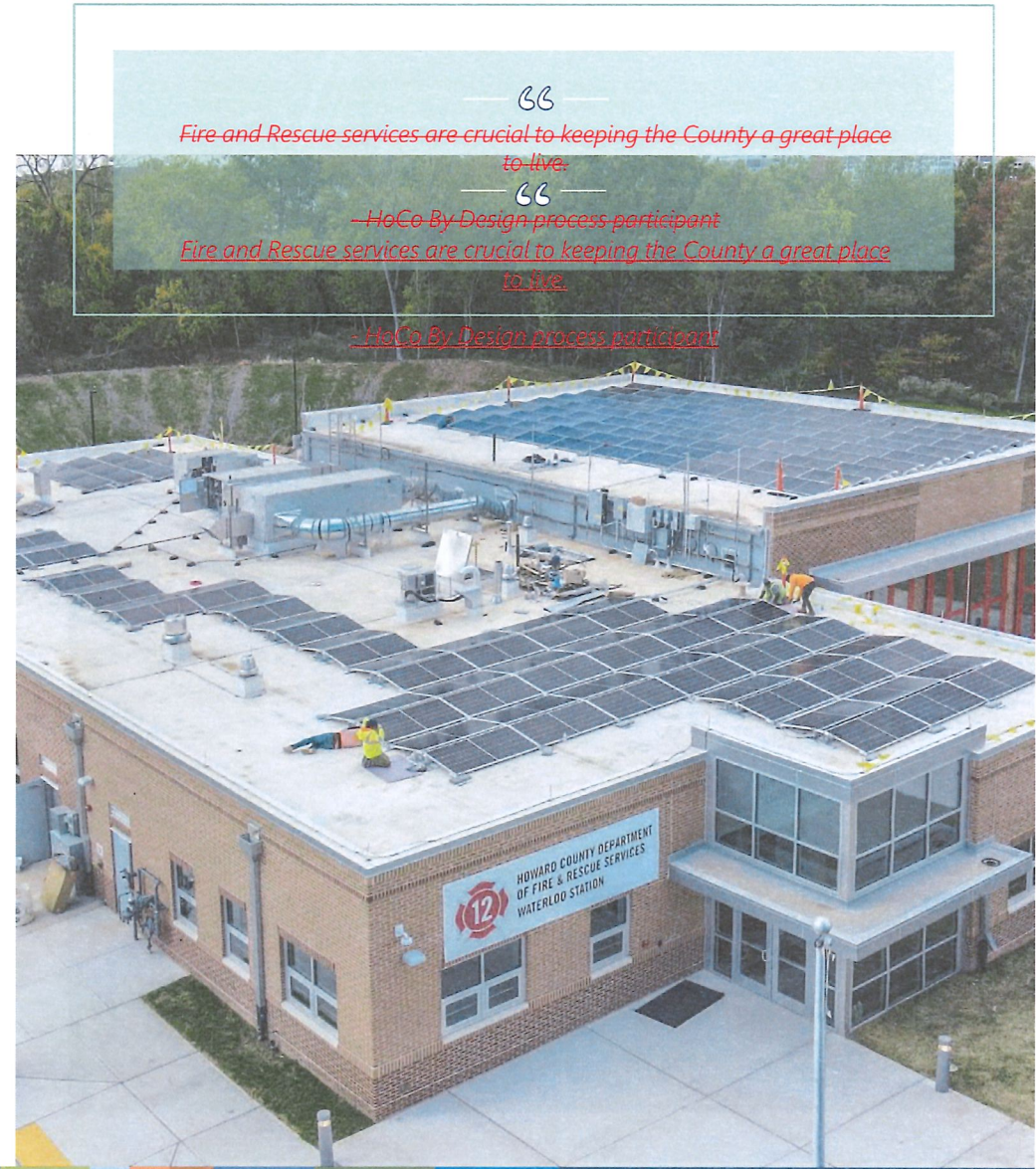
Fire protection and emergency medical services are provided to County residents and businesses by the Howard County Department of Fire and Rescue Services (HCDFRS). In the fall 2022, HCDFRS consisted of 14 fire stations located throughout the County with a 15th in the design phase of construction. The stations were staffed by 557 full-time career firefighters, 254 operational volunteer firefighters, and 79 civilian and contingent personnel. HCDFRS' 2021-2024 Strategic Plan further describes the department and its vision, goals, and objectives for the next several years.

In 2019, the County opened Station 14 near Merriweather Post Pavilion to serve new and ongoing growth in Downtown Columbia. Station 12 was opened in October 2022 in Waterloo to serve continued growth and increasing call volume. Meanwhile, a new Station 15 was in design in North Columbia to serve increasing demands for service. In 2013, HCDFRS responded to 29,634 incidents. In 2019, HCDFRS responded to 38,110 incidents—an average 4.1% increase in incident volume per year. In 2020, incidents dropped nearly 11% to 34,000, a circumstance likely influenced by the Covid-19 pandemic and individuals' choices to use alternative treatment options in lieu of hospital emergency room visits. In 2021, call volume trended upwards to 36,034 with the expectation to return to pre-pandemic numbers, as 2022 was projected to have over 37,000 incidents. Of those incidents, nearly 60% were located in the first due response areas of four stations: Station 9 (Long Reach), Station 2 (Ellicott City), Station 6 (Savage/Laurel), and Station 7 (Banneker). Medical and rescue incidents accounted for 82% of the call volume.

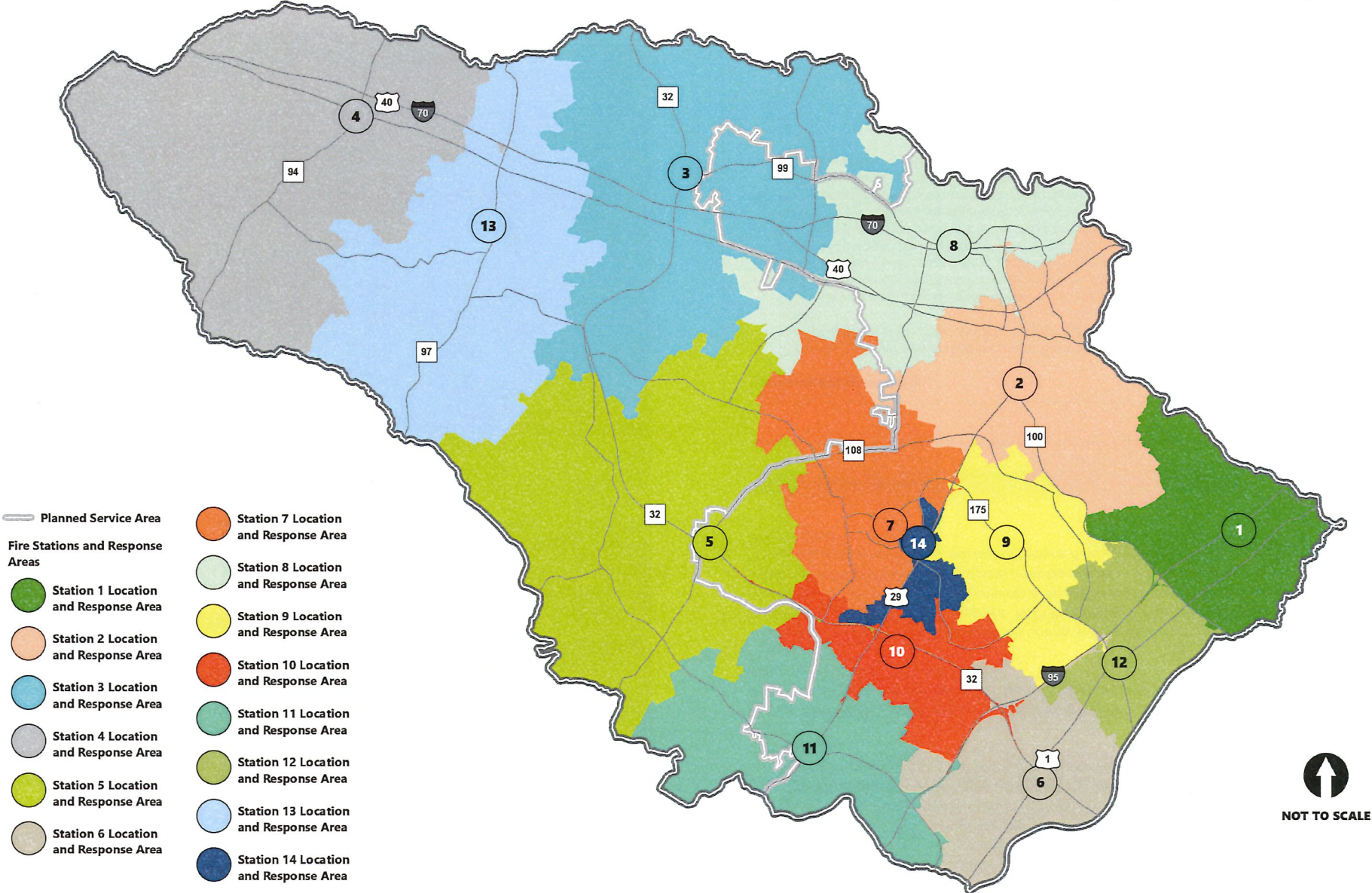
HCDFRS continues to add and train staff on front-line fire apparatus to comply with National Fire Protection Association standards. The department was selected for the American Heart Association's Mission Lifeline Emergency Medical Services (EMS) Gold Plus Award in 2020. The award recognizes departments that implement quality improvement measures for the treatment of patients experiencing cardiac emergencies. HCDFRS also received two National Association of Counties awards, one in 2021 for the Mobile Integrated Community Health initiative and one in 2022 for the Carcinogen Reduction Plan.

Additional employment and residential growth, and changing demographics countywide, are expected to create the need for additional fire station(s) by 2030, equipment, and personnel to maintain and improve fire and emergency medical response times. The County levies a fire tax countywide that serves as the primary funding source for the County's fire and rescue tax fund (a dedicated fund solely used for fire and rescue services). An EMS Transport Fee passed in FY 2020 also provides revenue for this dedicated funding source. As of fall 2022, the fire tax rate was 23.60 cents per \$100 of assessed value. The rate was increased in 2019 to help support anticipated staffing and operating needs to close service gaps and cope with future population growth. In addition, the County implements a transfer tax of which a rate of 0.1875% of property transaction value is designated to funding HCDFRS capital projects.

Unlike police departments, fire departments are more dependent on a network of fire stations, fire hydrants, and other water supplies located near neighborhoods, businesses, and industrial centers to house the needed fire engines, ladder trucks, ambulances, and other support vehicles.



map 8-2: fire response areas





Providing fire suppression in the Rural West—located outside of the County’s Planned Service Area—presents specific challenges for response teams because public water and fire hydrants are not available near buildings or structures. As a result, fire engines are dependent upon nearby fire ponds, strategically-placed 30,000-gallon cisterns, and a continuing rotation of water-carrying fire engines or tanker trucks to replenish their water supply using temporary, on-site dump tanks set up by the fire department during an incident. This system can be manageable for smaller, more isolated fires but becomes problematic for fires that involve multiple or larger structures.

In 2022, there were 34 water supply cisterns serving the Rural West. Since 2008, long-term plans have called for up to 100 cisterns in the area to support a sufficient water supply system. Construction of the full cistern system will continue through 2040 and beyond.

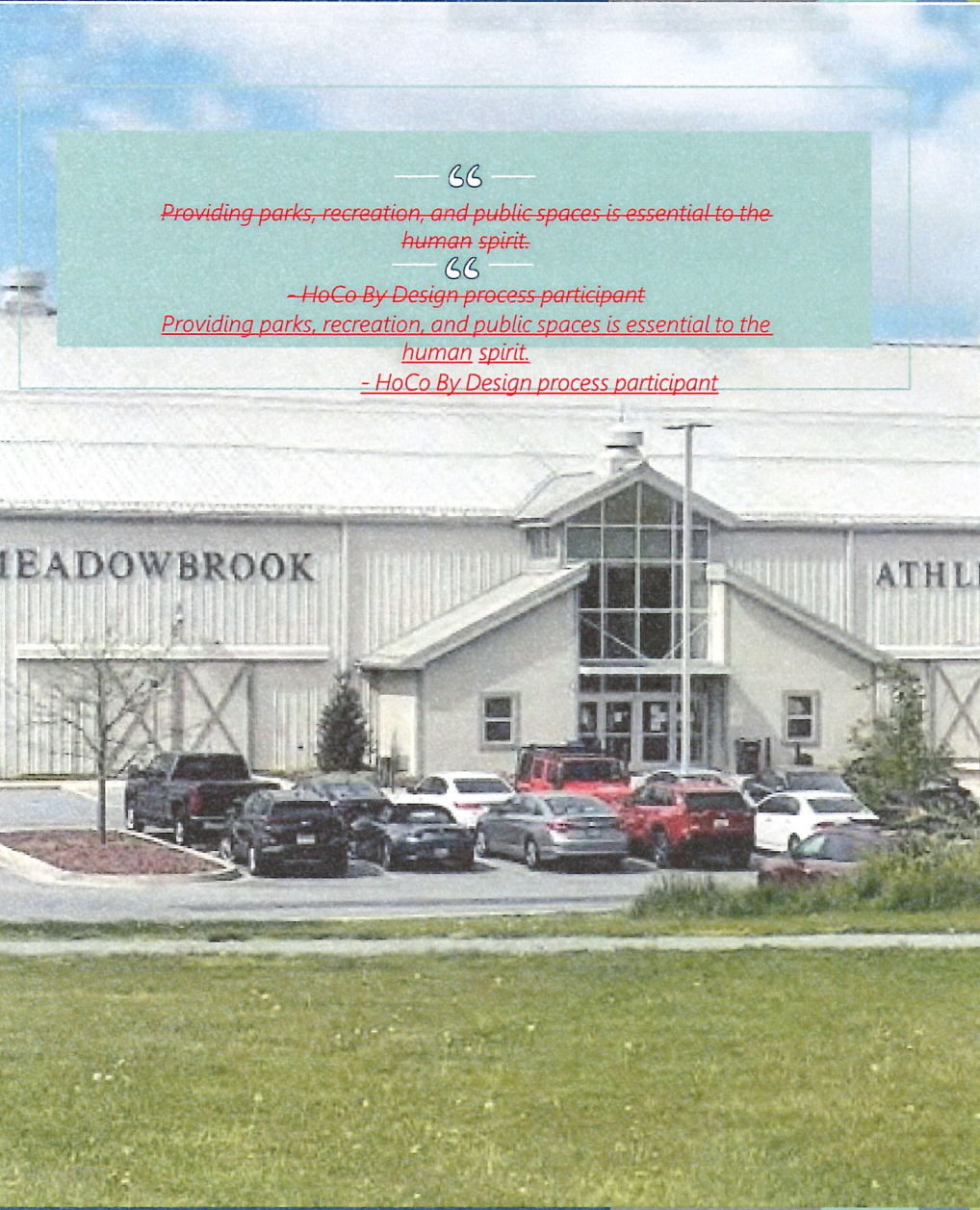
Competition for land in some areas of the County will increase dramatically as new facilities and services are identified to serve nearby development. HCDFRS should consider station designs that minimize overall size requirements, leverage co-location requirements, and focus design to efficiently meet specific requirements of future needs. HCDFRS should also assess prototypes used in the County after they are built, ensure stations are functioning as they were intended, and determine if design elements from one station may be appropriate for other projects.

#### INF-4 Policy Statement

Minimize loss of life, loss of property, and injury due to fire or medical emergencies.

#### Implementing Actions

1. Construct and staff new and replacement fire stations in the Capital Improvement Program. Renovate and rehabilitate existing fire stations as appropriate to ensure the continued provision of efficient service.
2. Continue to construct underground cisterns to support fire suppression in the Rural West. Determine strategic placement locations for water-holding cisterns that allow for improved water supply access and shortened distance for tanker trucks shuttling water for firefighting operations in the Rural West.
3. Provide funding to replace fire and rescue vehicles **when needed with electric vehicles when possible.**
4. Complete a strategic plan for the fire department that anticipates future year fire station needs based on the type, location, pattern, and intensity of development envisioned on the Future Land Use Map.
5. Consider opportunities to provide shared-use facilities, **similar to the Merriweather District Fire Station**, in some locations of the County to provide fire stations where they are most needed and thereby create equitable access, **similar to the Merriweather District Fire Station.**



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*Providing parks, recreation, and public spaces is essential to the human spirit.*

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*-HoCo By Design process participant*

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## Recreation and Parks

Parks, open space, and recreation facilities and programs contribute significantly to a healthy lifestyle and a high quality of life for Howard County's residents and visitors. Every five years, the County updates its Land Preservation, Parks and Recreation Plan (LPPRP), a comprehensive plan that guides the Howard County Department of Recreation and Parks (DRP) on key issues, trends, and plans for managing and enhancing its preserved public lands, facilities, and programs. The 2022 LPPRP is organized around five aspirations that incorporate department goals and strategies:

- Deliver accessible experiences to all members of the community.
- Be a trusted steward for natural resources.
- Acknowledge and amplify all cultural histories.
- Maintain functional and financial responsibility.
- Maintain high-quality spaces.

The first three aspirations also respond to the three themes of the LPPRP—parks and recreation, natural resource conservation, and agricultural land preservation. Environmental stewardship and equitable access to Howard County's parks, open space, and recreation facilities and programs are central tenants for the County and will continue to be essential when planning for Howard County's future. DRP oversees and maintains 9,825 acres of land, including 5,779 acres used for the County's 98 regional, community, and neighborhood parks, and 4,046 acres used as open space. In addition, the County benefits from 9,268 acres of state parkland, 3,213 acres of Washington Suburban Sanitary Commission (WSSC) land for public use, and 3,629 acres of Columbia Association open space. The presence of state parks, such as the Patapsco Valley State Park; Columbia's lakes, open space, and trail system; and county facilities, such as the Middle Patuxent Environmental Area and the Robinson Nature Center, all greatly contribute to Howard County's access to and appreciation for nature.

The County's park system includes 44 playgrounds, three community gardens, multiple recreation centers, and a wide array of athletic fields and facilities, including basketball courts, skate parks, baseball and softball diamonds, tennis and pickleball courts, and multi-purpose fields. Despite the many fields and athletic facilities in the county, local demand from youth and adult sports typically exceeds capacity, preventing the County from attracting and hosting regional athletic tournaments and other events. Tournaments are often multi-day events for teams that travel from out of town. Currently, these events generate significant hospitality spending in neighboring jurisdictions, primarily through hotels and restaurants, and provides local clubs with fundraising opportunities. Numerous surrounding counties have developed either temporary or permanent tournament sites with success. The County also offers nearly 112 miles of trails for residents and visitors to enjoy.



DRP offers programming and activities for residents of all ages. In 2019, the Department served over 100,000 people in approximately 8,500 different programs, a figure that underscores the widespread use and enjoyment of the County's parks and recreational activities. Many DRP programs take place at the Meadowbrook Athletic Complex or one of the County's three community centers located in Cooksville, Laurel, and Ellicott City.

There are also other public, nonprofit, and private organizations that provide a variety of recreation programs, events, and leisure services in Howard County. The LPPRP includes updated information on these organizations to ensure that DRP is aware of the opportunities that exist to fill gaps, seek out partners when appropriate, and reduce or eliminate the potential duplication of efforts.



### Expansion of the County Park System and Recreation Facilities

As the County's population grows, so will the demands for new and improved parkland and recreational programming. This increased demand will require hiring additional staff, purchasing and replacing park vehicles and equipment, and constructing and maintaining new parks and facilities to address public needs and facility deficiencies identified in the 2022 LPPRP.

The 2022 LPPRP sets an acquisition goal of 25 acres of parks and open space per 1,000 residents. The County currently has 29.5 acres per 1,000 residents. The 2022 LPPRP also uses the Maryland Park Equity Tool to analyze county residents' access to a facility, park, open space, or amenity. In the Rural West, access is measured as a 5- to 15-minute drive. In the East, access is measured as a 5-minute drive or a 10-minute walk. The results of this analysis indicate that there are more areas of low access or low park equity in the eastern part of the County compared to the Rural West. The 2022 LPPRP sets an acquisition goal to prioritize parks and open space acquisition within census tracts with low park equity.

Land acquisition has become a challenge for the department in recent years as large parcels of available land become scarce. As a result, DRP has shifted to acquiring smaller parcels, generally of 25 acres or less. This trend is expected to continue as smaller parcels are acquired in redeveloped areas, especially activity centers, offering an opportunity to increase equitable access to green space and create links to existing open space. Park and recreation facilities in redeveloped areas could include plazas, pocket parks, and amphitheaters, as well as open space connections to nearby parks and pathways. Park and recreation facilities may also be provided through privately-owned playgrounds, dog parks, plazas, or entertainment areas with access restricted to residents of the development.

As inter-departmental needs for the last remaining developable land in the community become more competitive, undeveloped parkland and open space may sometimes be considered for new public facilities. The struggle to protect existing parks and develop new parks to serve a growing population is likely to escalate as the competition for space grows—especially in eastern portions of the County that are inside the Planned Service Area.



### INF-5 Policy Statement

Maintain and expand Howard County's park and open space system and recreation facilities and programs to keep pace with future growth and ensure safe, convenient, and equitable access to residents.

### Implementing Actions

1. Establish land acquisition goals for parks and open space in the Howard County Land Preservation, Parks and Recreation Plan (LPPRP), and prioritize parks and open space acquisition within communities with low park equity.
2. Establish countywide goals and priorities in the LPPRP for recreation facilities, including community centers in underserved areas, and programs that are accessible to all residents.
3. Build partnerships within county government and with other organizations across the County to efficiently share resources.
4. Use flexible designs for parks and open space in more urban areas, such as plazas, pocket parks, and amphitheaters.
5. Partner with other county departments to link parks, open space, and recreation facilities to surrounding communities through transportation improvements.
6. Explore the development of a commercial athletic facility. The facility could be owned by the County, privately, or in partnership.
7. Consider zoning changes that allow the use of large parcels for indoor and outdoor athletic facilities throughout the County.

# County facilities

Planning for systemic renovations to county office space is ongoing. Many county office and ancillary buildings should continue to be programmed for routine maintenance and systematic renovations to extend their useful lives. Continual investment to maintain and enhance these buildings are important and should be evaluated and prioritized during the County's Capital Improvement Program (CIP) process.

The County recently leased facilities to relocate staff from the now-demolished Dorsey Building, which was replaced with the new Howard County Circuit Courthouse. The lease arrangements for those facilities are typically for 10 years, or within the timeframe of HoCo By Design. Meanwhile, the County also acquired new properties—for a variety of reasons—including the Flier building, part of Long Reach Village Center, properties in the Route 1 Corridor, and buildings in Ellicott City. There is opportunity to evaluate the County's portfolio of leased and owned spaces over the long-term timeframe of HoCo By Design.

## INF-6 Policy Statement

Continue to invest judiciously to maintain and enhance county facilities and assess county agency space needs against the County's portfolio of spaces.

## Implementing Actions

1. Use the Capital Improvement Program to evaluate and prioritize county building renovations.
2. Establish county space standards and evaluate the efficiency of county agency space usage. Assess future county agency needs for space.
3. Determine whether it is in the County's best interest to continue all or some leases. Consider opportunities to purchase leased space or construct new office and/or mixed-use spaces.
4. Determine whether it is in the County's best interest to continue to own or surplus various properties. Consider finite land supply and potential future costs of acquisition as part of such evaluation.





# Allied Agency Agencies' Facilities and Private Partners

## Howard County Library System

The Howard County Library System (HCLS) is an allied agency, like the Howard County Public School System and Howard Community College, and is governed by a Board of Trustees. However, HCLS' annual capital and operating budgets are largely funded by and must be approved by the County each year.

Howard County Library consists of six branches. Three of these facilities—the East Columbia, Elkridge, and Savage branches—are approximately 20 years old. The 30-year-old Central Branch in Downtown Columbia was renovated in 2001. The Glenwood Branch was renovated in 2000, and the Miller Library in Ellicott City in 2011.

### INF-7 Policy Statement

Partner with the Howard County Library System to provide training and resources needed in the community.

### Implementing Actions

1. Evaluate the need for additional library capacity in the County to serve planned population and program growth. Provide necessary expansion of resources via additions or new facilities within the Planned Service Area.
2. Enhance the design of existing and any future libraries to both optimize the delivery of service at each library branch and help create a civic focal point. Where feasible, integrate libraries with other complementary public or private facilities.



## Howard Community College

The Howard Community College (HCC) is another allied agency and is governed by a Board of Trustees. However, the HCC's annual capital and operating budgets are largely funded by and must be approved by the County each year.

In addition to serving the varied academic needs of younger students, the college plays a significant role in workforce development by offering a wide range of career training services and professional certification programs. Additionally, lifelong learning programs and personal enrichment courses serve many senior residents. HCC's operating funds come from tuition and fees, Howard County, the State of Maryland, and other sources. Given the limitations on County bond funding, the burden of financing higher education activities cannot fall solely on the County.

HoCo By Design's Future Land Use Map (FLUM) designates HCC as a Campus character area. As more fully described in the Character Areas technical appendix, the Campus character area supports academic, medical, or office buildings; athletic facilities; event spaces; equipment; or other ancillary uses needed to support an educational, medical, or other large institution. This character area provides flexibility in that building uses and intensities may vary widely based on the institution's mission, available space, and site topography.

## Health Services

Howard County residents benefit from a wide variety of high-quality local health care providers and services, and from close proximity to excellent health care facilities and academic medical centers in the Baltimore/Washington region. The health care delivery system is complex and depends upon the resources of many organizations, including the Howard County Health Department, Howard County General Hospital, the Horizon Foundation, Sheppard Pratt, special nursing and assisted-living facilities, hospice services, urgent care clinics, numerous nonprofit providers, and private practitioners. As the Howard County population grows and medical needs evolve and expand, the County should continue to partner and support the entities that provide critical health care services to the community, especially if it furthers equitable access to healthcare.

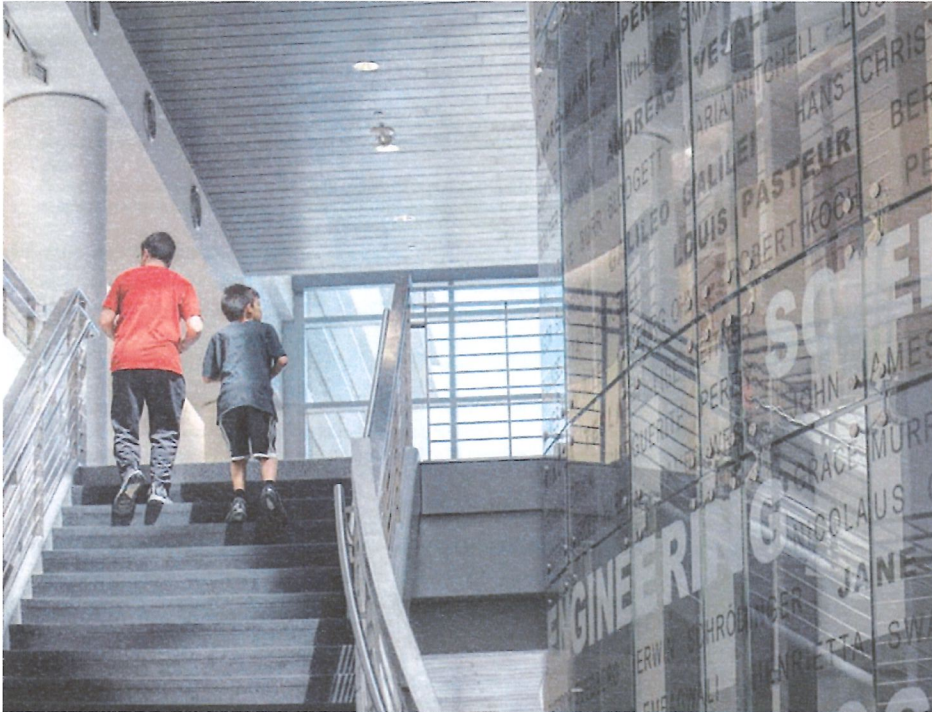
Recognizing the flexibility needed for large institutional campuses, HoCo By Design's Future Land Use Map includes a Campus character area that applies to Howard County General Hospital. Additional details are provided in the Character Areas technical appendix.

## INF-8 Policy Statement

Continue to support ~~the Howard Community College's expanding abilities to provide higher education for county residents and workers and partner with entities that provide critical services, programs, and infrastructure such as higher education and health care facilities.~~

### Implementing Actions

1. Continue the County's commitment to fund expansion of the Howard Community College (HCC) to accommodate enrollment and program growth. Support the HCC in obtaining funding from the State of Maryland and others to invest in the campus.
2. Continue to work with the Howard County Economic Development Authority, the private sector, and other institutions of higher education to meet workforce development and re-training needs, especially in science and technology-related fields.
3. Continue to expand non-credit course offerings and cultural programs that promote life-long learning and enhance community life.
4. Continue to support and partner with organizations that play a critical role in the health care delivery system, such as hospitals, to ensure there is adequate capacity.
5. Continue the County's commitment to support the capacity of our non-profit community to provide services that enhance residents' quality of life



## INF-9 Policy Statement

Continue to support medical service providers and help resolve emergency room wait times.

### Implementing Actions

1. Pursue immediate and long-term solutions to the County's overburdened hospital to reduce emergency room wait times.
2. Continue to support and enhance financial assistance for behavioral health programs established by the Hospital, Shepard Pratt and other nonprofit agencies.

# drinking Water Supply and Wastewater Treatment

## Public Water and Sewer Services

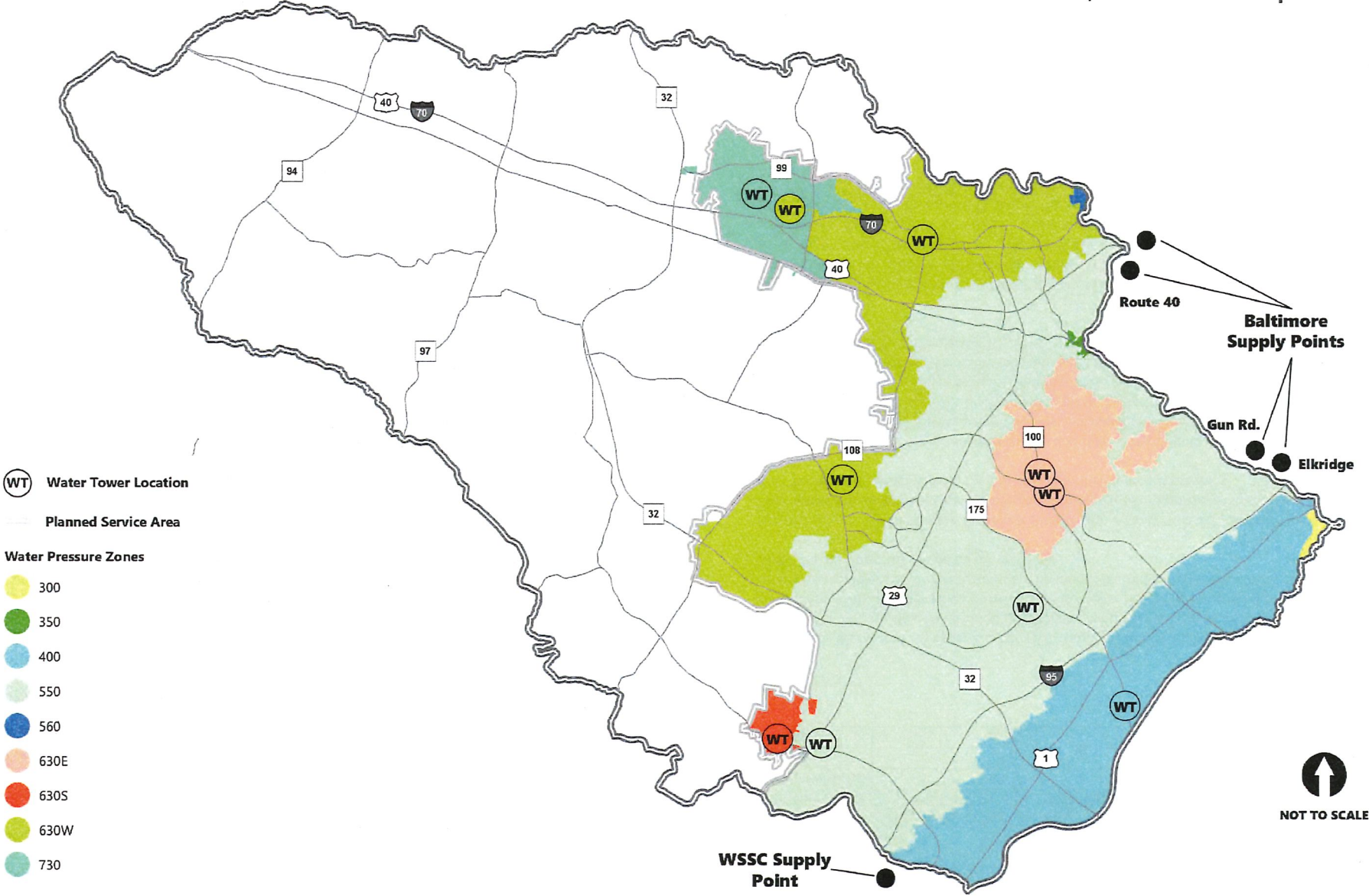
The location of Howard County's public water and sewer services are inextricably linked to the type, location, and intensity of future growth in the County. With these public services, businesses can operate more efficiently and homes can be located on smaller lots.

The County plans for the provision of public water and sewer facilities in the Master Plan for Water and Sewerage (the Master Plan). The Master Plan and any proposed amendments must be consistent with the General Plan. For capital project planning and the orderly extension of facilities, the Master Plan delineates service priority areas within the Planned Service Area (PSA). The County also implements a Water and Sewer Capacity Allocation Program that assigns priorities for new connections to the public water and sewer systems during the development plan review process to ensure demand does not exceed the available system capacity. At times, a developer may want service to a property earlier than specified by the Master Plan and is willing to construct planned facilities in advance of the County's capital project construction schedule. If the proposed development is an orderly extension of the system and is consistent with the General Plan and Subdivision and Land Development Regulations, the County grants a service priority area change so the development can occur. These service priority area changes are reflected in the annual updates to the Master Plan.

Prior to the provision of public water or sewer service, a property in the PSA must enter the County's Metropolitan District. All properties in the Metropolitan District are subject to fees, assessments, and charges that are dedicated to the Enterprise Fund, which pays for the construction, operation, maintenance, and administration of the public water and sewer systems. Maintenance of the existing water and sewer systems is an ongoing concern as portions of each system reach the design life of 50 years.

The County's Capital Budget and ten-year Capital Improvement Program (CIP), the Metropolitan District entry process, the development plan review process, and the Water and Sewer Capacity Allocation Program ensure the orderly expansion of the public water and sewer system. Through the self-sustaining Enterprise Fund, the County pays the construction costs for major facilities in the public water and sewer system and the developer pays the cost for the system extension to their individual development.

map 8-3: Water pressure Zones



## Public Water Supply

Howard County meets its bulk potable water needs from four connections with Baltimore City and one connection with the Washington Suburban Sanitary Commission (WSSC). Water is distributed to customers in the County by the Howard County Department of Public Works' Bureau of Utilities. In 2020, the public water system served 85% of Howard County residents and businesses. The remaining 15% were generally located in the Rural West and were served by private wells. Approximately 97% of residents and businesses located in the PSA were connected to public water.

The County's water system is divided into nine pressure zones, as shown in Map 9-3. The water from WSSC is normally used in the County's water pressure zone located east of Interstate 95 between Laurel and Jessup. If needed, the County system can pump water from WSSC to other areas of the County, and water from Baltimore City can be substituted for water from WSSC.

The primary water sources for Baltimore City include Loch Raven, Prettyboy, and Liberty Reservoirs, with the Susquehanna River as a backup source. Baltimore City, in addition to supplying water to Howard County, also provides water to Anne Arundel, Baltimore, Carroll, and Harford Counties. Water sources for WSSC are the Triadelphia and Rocky Gorge Reservoirs and the Potomac River. WSSC, in addition to supplying water to Howard County, also provides water to Montgomery and Prince George's Counties.

Howard County purchases water from Baltimore City and WSSC through a series of negotiated legal agreements, which were most recently updated in 2017 and 2009, respectively. As shown in Table 8-1, in 2020, the County's average daily demand for water was 25.1 million gallons per day (MGD). The County's agreement with Baltimore City could provide the County with as much as 38.5 MGD of average daily flow, and the agreement with WSSC could provide as much as 3.0 MGD of average daily flow.

The County is currently in the process of expanding its capacity to purchase water from WSSC as added insurance in case of an emergency. This move was motivated, in part, by damage to a water main connected to the Baltimore City system that was made temporarily unavailable by a collapsed road in 2018. The County is currently negotiating and studying a second connection with WSSC for an additional 7.0 MGD of average daily flow, in case a similar emergency occurs (not to serve as added capacity for additional development).

As shown in Table 8-1, the County's projected average daily water use in 2040 is 29.9 MGD and projected average daily flow is 48.5 MGD. The projected average daily water use was derived from growth projections modeled according to the Future Land Use Map (FLUM) and demand rates supplied by the Department of Public Works. Therefore, the supply of water is not expected to be a constraint on projected growth and development within the Planned Service Area through the year 2040. Considering the County is dependent upon outside sources for its public water supply, it should continue to closely monitor water consumption in relation to the rate of population growth and coordinate supply with bulk water service providers.

**Table 8-1: Public Drinking Water Supply and Demand**

Source	2020		2040	
	Average Daily Use (MGD)	Average Daily Flow (MGD)	Projected Average Daily Use (MGD)	Projected Average Daily Flow (MGD)
Baltimore City	22.1	38.5	26.3	38.5
WSSC	3.0	3.0	3.6	10.0
<b>Total</b>	<b>25.1</b>	<b>41.5</b>	<b>29.9</b>	<b>48.5</b>

## Groundwater

In the Rural West, drinking water is supplied by groundwater via individual wells that serve single lots, multi-use wells that serve a group of individuals on single lots and have a capacity greater than 1,500 gallons per day, and community wells that serve two or more lots. However, new privately owned or operated community wells or other community water supply systems are no longer permitted in the Rural West. There are also still a few areas within the PSA that are served by groundwater.

Howard County lies within the Piedmont Plateau and Atlantic Coastal Plain physiographic provinces. The Fall Zone forms a boundary between the two provinces and runs in a northeast to southwest direction roughly parallel with Interstate 95. Most wells in the County are in the Piedmont province.

The most recent study of groundwater quality and yield in the County is the Water Resources of Howard County, Maryland, published by the Maryland Geological Survey in 1995 as Bulletin 38. According to this study, there is generally an adequate supply of good-quality groundwater to serve projected ultimate development demand outside the PSA, even under drought conditions. However, this is a regional analysis that does not address individual well conditions. The ability to locate and tap groundwater in the Piedmont may vary significantly with well location because groundwater is stored in and travels through a network of fine cracks and fissures in the bedrock aquifer.

The withdrawal of water from groundwater supplies is regulated by the Maryland Department of the Environment (MDE), through the issuance of Water Appropriation Permits. Small water users, such as individual residences and agricultural users of less than 10,000 gallons per day, are exempt from permit requirements. Permit applications are reviewed to ensure that the quantity requested is available and reasonable, and that the withdrawal will not affect downstream or other users. To ensure the safety of well systems in the County, monitoring is conducted on a regular basis by the Health Department or the system owner, and the results are reported to MDE. Education for system owners is part of this monitoring process. The Health Department also regularly mails information to private residential and nonresidential property owners with wells about the need for routine well testing.



## Source Water Assessments

The federal Safe Drinking Water Act Amendments of 1996 require source water assessments (SWA) for public water supplies. The SWA evaluates the susceptibility of the public water supply source to various contaminants and contains recommendations to protect the source from these contaminants. Source water assessments are designed to promote local, voluntary source water protection programs. For more information about SWAs and other water quality issues, please see Technical Appendix A: Environment.

## Water Conservation

Clean safe drinking water is a valuable resource that should be used as wisely as possible. Potable water is currently used to flush toilets, water lawns and gardens, and wash vehicles, when non-potable water would suffice. To help conserve water, the State requires low-flow toilets and showerheads in all new residential construction. As a result of these fixture requirements and other water saving measures, such as new water efficient dishwashers and washing machines, per capita water consumption continues to decrease in the County.

Hot dry summer days place the greatest demand and strain on the public drinking water supply, as large volumes of water are used for landscape irrigation and other outdoor uses, such as pools, spas, and vehicle washing. Climate change is projected to bring warmer temperatures and more intense droughts, which could further increase demand for outdoor water use. Additional water conservation in homes, gardens, and businesses would help the County manage water resources more sustainably. Public outreach and education, as well as financial incentives, can encourage increased water conservation by residents and businesses.

Relatively easy conservation measures include using rain barrels to collect rainwater for outdoor watering, replacing lawns with native plants that require less watering once established, and installing water conserving fixtures and appliances. More complex measures include using cisterns to collect rainwater for irrigation of commercial landscapes and playing fields, or for indoor non-potable uses, and reusing greywater. Greywater reuse or recycling takes water from washing machines, sinks, and bathtubs for non-potable uses, such as flushing toilets and irrigation. Rainwater harvesting and greywater reuse for non-potable indoor uses have been discouraged or prohibited due to human health concerns. Building codes and regulations should be reviewed and modified where necessary to remove impediments for retrofitting existing and building new homes and businesses with water conservation and reuse practices and technology.

## INF-910 Policy Statement

Ensure the safety and adequacy of the drinking water supply and promote water conservation and reuse.

## Implementing Actions

1. Continue to program capital projects for capacity expansion and systemic renovations in the public drinking water system through the Master Plan for Water and Sewerage.
2. Encourage large development sites added to the current Planned Service Area (PSA) and large redevelopment sites within the PSA to implement water conservation and reuse practices and technology.
3. Modify codes and regulations, as needed, to remove impediments for existing development, new development, and redevelopment to implement water conservation and reuse practices and technology.
4. Allow and promote greywater reuse for non-potable uses.
5. Conduct public outreach and education to encourage greater water conservation in homes, gardens, and businesses.
6. Provide incentives to encourage property owners to install water conserving fixtures and appliances.

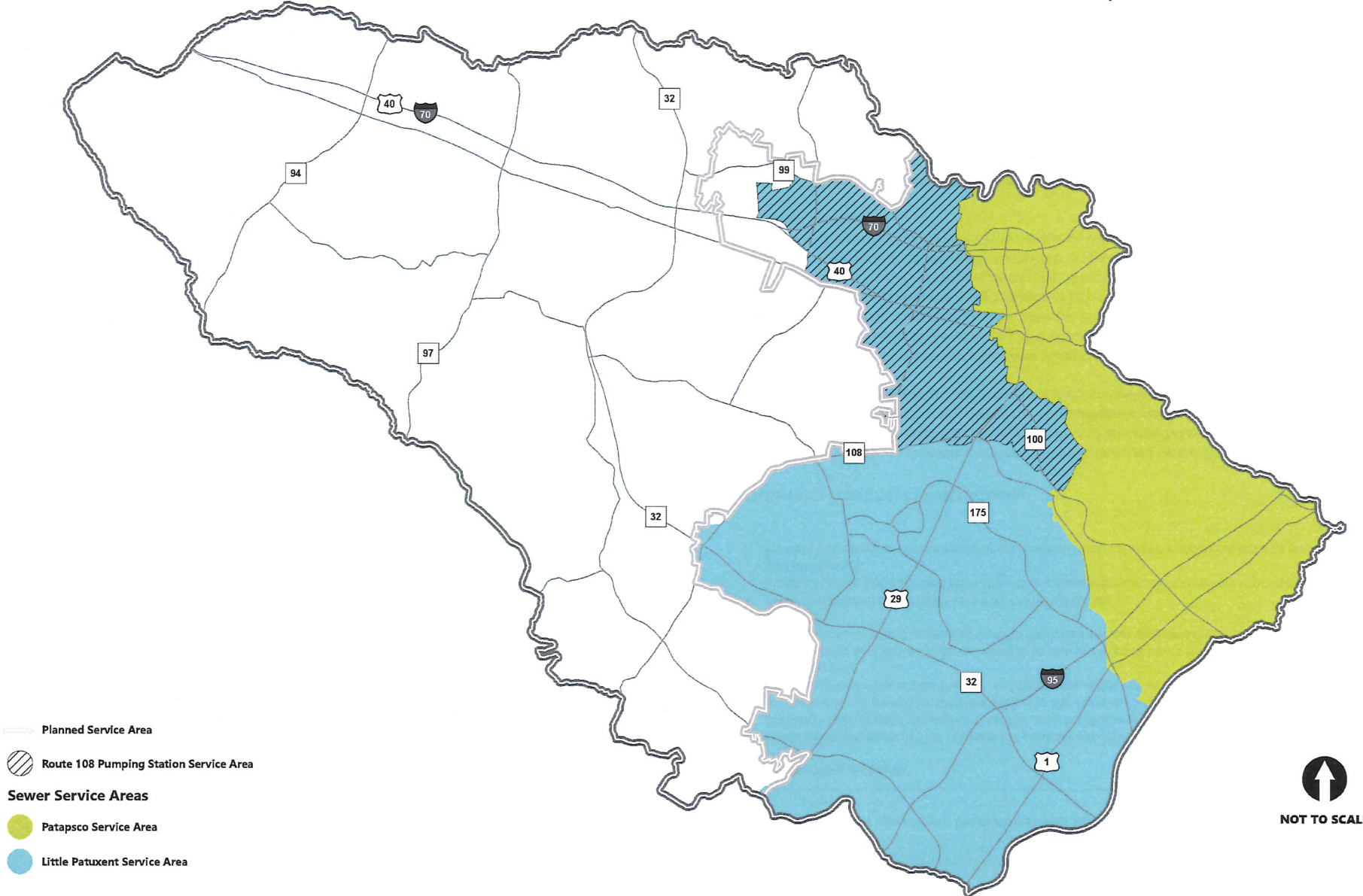
## Wastewater Treatment Plant Capacity

Howard County's public wastewater treatment system is managed by the Department of Public Works' Bureau of Utilities, which manages both the collection system and the Little Patuxent Water Reclamation Plant. In 2020, approximately 84% of the County's residences and businesses were served by the public sewer system. The remaining 16% were generally located in the Rural West and were served by private septic systems.

Howard County is split between two major river watersheds. Approximately 75% of the County falls inside the Patuxent River watershed, and the remaining 25% falls inside the Patapsco River watershed. Where possible, the County uses the natural topography of the Patuxent River and Patapsco River watersheds to provide sewer service, and relies on a gravity-fed system of smaller pipes to collect and convey wastewater into progressively larger main collector lines. If needed, a pumping station is used to convey wastewater over hills or difficult terrain. Depending on the watershed where the wastewater originated, the wastewater will end up at either the Little Patuxent Water Reclamation Plant (WRP) in Savage or Baltimore City's Patapsco Wastewater Treatment Plant (WWTP) for treatment.

The Route 108 Pumping Station service area, as shown in Map 8-4, is a large sub-service area that provides system flexibility. This area is geographically part of the Little Patuxent WRP service area but, if needed, the County may divert flows from this area to the Patapsco WWTP service area.

map 8-4: Sewer Service areas



As shown in Table 8-2, average daily use at the Little Patuxent WRP in 2020 was 21.0 MGD, and the plant has a treatment capacity of 29.0 MGD. The projected average daily use at the plant in 2040 is 24.6 MGD. The projected average daily use was derived from growth projections modeled according to the Future Land Use Map (FLUM) and demand rates supplied by the Department of Public Works. So at present, the plant's permitted treatment capacity is adequate through 2040.

The Patapsco WWTP is shared by Howard, Baltimore, and Anne Arundel Counties, and Baltimore City. As shown in Table 8-2, Howard County's share of total capacity at the plant (73.0 MGD) is 12.4 MGD. The County's share of capacity at the plant is secured through a negotiated legal agreement with its neighboring jurisdictions, which was most recently updated in 1984.

As shown in Table 8-2, County homes and businesses in the Patapsco River watershed generated 8.2 MGD of wastewater in 2020. Growth projections indicate that the County's average daily use at the Patapsco WWTP in 2040 will be 9.7 MGD. Howard County's share of the plant's treatment capacity in 2040 is adequate to meet future needs.

**Table 8-2: Wastewater Treatment Plant Use and Capacity**

Treatment Plant	2020		2040	
	Average Daily Use (MGD)	Average Daily Capacity (MGD)	Projected Average Daily Use (MGD)	Planned Average Daily Capacity (MGD)
Patapsco	8.2	12.4	9.7	12.4
Little Patuxent	21.0	29.0	24.6	29.0
<b>Total</b>	<b>29.2</b>	<b>41.4</b>	<b>34.3</b>	<b>41.4</b>

### National Pollutant Discharge Elimination System Permits

Wastewater treatment plant capacity, including the expansion of existing plants or the addition of new plants, is controlled by the National Pollutant Discharge Elimination System (NPDES) through permits issued by the Maryland Department of the Environment in accordance with the federal Clean Water Act. As part of Maryland's commitment to meet Chesapeake Bay cleanup goals established in the Chesapeake 2000 Agreement, annual nutrient (nitrogen and phosphorus) loading caps were established for all major (design capacity greater than 0.5 MGD) wastewater treatment plants in the State. These nutrient loading caps were incorporated into Maryland's portion of the 2010 Chesapeake Bay Total Maximum Daily Load (TMDL) and are enforced through the NPDES permit for the plant. (For additional information about TMDLs, please see the Ecological Health chapter.)

The Little Patuxent WRP has an annual nutrient loading cap that is based on a flow of 25 MGD and the use of enhanced nutrient removal (ENR), a biological treatment process. The plant also has an additional nutrient loading allowance for the retirement of the Milk Producers WWTP. As shown in Table 8-3, this gives the Little Patuxent WRP a total nutrient loading cap of 309,715 lbs/yr of nitrogen and 23,358 lbs/yr of phosphorus. The plant was within the nutrient loading cap for flows in 2020 and, based on projected demand, the plant will still meet its nutrient loading cap in 2040.

The Patapsco WWTP also has an annual nutrient loading cap that is based on a plant design capacity of 73 MGD and the use of ENR treatment. In January 2020, Baltimore City completed the addition of ENR facilities at the plant. This addition reduced planned capacity at the plant from 87.5 to 81.0 MGD. Table 8-3 gives the proportionate share of the nutrient loading cap that is available to Howard County, based on the County's allocation of 12.4 MGD. The County was within the nutrient loading cap for flows in 2020 and, based on projected demand, the County will still be within its nutrient loading cap at the plant in 2040.

**Table 8-3: Wastewater Treatment Plant Nutrient Loads and Loading Caps**

Treatment Plant	2020 Usage (MGD)	2020 Nutrient Loads (lbs/yr)		2040 Usage (MGD)	2040 Nutrient Load (lbs/yr)		Nutrient Loading Cap (lbs/yr)	
		Nitrogen	Phos.		Nitrogen	Phos.	Nitrogen	Phos.
<b>Patapsco</b>	8.2	89,314	6,699	9.70	106,300	7,972	151,057	11,334
<b>Little Patuxent</b>	21.0	192,052	19,205	24.60	224,655	22,465	309,715	23,358





Future growth within the PSA beyond that currently projected could require more wastewater treatment plant capacity than the County has available under current NPDES permits and/or interjurisdictional agreements. Should the County need additional treatment capacity at the Little Patuxent WRP, securing an NPDES permit for the increase may require a plant expansion or additional treatment facilities. The last expansion of the plant used the entire parcel on which the plant is currently located, but the County owns an adjacent parcel that could be used to add capacity, if needed. The need for additional capacity could be reduced if future development or redevelopment inside the PSA minimized increased sewer flows and the nutrient concentration in those flows. This outcome could be achieved through a combination of water conservation and reuse.

Nutrient discharges from wastewater treatment plants can also be managed using reclaimed water (treated wastewater) and nutrient trading. In 2014, Howard County developed the Conceptual Reclaimed Water System Master Plan and the Reclaimed Water Management Plan, which is a supplement to the Master Plan for Water and Sewerage. Based on the standards established by MDE in its Guidelines for Use of Reclaimed Water, the effluent from the Little Patuxent WRP is suitable for all approved reclaimed water uses, including irrigation, dust control, cooling, aggregate washing, and concrete mixing.

Reclaimed water is currently being diverted from the Little Patuxent WRP to Fort Meade for cooling purposes. Fort Meade is responsible for disposal of the water after use. A reclaimed water distribution system is currently being constructed to allow effluent from the Little Patuxent WRP to serve industrial customers along the Route 1 Corridor. This would be one of the first wastewater reuse facilities in Maryland. It is expected that only large volume, non-potable water users will be interested in connecting to the system. Once reclaimed water has been reused, it will be returned to the sewer collection system, depleted in the reuse process, or discharged elsewhere. Reuse of reclaimed water from the Little Patuxent WRP may help meet the plant's nutrient cap by reducing discharges from the plant.

Nutrient trading may also help the County address the nutrient loading cap, but it must take place within the framework of Maryland's Water Quality Trading Program. The program divides the State into three large trading regions: the Potomac Tributary Basin, the Patuxent Tributary Basin, and the Eastern Shore and Western Shore Tributary Basin, including the Susquehanna River watershed. The Little Patuxent WRP is located within the Patuxent Tributary Basin, and the Patapsco WWTP is located within the Eastern Shore and Western Shore Tributary Basin. Nutrient trading may take place only between sources within the same basin, and the trade is implemented through the plant's NPDES permit system.

Options for nutrient trading include the following:

- Acquire point source discharge credits from other dischargers.
- Upgrade treatment at an existing minor WWTP (a plant with a design capacity of less than 500,000 gallons per day).
- Retire an existing minor WWTP after connecting its flow to a biological nutrient removal or ENR facility. The County pursued this option by connecting the MD-VA Milk Producers WWTP to the Little Patuxent WRP, and the Little Patuxent plant was given credit for the additional nutrient reductions provided by ENR treatment.
- Retire an existing septic system by connecting it to a WWTP with ENR. The County has also pursued this option.
- Use land application of wastewater with pre-treatment and nutrient management controls.
- Acquire credits from best management practices installed to address nonpoint (or diffuse) sources of pollution.

Given the influence nutrient loading cap limits have on future capacity at the Little Patuxent WRP and the Patapsco WWTP, the County should continue to look for opportunities to expand wastewater reuse and investigate options for nutrient trading to maintain the nutrient caps at the treatment plants.



## INF-1011 Policy Statement

Ensure the adequacy of the public wastewater treatment system.

### Implementing Actions

1. Continue to program capital projects for capacity expansion and systemic renovations in the public wastewater treatment system through the Master Plan for Water and Sewerage.
2. Encourage large development sites added to the current Planned Service Area (PSA) and large redevelopment sites within the PSA to minimize increases in flow and minimize the nutrient concentration in flow sent to the wastewater treatment plants.
3. Expand reclaimed water reuse and nutrient trading to reduce nutrient flows and help maintain the nutrient cap at the Little Patuxent Water Reclamation Plant and the Patapsco Wastewater Treatment Plant.
4. Continue regular coordination with Baltimore City to ensure Howard County can meet some of its wastewater treatment needs via the Patapsco Wastewater Treatment Plant.

## Septic Systems

Homes and businesses in the County that are not served by public sewer—nearly all of which are located outside of the Planned Service Area (PSA)—use septic systems to treat their wastewater. Septic disposal systems may be individual sewerage systems that serve single lots, multi-use sewerage systems that serve a group of individuals on a single lot and have a treatment capacity greater than 5,000 gallons per day, or community sewerage systems that serve two or more lots. New privately owned or operated community sewerage systems are no longer permitted outside the PSA, and the only publicly owned and operated community sewerage systems permitted are shared sewage disposal systems. In 2020, approximately 17,361 households and a small number of businesses and institutions used private septic systems or shared sewage disposal systems to treat an estimated 5.3 million gallons of wastewater annually.

Generally, soils throughout the Rural West can support septic system drain fields, except for Lisbon—a problem area because of small lot sizes, marginal soils in some areas, and aging systems. The County evaluated Lisbon for well and septic system concerns and proposed a shared sewage disposal system in 2008; however, residents were not supportive of the proposal. Some of the problem lots may need holding tanks if suitable repair areas are not available. The Health Department also receives reports on a small number of individual failing septic systems in other areas of the County. Repairs to these systems are based on individual property conditions and available septic system repair areas.

Previous General Plans recommended the use of shared sewage disposal systems (SSDS) in limited cases for cluster subdivisions to protect groundwater and agricultural land in the Rural West. Generally, soils that are well-suited for septic systems are also well-suited for agriculture. With an SSDS, the common treatment system and drain field are placed on optimum soils, and this allows homes to be located in areas that are marginally or poorly suited for agriculture.

SSDSs are operated and maintained by the County, and operation, maintenance, repair, and replacement costs are financed by the system users. In 2020, there were 28 existing or planned SSDSs in the County. Six of these systems are large enough (with more than six dwellings served) to require an MDE groundwater discharge permit. Because the maintenance cost per house is very high for large systems, the County no longer allows any new large systems requiring an MDE permit.

Individual septic systems can be a water quality concern because of the amount of nitrogen the systems discharge to groundwater. Excess nitrogen in groundwater limits the use of groundwater as a water supply source. In addition, since groundwater is a source of base flow in streams, excess nitrogen in groundwater can also contribute to nutrient enrichment problems in streams and the Chesapeake Bay.

A variety of on-site treatment technologies have been developed to reduce the amount of nitrogen discharged from septic systems. Nitrogen reducing septic systems provide substantially better treatment, but they cost significantly more than a standard system and have ongoing operation and maintenance costs.

Maryland's Chesapeake Bay Restoration Fund has grant funds available for adding nitrogen reducing technology to existing septic systems; however, the priority area for these funds is the Chesapeake Bay and Coastal Bays Critical Areas. The County could also provide financial incentives, such as tax credits, to encourage the use of nitrogen reducing treatment for new and upgraded septic systems. As these systems become more numerous, the County should investigate options to establish a long-term inspection and maintenance program.

## INF-1112 Policy Statement

Reduce nitrogen loads from septic systems.

### Implementing Actions

1. Explore financial incentives to promote the use of nitrogen reducing treatment for new and upgraded septic systems.
2. Investigate options to establish and maintain a long-term septic system inspection and maintenance program for nitrogen reducing systems.

# Solid Waste Management

Howard County provides weekly curbside solid waste, recyclables, yard waste, and food scrap collections for most County residents, while private, commercial, and industrial enterprises contract with private waste collection companies.

One of Howard County's chief solid waste management goals is waste diversion through a program that promotes reduction, reuse, and recycling of materials within the County. Most of the solid waste collected is exported out of the County courtesy of a service agreement with the Northeast Maryland Waste Disposal Authority. All single-stream recyclables are sent to a contracted privately owned material recycling facility (MRF) in the County for further processing, marketing, and sales. Yard waste and food scrap collections are brought to the Alpha Ridge Landfill (ARL) and composted at the county-operated compost facility. Compost is then sold to commercial customers and landscapers, as well as residents, for gardens, lawns, and other uses.

The ARL is county-owned and operated, and is the sole operating landfill located inside the County's borders. County residents may also deposit recyclables free of charge at the Alpha Ridge Residents' Convenience Center, and deposit compostable materials at the Alpha Ridge Composting Facility.

In addition, Howard County is encouraging new solid waste technologies, such as the private construction and operation of bio-digester facilities. These facilities convert the methane gas generated by food waste decomposition into renewable clean energy at many food processing businesses within the County. The County should explore ways to intentionally support existing businesses pursuing sustainable initiatives, which will also serve to attract new businesses to the County.

The ARL site also includes the Alpha Ridge Transfer Station, which exports waste out of the County. The projected total waste generation rate of 2.26 tons per person per year is expected to remain stable for the foreseeable future, and the ARL's current landfill cell is not expected to reach capacity for many years. Moreover, there is additional space at the ARL site to develop approximately 6.79 million cubic yards of additional landfill if needed. As a result, the ARL should meet the County's waste disposal needs for the next 120 years.

## INF-1213 Policy Statement

Divert waste from landfills using a program that promotes reduction, reuse, and recycling materials within the County.

## Implementing Actions

1. Minimize the tons of waste each year that are exported from the County under an agreement with the Northeast Maryland Waste Disposal Authority.
2. Expand business opportunities in the County that focus on the recycle, reuse, or repurpose components of solid waste management.
3. Consider new solid waste technologies in the future to further reduce the waste footprint for Howard County.

