

CAPITAL IMPROVEMENT PLAN

This section includes a description of the major capital achievements of fiscal year 2018 and the programs that make up the 2019 – 2024 Capital Improvement Plan. Included are program descriptions and a listing of the budgeted appropriations by project category.





COMMUNITY SERVICES

CAPITAL IMPROVEMENT PLAN

The Capital Improvement Plan for the Department of Community Services is comprised of projects that help provide a comprehensive and coordinated system of facilities for the provision of high-quality recreational, educational, health and human services, and other services to Gwinnett County residents. Projects include the construction and/or renovation of senior centers, community centers, and parks and recreational facilities. Parks and recreation projects involve providing quality parks and recreational facilities such as passive and active park land, sports fields, tennis complexes, aquatic centers, multi-use trails, playgrounds, picnic pavilions, and other park amenities.

2018 Capital Achievements

In 2018, the Department of Community Services completed several park projects:

- Jones Bridge Park pavilion and restroom improvements
- Mountain Park Park multipurpose field renovation and conversion to synthetic turf
- Mountain Park Park playground replacement
- Freeman's Mill Park mill renovation
- E. E. Robinson Park fountain addition
- E. E. Robinson Park maintenance building renovation
- George Pierce Park playground replacement
- Gwinnett Environmental and Heritage Center back plaza addition
- Road and trail paving projects in 10 parks
- Countywide Trails Master Plan (with Department of Transportation)

At the end of 2018, the following park and greenway projects were underway:

- Tribble Mill Park greenway connection (Harris Trail) and shoals trail renovation
- Club Drive Park Phase II
- Freeman's Mill Park mill interpretive exhibits
- Alexander Park Phase II
- Graves Park improvements
- Historic property improvements: Hudson Nash House relocation and restoration, the Big House (Promised Land) restoration, and the Elisha Winn House parking and ADA improvements
- Historic property land acquisition at Promised Land site (1.192 acres)
- Park land acquisition for expansion of Bethesda Park (33.23 acres)
- Rhodes Jordan Park multipurpose field renovation and conversion to synthetic turf
- Lucky Shoals Park restroom building replacement and ADA access improvements
- George Pierce Park/Ivy Creek Greenway trailhead improvements
- Aquatic equipment replacement at Rhodes Jordan Park, Mountain Park, and Collins Hill Aquatic Centers
- Dacula Park multipurpose field conversion to synthetic turf
- Singleton Park reconstruction and greenway trail development
- Tribble Mill Park Chandler Road entrance and parking design and construction
- Sweetwater Creek Greenway design

2019 – 2024 Capital Improvement Plan

The 2019 capital budget and 2020 – 2024 Capital Improvement Plan for Community Services totals approximately \$91.8 million. Projects include:

- Greenways: Harris Trail at Harbins Park; Ivy Creek Greenway – F. Wayne Hill WRC and Section 2; Singleton Greenway; Shorty Howell to McDaniel Farm Park Greenway; and Rabbit Hill Park to Dacula Park Greenway
- Asset management
- Land acquisition
- Gwinnett Environmental and Heritage Center Adaptive Tree Canopy Experience
- Gwinnett Environmental and Heritage Center expansion
- Synthetic Turf Multipurpose Field Renovations: Shorty Howell Park, Lenora Park, and Rock Springs Park
- Park expansion: Dacula Park gymnasium and senior wing addition to activity building; and Lenora Park Community Center expansion to gymnasium building
- New park construction: Beaver Ruin Park and Discovery area park site
- Tribble Mill construction of an entrance on Chandler Road, with parking, restroom and trail connections
- New Comprehensive Parks and Recreation Master Plan

COMMUNITY SERVICES CAPITAL IMPROVEMENT PLAN

Project Category	2019	2020	2021	2022	2023	2024	Total 2019 – 2024
Community Services Administration	843,000	–	–	2,117,570	–	–	2,960,570
Community Services Miscellaneous/Contingencies	538,000	184,620	30,744	159,181	216,487	1,287,216	2,416,248
Environmental and Heritage Center	–	25,000	1,775,000	6,988,845	4,161,155	25,000	12,975,000
Fleet Equipment	894,500	1,194,420	775,098	627,705	3,640,760	2,502,172	9,634,655
Greenway/Countywide Trails Master Plan	3,960,000	2,750,000	2,400,000	–	–	–	9,110,000
Parks and Recreation	12,624,355	13,630,645	12,450,000	7,650,000	6,600,000	1,755,000	54,710,000
Total Community Services	18,859,855	17,784,685	17,430,842	17,543,301	14,618,402	5,569,388	91,806,473



GENERAL GOVERNMENT

CAPITAL IMPROVEMENT PLAN

The General Government Capital Improvement Plan is a diverse group of projects that will enhance and/or improve general government services such as information technology, courts, and the construction and maintenance of general government facilities. Also included within the general government plan are public safety and community services capital projects that are managed by the Department of Support Services.

Computer and Computer Systems projects involve upgrading and enhancing the technology infrastructure to support the County's information needs. Projects in this category include acquisition of new and replacement personal computers, peripheral equipment, and software applications, as well as upgrades to the systems, storage, networking, and communications infrastructure. Also included are various business applications and systems.

Other project categories are:

- General Government Facilities, which consists of projects related to the construction of new and/or improvements to existing County facilities
- Miscellaneous Projects, including studies and budgeted capital contingencies

2018 Capital Achievements – Support Services

MAJOR CONSTRUCTION PROJECTS

The following are highlights of major capital projects managed by the Department of Support Services in 2018.

- General Government:
 - Bicentennial Trail and Plaza: This project included the construction of a new public plaza to honor Gwinnett County's Bicentennial on the former site of Fire Station 15 in Lawrenceville. The project also includes a new sidewalk and trail system along Constitution Boulevard connecting the Gwinnett Justice and Administration Center (GJAC) with the Lawrenceville Lawn. Design was completed in 2017, and construction will be completed in early 2019. The project is funded by the General Government Capital Fund.
 - GJAC Front Entrance and Roadway Improvements: This project includes the realignment and reopening of Langley Drive, provision of a handicap parking area closer to the building, replacement of pavers from the front parking area to the front of GJAC, and construction of a new plaza. Construction began in late 2017 and was completed in 2018. The project was funded by the General Government Capital Fund.

- GJAC Courthouse Addition and New Parking Deck: The expansion of GJAC will provide additional space for the County’s judicial functions. The project includes a new courthouse building of approximately 180,000 square feet and a new parking deck for approximately 1,500 vehicles. The building will house a jury assembly space, court rooms, holding areas, and shell space for future growth. New cooling towers were completed in early 2018. This project is funded by the General Government Capital Fund and the 2009 SPLOST program.
- Public Safety:
 - Bay Creek Police Precinct and Alternate 911 Center: This project includes the design and construction of a new 12,100 square-foot police precinct and a 4,500 square-foot alternate 911 center. The facilities will be located on a shared site on Ozora Road at the entrance to Bay Creek Park. The precinct will enable the Police Department to improve coverage and response times in this area of the county. The 911 center will provide critical backup to the principal 911 center in Lawrenceville. Design was completed in 2017, and construction began in 2018 and will continue into 2019. This project is funded by the 2009 and 2014 SPLOST programs.
 - Fire Station 15: This project relocated Fire Station 15 from South Perry Street in Lawrenceville to State Route 124. Design began in fall 2016, construction started in the third quarter of 2017, and the project was completed in 2018. The project features a new compact design for the County’s fire stations. The 10,788-square-foot facility includes three drive-through apparatus bays, living and training accommodations, offices, a fitness area, and space for protective clothing and equipment. The project was funded by the 2009 and 2014 SPLOST programs.
 - New Georgia State Patrol Facility: This project is the development of a new State Patrol Post located at a former rest stop on I-85, accessed from Old Peachtree Road. The facility will be 10,780 square feet and includes living and office space for staff. The site also will accommodate vehicles from the Highway Emergency Response Operators (HERO) assistance program. Design was completed in 2018 with construction beginning in 2019. The project is funded by the Public Safety Capital Fund.
 - High Intensity Drug Trafficking Area (HIDTA) Facility Renovation: This project is a comprehensive renovation of a space that will serve as the Atlanta HIDTA office. Gwinnett County, in collaboration with the HIDTA team, will oversee renovation of this space. Design began in 2018 and construction will begin in 2019. This project is funded by federal grants administered by the White House Office of National Drug Control Policy (ONDCP).
- Community Services:
 - Norcross Senior Center: This project is an extensive renovation and expansion of the existing facility located in the Norcross Health and Human Services Center. Design began in the last quarter of 2017, and construction began in 2018. This project is funded by the 2014 and 2017 SPLOST programs.
 - Day Reporting Center (DRC): The Georgia Department of Community Supervision will operate the DRC from a 9,395-square-foot leased facility. Services will include onsite cognitive restructuring programs designed to change offenders’ adverse thinking patterns and to offer education and job training. A lease securing a permanent facility for the DRC was finalized in 2018. The interior renovation for the facility will be completed in the second quarter of 2019. This project is funded by the Georgia Department of Community Supervision.

CAPITAL MAINTENANCE PROJECTS

In 2018, the Capital Maintenance budget included \$13,378,232 in funding associated with 26 projects. The following projects were completed in 2018.

- General Government:
 - Gwinnett Justice and Administration Center: Continuation of restroom plumbing upgrades, implementation of two additional phases of comprehensive replacement of air distribution boxes on HVAC system, phase I and II of the replacement of can light fixtures in public areas with more efficient LED fixtures, and replacement of audio/video system in the auditorium
 - Court Annex: Upgrade of central control panel and replacement of courtroom audio/video systems
 - Central Services Facility: Retrofitting warehouse area lighting with more reliable and efficient fixtures
 - Gwinnett Historic Courthouse: Upgrade of elevator cab interior
 - Fleet: Installation of pre-engineered building for storage of surplus non-vehicle items
 - Multiple County facilities: Replacement of access controls systems on various buildings and implementation of first phase of work to upgrade stormwater ponds

- Public Safety:
 - Police Central Precinct: Replacement of fire alarm system
 - 911 Center: Upgrade of computer room cooling units
 - Comprehensive Correctional Complex: Selective replacement of fire sprinkler heads, replacement/upgrade of security control panels, and engineering associated with replacement of 10 rooftop HVAC units
- Community Services:
 - Pinckneyville Park: Replacement of HVAC units at Pinckneyville Park concessions
 - Shorty Howell Park: Replacement of fire alarm system at the Community Center
 - Lawrenceville Senior Center: Replacement of metal roof
 - Peachtree Corners Branch Library: Replacement of HVAC units
 - Collins Hill Branch Library: Replacement of HVAC units
 - Library branches: Patching, sealing, and restriping parking lots at three branches

2018 Capital Achievements – Information Technology

- Implemented an upgrade to the microwave network connecting all tower sites for the Motorola radio system. The upgrade is a critical part of the communications network for public safety and other county departments that utilize the Motorola radio system.
- Developed a custom billing system for the Department of Support Services (DoSS) in SAP. The billing system for Support Services allows accurate invoicing to their customers, utilizes the iNovah cashiering system to create better reporting accuracy, and ensures financial entries into SAP are completed without manual input.
- Created an archiving solution for the Department of Water Resources (DWR) for portions of data within the SAP ECC module. This process ensures that billing data is available immediately to the customer service representatives, and if they need to go further back in time they have the ability to retrieve the older data. This will be used as a proof of concept for other departments looking to archive data within SAP.
- Implemented a standardized warehouse management blueprint for Corrections to provide a consistent manner in which to track the ownership and maintenance activity of assigned weapons.
- Implemented a mobile scan gun solution for the Department of Fire and Emergency Services. This solution is used by the Fire and Emergency Services warehouse team to accurately track inventory in the warehouse.
- Implemented a new responsive website design for Gwinnett County. This included an overall user-friendly website which allows citizens to utilize all web functionality on desktops, laptops, and mobile devices.
- Upgraded the hardware used to support the Gwinnett County website and also provided high availability/disaster recovery capabilities by splitting hardware between GJAC and E-911 data centers.
- Implemented a redundant logging recorder for the Higher Ground system at the 911 center. This allows the recorded phone calls and radio traffic to have redundant copies for retrieval if needed. This is beneficial to all public safety areas for open records requests and internal affairs.
- Upgraded the Lucity system to the most current version for the Department of Community Services and the Department of Support Services. Lucity 2018 has advanced functionality features and includes a new tool for importing and exporting bulk data.
- Upgraded FileNet to IBM Forms Experience Builder (FEB) to replace IBM Forms which reached the end of its life cycle in September 2018. This upgrade created equivalents in FEB for each of the six IBM forms that needed conversion (BOC Agenda, BOC Rezoning Agenda, Tax, Invoices, Financial Supplement, and County Administrator Request). The key benefit achieved allows for continued software support and maintenance on this product.



- Implemented the Judicial Court Activity Tracking System (JCATS) Court Interpreters application which provides the court administration staff the ability to electronically manage interpreters by providing as-needed scheduling and automatic payment via SAP. JCATS Court Interpreters was previously managed through spreadsheets and manual invoicing. This project has improved the scheduling and payment turnaround time for the interpreters.
- Developed a Geographic Information Systems (GIS) Three Year Strategic Enterprise Plan in order to guide the direction, governance, design, and implementation of the GIS system and its components over the coming years of 2019, 2020, and 2021. The execution of this plan will enhance existing technology and facilitate future application upgrades.
- Replaced approximately 110 network switches that were reaching end-of-support at multiple locations including GJAC, DWR Central, E-911, Fire Headquarters, etc.
- Implemented Cisco Nexus 7710 Core Network switches to provide increased bandwidth, stability, and functionality for all voice, data, and video traffic that traverses the County's network each day. This high system capacity is designed to meet the scalability requirements of the County's network and telecommunications environments.
- Continued installation, upgrades, and replacements of video surveillance equipment at multiple sites throughout Gwinnett County including the Gwinnett Justice and Administration Center. The video system at various locations allows the agencies to retain their video for various needs such as evidence, lawsuits, medical claims, billing disputes, and vandalism deterrence.
- Completed the deployment of body worn video cameras to 485 police officers. This included collaborating closely with Police to coordinate training that enabled both Police and the District Attorney to share video evidence through the Evidence.com cloud portal.
- Completed the creation and solicitation of a Request for Proposal for the modernization of the entire public safety ecosystem that included Computer Aided Design (CAD), Law Enforcement Records Management Systems (LERMS), Fire Records Management Systems (FRMS), Automatic Vehicle Locators (AVL), and other valuable public safety systems. The contract is expected to be awarded no later than the first quarter of 2019. The subsequent implementation will take approximately 24 months.
- Continued the deployment and upgrade of public safety radios for Fire and Emergency Services, Police, Sheriff, Corrections, and the District Attorney's Office, totaling 1,255 radio units in 2018. These new radios provide enhanced interoperability with other jurisdictions and address the aging systems that were at "end-of-life."

2019 – 2024 Capital Improvement Plan

The 2019 capital budget and 2020 – 2024 Capital Improvement Plan for General Government totals approximately \$296.6 million.

Support Services

MAJOR CONSTRUCTION PROJECTS

The following major construction projects are scheduled for design and construction in 2019.

- General Government:
 - GJAC Campus Space Plan Implementation: This project will include space reconfigurations within GJAC and One Justice Square and relocation of some services to reunify functions, accommodate growth in personnel, improve efficiencies, and provide more convenient customer service.
 - GJAC Courthouse Addition and New Parking Deck: Phase I of the new parking deck will be completed early in 2019. Construction of phase II of the parking deck and the courthouse building will start in 2019. This project is funded by the General Government Capital Fund and the 2009 SPLOST program.
- Public Safety:
 - Bay Creek Police Precinct and Alternate 911 Center: Construction of a new 12,100-square-foot precinct and a 4,500-square-foot alternate 911 center began in 2018 and will continue into 2019. This project is funded by the 2009 and 2014 SPLOST programs.
 - Fire Station 13: This project is for the relocation of the Suwanee area fire station to a new, permanent location. The existing facility is 37 years old and is leased from the city of Suwanee. The project is being funded by the 2017 SPLOST program.
 - Crime Scene Investigation Processing Laboratory: The former morgue space within the Police Headquarters building will be used by Police for an evidence storage space. This project will be funded by the Public Safety Capital Fund.
 - New Georgia State Patrol Facility: The design of a new State Patrol Post was completed in 2018, and construction is scheduled to start in 2019. The project is funded by the Public Safety Capital Fund.
- Community Services:
 - Duluth Branch of the Gwinnett County Public Library: This project is the relocation of the Duluth Branch to a new facility of approximately 22,000 square feet. An intergovernmental agreement with the city of Duluth was approved in January 2016. Design was completed in 2018 with construction scheduled to start in 2019. This project is funded by the 2009 and 2014 SPLOST programs.
 - Norcross Branch of the Gwinnett County Public Library: This project is the relocation of the Norcross Branch to a new facility of approximately 22,000 square feet. Schematic design and design development were completed in 2018 with construction scheduled to start in 2019. An intergovernmental agreement between the city and County established the basis for development of the facility. This project is funded by the 2005, 2009, and 2014 SPLOST programs.
 - Norcross Senior Center: This project is an extensive renovation and expansion of the existing facility located in the Norcross Health and Human Services Center. Design began in the last quarter of 2017, and construction started in 2018 with expected completion in 2019. This project is funded by the 2014 and 2017 SPLOST programs.
 - Snellville Branch of the Gwinnett County Public Library: This project is the relocation of the Snellville Branch to a new facility of approximately 22,000 square feet. An intergovernmental agreement with the city of Snellville established the basis for development of this facility. Design began in 2018 with construction anticipated to start in 2019. This project is funded by the 2017 SPLOST program.

CAPITAL MAINTENANCE PROJECTS

A focus on capital maintenance projects continues in 2019. Some projects began in 2018, while others are newly programmed for 2019. The following projects are to be completed or newly implemented in 2019.

- General Government:
 - Gwinnett Justice and Administration Center: Continuation of restroom plumbing upgrades, replacement of carpet and seating in the auditorium, an atrium heating study, phase III of the replacement of can light fixtures in public areas with more efficient LED fixtures, video over internet protocol (IP) conversion, replacement of hot and cold well kitchen equipment, and replacement of security control station equipment

- Government Annex: Patching, sealing, and restriping parking lot
- One Justice Square: Engineering for replacement of the building’s central HVAC equipment
- Fleet Management: Surfacing of Fleet surplus vehicle parking area, replacement of HVAC, and upgrading interior lighting
- Courts Annex: Construction of new Juvenile courtroom and judge’s chamber and replacement of security control equipment
- Multiple County facilities: Continued replacement of access controls systems on various buildings and implementation of first phase of work to upgrade stormwater ponds
- Public Safety:
 - Police South Precinct: Roof replacement
 - Police West Precinct: Replacement of HVAC with addition of controls and replacement of fire alarm system
 - Multiple Fire facilities: Replacement of HVAC equipment at two fire stations, fire administration, and fire logistics building; replacement of fire alarm systems at six stations and the fire administration building; and replacement of access control systems
 - Fire Stations 6 and 23: Roof replacements
 - Fire Station 14: Bathroom renovation and expansion
- Community Services:
 - Pinckneyville Park: Replacement of fire alarm system and HVAC at Pinckneyville Community Center
 - Mountain Park Aquatic Center: Replacement of fire alarm system at Mountain Park Aquatic Center
 - Dacula Park: Replacement of HVAC units on concession and restroom buildings
 - Centerville Branch Library and Community Center: Replacement of fire alarm and security systems and replacement of Community Center HVAC units
 - Lucky Shoals Community Center: Replacement of HVAC units

Information Technology

- Continue upgrades and improvements to enhance public safety operations. These projects include modernization of public safety information systems, a staffing management upgrade for Fire/EMS services, an E-911 digital phone system upgrade, redundant logging recorders, Emergency Operations Center audio visual equipment upgrades, and the continued implementation of the Body Worn Cameras project.
- Continue to enhance the information security program through the deployment of multi-factor authentication, acquiring managed security services and other critical cyber security solutions. These solutions work together to reduce the risk of unauthorized access to the County IT environment.
- Continue installation, upgrades, and replacements of video surveillance equipment at multiple sites throughout Gwinnett County. The video system at various locations allows agencies to retain videos for evidence, lawsuits, medical claims, billing disputes, vandalism deterrence, etc.
- Continue enhancements and improvements to Gwinnett County’s public website including replacing the hardware to provide better accessibility and providing more useful functionality for Gwinnett County employees and residents.
- Continue focus on network and security enhancements for reliability, business continuity, and better protection against malware, ransomware, and malicious websites.
- Continue expansion of the network and communications infrastructure, including wireless access (WLAN), virtual private networks (VPN), cellular network connectivity, firewalls, and various security platforms.
- Procure updated network equipment, server hardware, software, and diagnostic tools necessary to better incorporate new technologies and support Gwinnett County’s continued growth and expansion.
- Purchase software, monitoring tools, peripheral devices, and other hardware for various departments throughout Gwinnett County. This project will provide for the updating of hardware and software and allow them to operate more effectively and efficiently.
- Pursue opportunities to leverage cloud computing to reduce technology costs while enhancing capabilities and County employees’ productivity.

GENERAL GOVERNMENT CAPITAL IMPROVEMENT PLAN

Project Category	2019	2020	2021	2022	2023	2024	Total 2019 – 2024
2040 Comprehensive Plan	200,000	–	–	–	–	–	200,000
Cities Share of 2017 SPLOST	31,691,558	33,689,431	34,194,773	34,707,694	8,547,413	–	142,830,869
Computers and Computer Systems	19,751,321	10,989,084	4,901,693	1,088,074	2,888,563	3,158,086	42,776,821
Contingencies and Miscellaneous Projects	4,665,890	174,790	84,385	117,754	70,000	137,787	5,250,606
Fleet Equipment	1,559,500	1,613,303	541,529	322,607	913,166	3,730,037	8,680,142
General Government Facilities	8,799,944	12,491,723	10,862,496	16,440,747	2,054,432	1,238,722	51,888,064
General Government Facilities – Civic Center Expansion	6,420,943	–	–	–	–	–	6,420,943
Judicial Facilities	100,000	100,000	100,000	–	–	–	300,000
Libraries	6,812,160	9,208,690	3,046,390	817,400	–	–	19,884,640
Park Renovations and Improvements	363,000	421,000	105,000	60,000	245,000	290,000	1,484,000
Police Facilities	5,694,333	41,000	146,300	439,000	–	120,000	6,440,633
Senior Service Facilities	5,300,000	–	3,450,700	–	–	–	8,750,700
Playground Equipment	–	–	88,000	–	–	–	88,000
E-911 Center HVAC Upgrade	–	239,000	–	–	–	–	239,000
Corrections Facility	238,000	571,700	384,000	–	–	–	1,193,700
Support Services Administration	209,000	–	–	–	–	–	209,000
Total General Government	91,805,649	69,539,721	57,905,266	53,993,276	14,718,574	8,674,632	296,637,118



PUBLIC SAFETY

CAPITAL IMPROVEMENT PLAN

The Public Safety Capital Improvement Plan consists of projects that preserve and protect the lives and property of Gwinnett County residents.

2018 Capital Achievements – Police Services

Achievements in 2018 pertaining to the Gwinnett County Police Department include the following:

- Major repairs and renovations: In 2018, Police Services began or completed the following projects:
 - Completed the restroom renovations at the Police Training Facility.
 - Began the re-stripping and sealing of five precinct parking lots. This will be completed in 2019.
 - Completed installation of the security fence at the Northside precinct, which included a security fence with gate motor.
- Police parking expansion: In 2018, Police Services completed grading disturbed areas and placement of gravel for temporary parking. In 2019, this project will continue with installing six security cameras and connecting to the county fiber optic network.
- Firearms replacement: In 2018, Police Services purchased 247 Glock 17s and one Glock 19. This portion of the project for 2018 is complete. In 2019, Police Services will be rolling this project into its operating budget for future replacements.
- New firearms training simulator: In 2018, Police Services completed the purchase of a new three-screen use of force simulator for the Police Training Facility.
- Public safety notification and response system project: This 2014 SPLOST project began in 2014 and was completed in 2018. This system is live and connects 141 Gwinnett County Public School facilities and four city of Buford school facilities to the Gwinnett County 911 Center.

2018 Capital Achievements – Fire and Emergency Services

Achievements in 2018 pertaining to the Department of Fire and Emergency Services include the following:

- Relocated Fire Station 15, including the installation of commercial laundering equipment for firefighter bunker gear
- Received one new aerial truck to replace an older unit
- Received two new pumpers to replace older units
- Completed the installation of commercial laundering equipment for firefighter bunker gear at Fire Station 5
- Completed the replacement of the emergency generator at Fire Station 17
- Replaced three various light-duty vehicles
- Outfitted all medic units with Stryker Stretcher power load system
- Repaired generator pad and sidewalk at Fire Station 6

2019 – 2024 Capital Improvement Plan

The 2019 capital budget and 2020 – 2024 Capital Improvement Plan for Public Safety totals approximately \$141.5 million. Some of the highlights of planned improvements are listed below.

Police Services

Police Services' capital improvement plans for 2019 – 2024 include the following existing capital projects: improvements to the training complex, purchase of a new aviation helicopter, major repairs and renovations project of the replacement of the carpet at the South Precinct, and the completion of the parking lot re-stripping and sealing. Projects added in 2019 include the addition of two backup generators at the Police Training Facility and a Police Situational Awareness and Crime Response Center.

Fire and Emergency Services

The 2019 – 2024 Capital Improvement Plan for the Department of Fire and Emergency Services includes the continued replacement of older fire apparatus and medic units (ambulances) within the department along with the various support vehicles used. Future plans call for the relocation of Fire Stations 13 and 14, the building of new Fire Station 32, the replacement of all department mobile radios, the replacement of fire alarm systems at various Fire and Emergency Services facilities, and the replacement of older HVAC systems within various Fire and Emergency Services facilities depending on system evaluations and age. The department wants to address the safety and health of firefighters by adding bunker gear storage rooms to fire stations that currently store gear in the apparatus bays. The department will evaluate the capacity and needs for Fire and Emergency Services, Police, and Corrections Resource Management. The department will coordinate with Support Services to identify facility priorities and land needs for future stations.



PUBLIC SAFETY CAPITAL IMPROVEMENT PLAN

Project Category	2019	2020	2021	2022	2023	2024	Total 2019 – 2024
Ambulances	2,644,400	2,723,730	2,805,440	2,889,610	1,656,958	–	12,720,138
Detention Center Renovations	–	–	–	569,981	–	–	569,981
Fire Apparatus and Equipment	4,218,445	4,057,131	4,098,384	4,138,645	325,000	1,057,762	17,895,367
Fire Facilities	324,000	3,275,000	5,536,881	300,000	325,000	350,000	10,110,881
Fire Station Relocation	–	–	–	–	5,534,485	–	5,534,485
Police Facilities	3,909,000	420,289	–	–	–	–	4,329,289
Development and Code Enforcement	40,000	244,800	–	42,448	432,973	541,057	1,301,278
Public Safety Administration	710,000	–	–	–	–	–	710,000
Public Safety Vehicles and Fleet Equipment	3,082,972	7,615,279	10,087,306	11,799,191	20,900,826	34,843,761	88,329,335
Total Public Safety	14,928,817	18,336,229	22,528,011	19,739,875	29,175,242	36,792,580	141,500,754



TRANSPORTATION

CAPITAL IMPROVEMENT PLAN

The Transportation Capital Improvement Plan consists of projects to improve the County's transportation infrastructure. Projects fall into three categories: Road Improvements (of which there are several sub-categories), Airport Improvements, and Transit.

The County's Road Improvement Program consists of the following:

- Major Roadway Improvements include new road construction, new alignments, and increasing the capacity of existing roads.
- Intersections/Traffic Operation Improvements include the addition of turn lanes and improvements of alignments of cross streets, sight distances, and signalizations, as well as Advanced Traffic Management System (ATMS) improvements.
- Bridges/Roadway Drainage Improvements consist of new construction or reconstruction of existing bridges and culverts up to sufficiency standards.
- Road Safety and Alignment projects correct safety deficiencies such as sight distances, horizontal and vertical alignments, and at-grade railroad crossings.
- School Safety projects improve traffic safety near schools with the installation of turn lanes at school entrances, installation of sidewalks, and signalization improvements.
- Sidewalks and Multi-Use Trails include projects to link existing sidewalk segments or link residential areas to nearby activity centers.
- The Unpaved Road category funds the paving of gravel and dirt roads throughout the county.
- The Rehabilitation and Resurfacing category renovates, rehabilitates, and resurfaces existing County roads to prolong the life of the road.

The County Airport Improvement category consists of various improvements to Gwinnett County's Briscoe Field, the third busiest airport in the state. Projects in the Transit category consist of the acquisition/replacement of buses and equipment and the construction of various transit facilities.

2018 Capital Achievements

The Department of Transportation's capital achievements in 2018 include the following:

- Completed the Comprehensive Transit Development Plan
- Began construction on traffic management system expansion on SR 316, Five Forks Trickum Road, Ronald Reagan Parkway, and Old Peachtree Road
- Began engineering for traffic management system expansion in city of Peachtree Corners
- Awarded funding through the Smart Communities Challenge for the development of a Connected Vehicle (CV) Master Plan to prepare for deployment of CV technology along the county road network
- Continued upgrading traffic management system network switches to Cisco switches for improved network security
- Completed engineering design for pedestrian crossing upgrade projects for multiple school and bus stop locations
- Completed 140 miles of resurfacing
- Completed revised concept report and began engineering for Sugarloaf Parkway Extension from SR 316 to I-85
- Completed engineering and began advertising for construction of SR 316 at Harbins interchange project
- Completed engineering of SR 324/Gravel Springs Road at I-85 interchange project
- Began engineering of I-85 at McGinnis Ferry Road Interchange
- Completed engineering and began advertising for construction of Dacula Road at US 29/SR 8/Winder Highway project
- Began construction of Cruse Road widening from Club Drive to Paden Drive
- Began construction of Hamilton Mill Road widening from Ivy Mill Drive to Sardis Church Road
- Began engineering of Spalding Drive widening and intersection improvement project
- Completed engineering, bid, and award of Holcomb Bridge Road at Thrasher Street project
- Began engineering of SR 20 widening from Buford Highway to Peachtree Industrial Boulevard
- Completed construction of SR 20 widening northbound from SR 316 to SR 124
- Began engineering of SR124/Scenic Highway from US 78 to Sugarloaf Parkway
- Completed construction of SR 20 widening from South Lee Street to Buford Highway
- Began construction of 30 projects including bridges, major roadways, school safety, and sidewalks
- Completed construction of 22 projects including bridges, major roadways, school safety, and sidewalks
- Began engineering of 15 projects including bridges, major roadways, sidewalks, school safety, and road safety
- Completed 14 in-house quick fix projects
- Completed 165 property acquisitions



2019 – 2024 Capital Improvement Plan

The 2019 capital budget and 2020 – 2024 Capital Improvement Plan for Transportation totals approximately \$432.9 million. Some of the major projects are as follows:

- Continue management of SPLOST programs
- Continue traffic signal equipment and guardrail replacement programs
- Begin construction of the Peachtree Industrial Boulevard Smart Corridor from the DeKalb County line to the Hall County line
- Complete the engineering design for traffic management system expansion projects on Cruse Road, Killian Hill Road, SR 120/Duluth Highway, SR 20/Loganville Highway, and Sugarloaf Parkway
- Deploy communication technology to all traffic signals not currently connected to the traffic management system to allow remote monitoring from the Traffic Control Center
- Begin construction on SR 324/Gravel Springs Road at I-85 interchange project
- Complete engineering and right-of-way acquisition and begin construction on the Dacula Road at US 29/SR 8/Winder Highway intersection and bridge replacement project
- Complete engineering and right-of-way acquisition and let to construction the I-85 at McGinnis Ferry Road interchange project
- Complete engineering and right-of-way acquisition and let to construction the Sugarloaf Parkway Extension from SR 316/University Parkway to I-85
- Complete engineering and let to construction Indian Trail Park and Ride improvements
- Complete commuter bus mid-life overhauls
- Resurface I-985 park and ride lot
- Design and construct new Gwinnett County Transit Center
- Acquire land, design, and construct two new park and ride facilities on SR 316
- Acquire land, design, and construct a park and ride facility in Peachtree Corners
- Design and construct new park and ride facility to serve Georgia Gwinnett College
- Upgrade local bus stops
- Purchase new and replacement buses and micro-transit vehicles
- Complete engineering and construct Airport Central Basing Area
- Purchase new collision diagramming software



TRANSPORTATION CAPITAL IMPROVEMENT PLAN

Project Category	2019	2020	2021	2022	2023	2024	Total 2019 – 2024
Airport Capital Improvements and Equipment	1,426,225	226,884	111,838	163,859	182,607	132,395	2,243,808
Bridge and Roadway Drainage Improvements	8,138,410	8,491,340	11,961,750	12,934,250	583,500	–	42,109,250
Cities Allocation-Roads	5,490,510	7,065,367	5,141,348	5,344,178	1,792,325	–	24,833,728
Intersection/Traffic Operations Improvements	11,297,875	11,380,625	8,318,125	4,428,125	7,345,625	295,000	43,065,375
Major Road Improvements	24,804,724	35,753,745	29,447,340	23,436,250	10,167,831	–	123,609,890
Neighborhood Speed Control	97,250	97,250	97,250	97,250	340,375	–	729,375
Pedestrian Safety/Sidewalks	7,743,444	6,517,152	3,874,018	2,485,466	2,693,961	–	23,314,041
Resurfacing/Rehabilitation	11,060,000	18,477,500	22,367,500	22,367,500	2,917,500	–	77,190,000
Road Program Management	4,004,750	5,750,000	2,000,000	2,000,000	3,190,462	–	16,945,212
Road Safety and Alignments	9,403,191	5,255,625	3,067,500	3,553,750	4,769,375	150,000	26,199,441
School Safety Program	3,403,750	2,674,375	2,188,125	972,500	4,619,375	–	13,858,125
Transportation Administration	3,965,000	–	–	–	–	–	3,965,000
Transit Facilities	1,200,000	–	–	–	–	–	1,200,000
Transit Program Miscellaneous/Contingencies	400,000	250,000	–	–	–	–	650,000
Transit Vehicles and Equipment	6,699,109	1,000,000	111,072	53,845	–	5,728,812	13,592,838
Transportation Planning	1,189,538	2,599,023	1,621,453	1,829,385	1,193,773	10,144,791	18,577,963
Unpaved Roads	194,500	194,500	194,500	194,500	–	–	778,000
Total Transportation	100,518,276	105,733,386	90,501,819	79,860,858	39,796,709	16,450,998	432,862,046



WATER RESOURCES

CAPITAL IMPROVEMENT PLAN

The mission of the Gwinnett County Department of Water Resources (DWR) is to provide superior water services at an excellent value.

DWR's Capital Improvement Plan consists of projects that provide clean, potable water for Gwinnett residents and businesses; collect and reclaim wastewater to protect the environment and promote the health, safety, and welfare of the public; and projects that help manage stormwater. These projects include construction of new facilities, improvements to existing water facilities, and projects that improve the efficiency of operations. The need for improvements or new facilities may be driven by increased demand, changes in regulatory requirements, required service level improvements, asset failure due to age, or a combination of these and other factors. The focus of DWR's current Capital Improvement Plan is the rehabilitation and replacement of aging infrastructure.

DWR operates and maintains two water production facilities with 248 million gallons per day (MGD) of production capacity and three water reclamation facilities (WRF) with 98 MGD of treatment capacity. DWR also operates and maintains 217 raw sewage pump stations, 10 water booster pump stations, 10 water storage tanks, 280 miles of pressurized sewer pipe, 2,791 miles of gravity sewer pipe, 1,467 miles of stormwater drainage pipe, and 3,781 miles of water main, serving approximately 173,653 sewer customers and 247,188 retail water customers. This infrastructure has a replacement value of more than \$9 billion. Projects in the Capital Improvement Plan are funded either by water and sewer revenue, stormwater fees, or SPLOST funds.

2018 Capital Achievements

Water and Sewer Capital Improvement Plan achievements are divided into four subprograms:

- Water Reclamation Facilities
- Collection System
- Distribution System
- Water Production Facilities

The **Water Reclamation Facilities program** includes projects for expansions of and improvements to the County's three water reclamation facilities as well as projects to support watershed protection required by the water reclamation facilities' National Pollutant Discharge Elimination System (NPDES) permits. In 2018, completed projects include:

- **F. Wayne Hill Nutrient Recovery Project:** The F. Wayne Hill Water Resources Center (FHWRC) has a very stringent effluent phosphorus permit limit. To achieve these low limits, phosphorus is removed biologically in cell mass and chemically in chemical precipitates from the wastewater. Phosphorus is ultimately removed from the facility in the dewatered biosolids sent to the municipal landfill. Unfortunately, during the biosolids treatment process, phosphorus can be released from the cell mass and recycle back to the beginning of the wastewater treatment process, requiring retreatment. This recycled phosphorus dramatically increases cost for chemicals and reduces the capacity of the facility. To prevent recycle, phosphorus can be tied up in a chemical precipitate called struvite (magnesium ammonium phosphate) during the biosolids treatment process. While formation of struvite reduces recycle of phosphorus, if the formation is not controlled it can coat the walls of pipes and dewatering equipment, thereby endangering both equipment and processes. This is happening now at the FHWRC and is requiring extensive maintenance to remove.

To prevent both the recycle of phosphorus and the coating of struvite on infrastructure, DWR initiated a Nutrient Recovery Project. The project installed facilities that control the formation of struvite, producing small struvite pellets that can be easily removed. The added benefit is that struvite is a slow release fertilizer and, in pellet form, is marketable. This By-Product Removal Agreement allows revenue to be collected from Ostara USA, LLC by the County for the struvite pellets. Ostara markets and sells the pellets.

The Nutrient Recovery Project effectively addressed the two aforementioned needs. Two processes were pilot tested at the FHWRC to determine the efficacy of the nutrient recovery processes. Both processes successfully reduced the nutrients coming off the plant's dewatering centrifuges. Following pilot testing, DWR conducted a Business Case Evaluation (BCE) comparing the long-term costs of nutrient recovery versus chemical addition to the digesters for nutrient removal. Nutrient recovery was determined to have the shortest payback versus chemical addition. This project was finalized and completed in 2018 and has been online producing fertilizer since then.

The **Collection System program** includes projects for expansion, replacement, and assessment of gravity sewer pipe, force mains, and wastewater pump stations. It also includes projects that improve cost effectiveness by installing gravity sewers to decommission pump stations. Projects completed in 2018 include:

- **Beaver Ruin Pump Station (PS):** The Beaver Ruin PS is a major pump station in the Gwinnett County Department of Water Resources wastewater conveyance system. The station plays a critical role in transferring flows from the center of the county and sludge from the Yellow River WRF to the FHWRC.

The Beaver Ruin PS had ongoing operational problems that caused DWR continual challenges of maintaining flows and avoiding spills. The problems were primarily mechanical and hydraulic and included: pump and motor misalignments, excessive pump vibrations, impeller and volute damage, excessive bearing fatigue, and numerous shaft failures. DWR invested considerable amounts of capital in the station. These efforts only partially resolved the problems. Improving the reliability of this critical pump station continued to be a key goal for DWR in 2018.

The Beaver Ruin PS Upgrade Phase 3 alleviated the present major mechanical problems by building a second stage pump station and separating the problematic two stage pumps. The phase 3 upgrade included new pumps, motors, and several other components at the site to make the station more reliable for GCDWR. This project was completed in mid-2018.

- **Wolf Creek Force Main:** The work that was performed under this project included replacements of existing water distribution mains with a new 8-inch and 12-inch ductile iron pipe (DIP) water main and installation of a new 8-inch diameter DIP gravity sewer along several streets near downtown Lilburn. The project involves the installation of approximately 11,600 linear feet (lf) of 8-inch diameter water main and 6,400 lf of 12-inch diameter water main, new valves and fire hydrants, abandonment of the existing water valves and water mains in place, salvaging of existing fire hydrants, 1,750 lf of 8-inch diameter gravity sewer line with 14 manholes, asphalt pavement restoration, and restoration of all disturbed areas to pre-construction conditions. This major rehabilitation project replaced aging infrastructure and extended sewer to newly available areas around main street in the city of Lilburn. This project was completed in late 2018.

The **Distribution System program** consists of projects associated with water meters, pressure management, and water distribution pipe extensions and replacement. The water distribution projects completed in 2018 include:

- 48-inch Pre-stressed Concrete Cylinder Pipe (PCCP) Critical Crossing Replacement (SR 316 and Cedars Road): DWR maintains 178 miles of water transmission mains ranging in size from 20-inch to 78-inch in diameter. Originally, 53 miles of PCCP transmission mains were installed in the 1970s. Due to high failure rates of PCCP water transmission mains, 38.78 miles have been replaced over the past 35 years, leaving 13.95 miles of PCCP remaining. DWR continues to systematically replace the PCCP with ductile iron pipe (DIP), addressing sections with the highest risk and consequence of failure first. At the completion of the entire PCCP replacement program, 13.29 miles of PCCP will be remaining. This specific project will replace the PCCP under SR 316 and Cedars Road and is the third and last of the critical crossing projects under the PCCP program to be constructed.
- 48-inch PCCP Replacement (I-85 Interchange at SR 324): This is another major PCCP replacement project that is located at the intersection of Old Camp Branch Road and continues along Camp Branch Road in Buford. This project included the installation of approximately 2,320 lf of 48-inch DIP transmission main, two fire hydrants, 100 lf of steel casing for proposed open cut, miscellaneous pavement restoration, and site restoration. DWR executed this project as part of the PCCP replacement program in coordination with the Georgia Department of Transportation (GDOT) to include GDOT's upcoming off ramp project which was completed at the same time in summer 2018.



The **Water Production Facilities program** includes projects for expansion and improvements to the two water production facilities and the booster stations and tanks. The following water facility rehabilitation projects were completed in 2018:

- Chlorine Disinfection Improvements: The Water Production Chlorine System Improvements Phase 1 project involves several safety improvements to the existing chlorination systems at the 150-MGD Lanier Filter Plant (LFP) and 98-MGD Shoal Creek Filter Plant (SCFP). The LFP and SCFP both use one-ton chlorine cylinders for feeding chlorine gas as the residual disinfectant for water treatment.

Both plants are currently operated so that chlorine gas is pressurized from the one-ton cylinder outlets to a common vacuum regulator. Installation of the cylinder-mounted vacuum regulators eliminated the use of the pressurized gas piping and thus mitigated the risk of a chlorine gas leak. In addition to installing vacuum regulators, DWR has installed a new gas detector system, upgraded the existing emergency cut off valves, and upgraded the ventilation system.

This construction contract was 210 calendar days (7 months) in duration. The contract required that work be completed at one plant prior to commencing work at the second plant in order to ensure that one filter plant was always fully functional. Furthermore, during construction work, temporary chlorination facilities were included in order to maintain continuous plant operations. This project was completed in early 2018.

- Lanier and SCFP Ozone System Renewal: DWR uses ozone as the primary disinfectant at the Lanier and the Shoal Creek Water Production Filter Plants. Ozone is also used to prevent taste and odor in drinking water. Three ozone generators were installed at the Lanier plant in the mid-1990s, and three were installed at the Shoal Creek plant in 2005. The ozone generator cores at both plants have experienced multiple failures in recent years due to their exposure to chlorinated water from the existing open-loop cooling water system. This project installed closed-loop cooling systems that allow adjustment to the cooling water chemistry to prevent damage to generator cores. In addition, the gas piping, water flow meters, programmable logic controllers (PLC), and instrumentation associated with the ozone generators were replaced or upgraded. Ozone is a highly toxic gas, and its use requires continuous ambient ozone and oxygen concentration monitoring to ensure safety of personnel and visitors. The objectives of this project were to provide a safe working environment and to provide efficient and reliable ozone systems at both water production plants. This project was completed in mid-2018.

The **Stormwater Capital Improvement Plan** contains projects related to stormwater pipe replacement, pipe lining, flood studies, drainage improvements, and dam rehabilitation.

In 2018, the following stormwater pipe replacements, drainage improvements, and rehabilitation projects were completed:

- 26,981 linear feet (lf) of pipe rehabilitation lining projects
- 4,618 lf of pipe replacement projects
- 121 stormwater pipe rehabilitation projects
- 36 stormwater pipe replacement projects
- 153 total stormwater pipe replacements and rehabilitation projects

2019 – 2024 Capital Improvement Plan

The 2019 capital budget and 2020 – 2024 Capital Improvement Plan for Water Resources totals approximately \$1.14 billion. Some of the major projects are as follows:

- **The Gwinnett County Water Resources Water Innovation Center:** The Gwinnett Water Innovation Center will be a premier location for research and problem-solving for water issues around the world. It will house three main functions: the Research Section, the Training Section, and the Public Education and Outreach Section. The Research Section will explore fundamental and applied technology through relationships with academia, other water utilities, and public-private partnerships. There will also be a focus on growing and supporting a water-technology community that will look at sustainable water resource management. The Training Section will allow DWR employees, along with other water industry professionals, to benefit from having access to the most up-to-date information, processes, and equipment. The Public Education and Outreach Section will provide opportunities for residents to experience hands-on learning that will lead to an understanding of the effect our water use and habits have on the environment and water resource management. This facility will promote public outreach and education, staff training, and research in the water field once completed. Gwinnett plans to partner with public and private entities to be a leader in innovation and continue to be a utility of the future, and this building is the cornerstone of that future collaboration.
- **Crooked Creek WRF – Construction Package (CP) 4 Improvement Project:** The Crooked Creek Water Reclamation Facility has been in operation for more than 20 years. The equipment and facilities are in need of rehabilitation or replacement to continue to meet permit standards and to increase safety and efficiency. DWR has been replacing and rehabilitating sections of the facility over the last five years. The previous construction packages addressed the influent pump station, headworks, operations and maintenance buildings, oxidation ditch #3 aeration, effluent filter media replacement and just recently, the rehabilitation of secondary clarifiers #5 and #6. The Crooked Creek WRF Improvement Project CP4 involves the upgrading or replacement of the remaining key processes within the existing Crooked Creek WRF including chemical addition facilities, activated sludge, additional secondary clarifiers, disinfection, post aeration, solids handling, and electrical systems. This construction contract is anticipated to last four years.
- **Lanier Raw Water Pump Station Water Intake and Pump Station Maintenance:** This project includes the replacement of the three existing 72-inch raw water intake pipes with two 72-inch end cap pipes with barrel screens, valve and actuator replacement, raw water sampling system, and installation of a flow meter on the discharge line.
- **Major Supervisory Control and Data Acquisition (SCADA) upgrades:** DWR intends to convert the existing Foxboro distributed control system to an open architecture system utilizing programmable logic controllers (PLCs) and Wonderware System Platform at the F. Wayne Hill Water Resources Center (FHWRC). To accomplish this, detailed design documents and technical specifications suitable for bidding purposes need to be produced to allow GCDWR to engage a general contractor to complete the conversion.

WATER RESOURCES CAPITAL IMPROVEMENT PLAN

Project Category	2019	2020	2021	2022	2023	2024	Total 2019 – 2024
Collection System Rehabilitation and Replacements	23,975,250	30,971,608	21,250,000	22,050,000	23,550,000	23,550,000	145,346,858
Interceptors and Sewers	–	50,000	50,000	50,000	50,000	50,000	250,000
Information Technology Systems and Applications	15,564,452	13,989,000	8,269,000	7,869,000	7,869,000	4,749,000	58,309,452
Miscellaneous Projects and Contingencies	50,695,513	55,775,585	37,991,761	23,204,894	22,155,947	19,209,235	209,032,935
Stormwater Management	32,620,129	31,703,396	35,351,792	30,618,396	30,565,000	29,985,000	190,843,713
Utility Relocations	1,272,784	2,250,000	2,250,000	2,250,000	2,250,000	2,250,000	12,522,784
Water and Sewer Plans and Studies	2,043,582	3,124,763	2,630,000	2,730,000	3,130,000	3,230,000	16,888,345
Water Production Facilities	15,701,030	14,838,940	11,559,520	9,550,629	9,550,629	10,223,426	71,424,174
Water Reclamation Facilities	54,342,343	40,349,051	38,154,917	54,900,000	56,500,000	76,000,000	320,246,311
Water Transmission/ Distribution	16,152,826	20,690,730	20,000,623	21,276,722	19,912,818	19,911,243	117,944,962
Total Water Resources	212,367,909	213,743,073	177,507,613	174,499,641	175,533,394	189,157,904	1,142,809,534



DID YOU KNOW

In 2018, Voter Registrations and Elections completed the first bilingual election cycle, providing election materials in English and Spanish.