

# PUBLIC WORKS

## DEPARTMENT MISSION STATEMENT

We ensure the technologically advanced design, maintenance, functionality, delivery, and cleanliness of the City's water services and resources, roadways, and greenways.

We place the utmost importance in valuing our employees and ensuring all are trained to be the most reliable, knowledgeable, environmentally conscious, and solutions-oriented professionals who provide for the City's stakeholder needs and concerns in an efficient and socially responsible manner. This fosters a better, safer, and healthier community for all to live, work, and play.

### Public Works Department Vision:

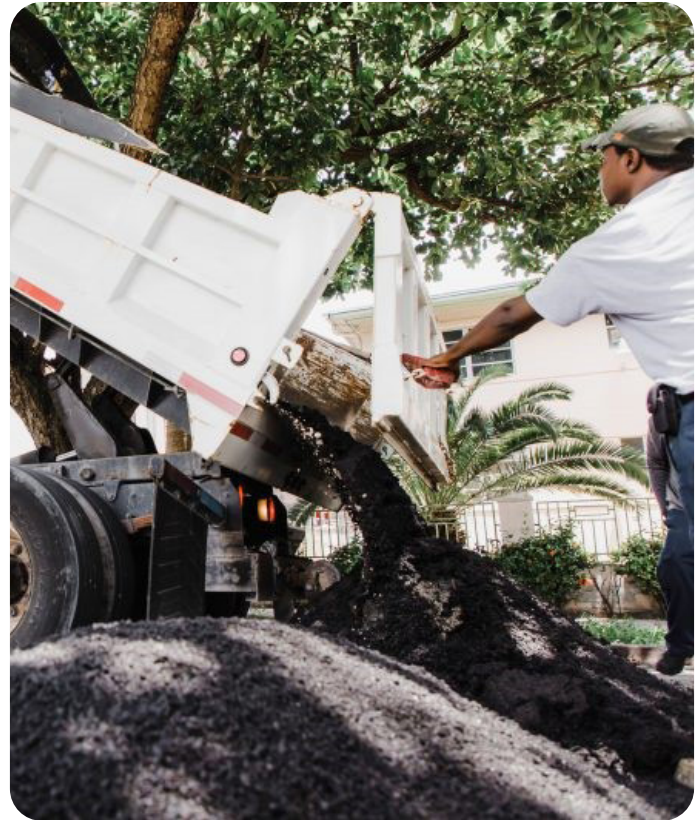
We strive to be a proactive, innovative, and dependable network of highly knowledgeable professionals who are skilled in providing stakeholders with optimal service and solutions to our community's most pressing infrastructure and environmental needs.

We are committed to providing effective and efficient public works services and managing the City's infrastructure to ensure the safety, health, and well-being of all visitors and residents in our vibrant, tropical, historic community.

## DEPARTMENT DESCRIPTION

The Public Works Department is a multidisciplinary department comprised of four divisions: Operations, Engineering, Sanitation and Greenspace Management. Our department provides project management, planning, design, construction, maintenance, repairs, and operation services for City infrastructure, including utility systems, roadways, and greenways. The department is also responsible for City cleanliness and manages the Solid Waste/Recycling Collection and Disposal Program. The department is represented by professional, semiprofessional, and licensed disciplines working in administration, engineering, streets and streetlights, water distribution, sewer collection, stormwater management, sanitation, and greenspace management.

The City facilities has 39 bridges managed by the Public Works Department includes 24 City-owned bridges; 140 miles of streets; 242 miles of sidewalks; 200 miles of curb and gutter; 33 miles of alleyways; 7,487 streetlights; 1,275 landscape up-lights; 841 bollard lights, 286 miles of underground wiring; 180 miles of water distribution piping mains; four water storage tanks with total storage capacity of 14 million gallons; six water pumping stations; 13,550 water meters; 152 miles of sewer mains; 122 miles of sanitary gravity sewer pipes; 3,160 sanitary sewer manholes; 23 sewer pump stations; 110 miles of stormwater pipes; 367 stormwater outfalls; more than 7,800 stormwater structures (stormwater manholes, storm drains and catch basins) and 49 stormwater pump stations.



## DEPARTMENT DESCRIPTION CONT'D

The Engineering Division is comprised of five sections: Engineering, Geographic Information Systems (GIS), ROW Management, as well as ADA and Elevator Safety. Engineering is responsible for plan review of the public and private projects within the City's right of way (ROW) and the engineering design of ROW projects. GIS is the keeper of the maps for the City's entire infrastructure, which includes water mains, sanitary sewer, and stormwater systems. ADA is responsible for reviewing and ensuring accessibility compliance in the City's construction projects and is also the liaison for employees, residents, and visitors for ADA accommodations and services. The Surveying Section is the first resource for all construction projects to coordinate the data acquisition of field information. Elevator Safety is responsible for the certification of all public and private elevators, escalators, moving walks and lifts within the city.

The Greenspace Management Division provides design, installation, and maintenance service to all city-designated properties, including gateways to the City, all municipal buildings, parking facilities, dunes, medians, swales, and landscape areas.

# PUBLIC WORKS

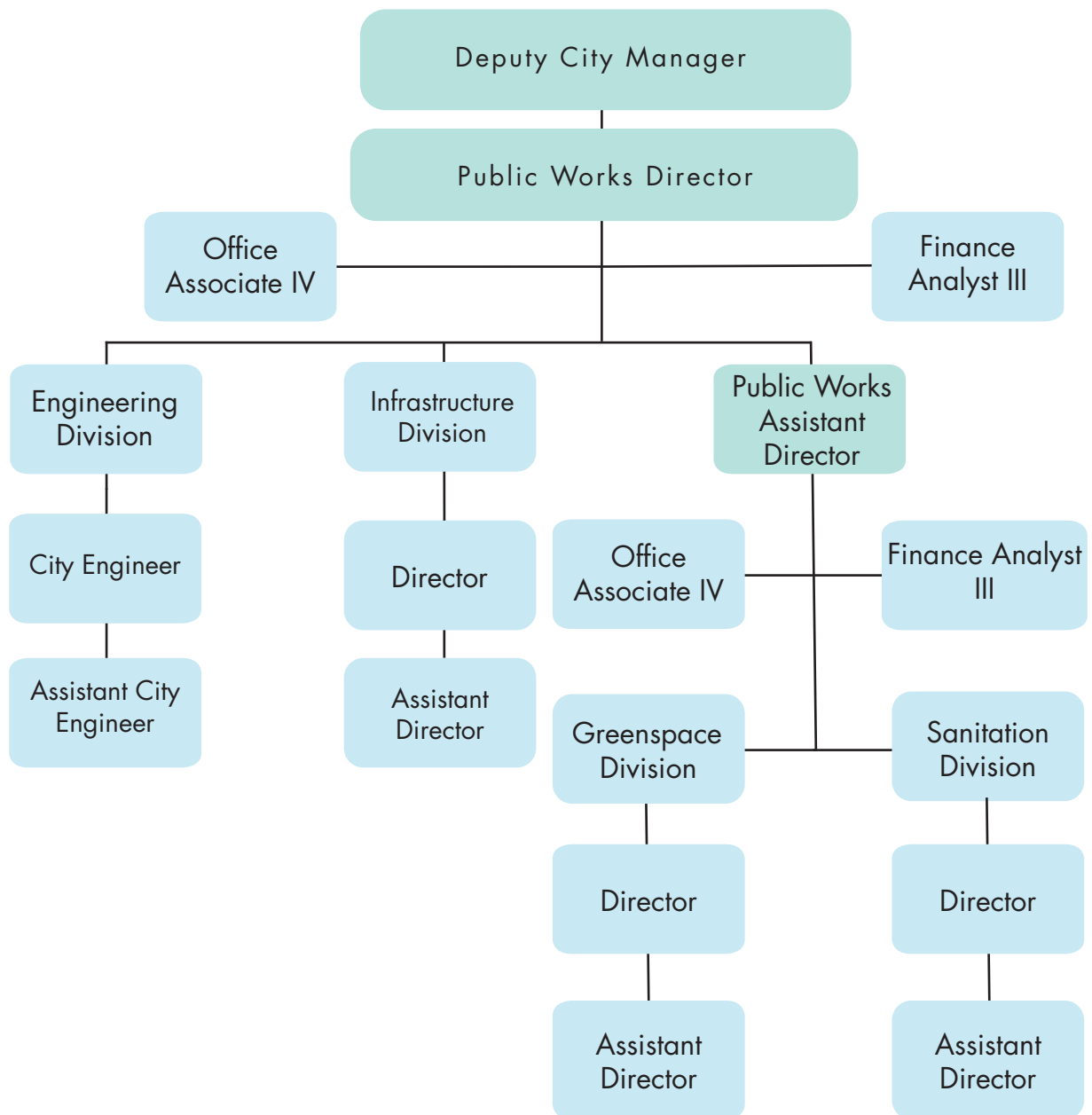
DEPARTMENT DESCRIPTION CONT'D

The Operations Division oversees the operation and maintenance of the City's water distribution, wastewater collection, stormwater, street and street lighting systems. Each year, the Operations Division ensures the safe transmission of billions of gallons of fresh water to the City and the transport of wastewater to the treatment plant. In addition, it ensures that all streets, streetlights, sidewalks, and storm drains are operational and maintained.

DEPARTMENT DESCRIPTION CONT'D

The Sanitation Division with its fleet of street sweepers, pressure washers, and other collection equipment maintains the streets, parking lots, pedestrian paths, and sidewalks free and clear of debris and litter. The division also manages trash and recycling contracts.

The Department of Public Works was recognized by the American Public Works Association as a nationally accredited Public Works agency in May 2007 and reaccredited in 2011, 2015, 2019, and 2023.



# PUBLIC WORKS

## FISCAL ENVIRONMENT

The Public Works Department has multiple sources of funding. The Administration, Engineering, Streets and Street Lighting, as well as the Greenspace Division, are partially funded from revenue generated by elevator fees, right-of-way permits, outdoor dining concession permits/fees, electrical outlet fees, and plan review fees.

The Infrastructure Division, which includes water, wastewater, and storm water operations, is funded through revenue generated by utility billing rates for user services.

The Sanitation Division is funded primarily through service fees.

The Public Works Department analyzes city rate structures to ensure we are bringing services to our residents and visitors at a cost-effective rate that maintains our systems and provides for a sustainable system.

## STRATEGIC ALIGNMENT

### Main Vision Area:

#### Environmental & Infrastructure

### Management Objectives:



#### • Prosperity

- Revitalize targeted areas and increase investment through master plans and business vibrancy efforts, as well as core services like safety and code enforcement. Better leverage our assets and parking lots. Areas include North Beach, Ocean Drive, 41<sup>st</sup> Street, Lincoln Road, and Washington Avenue.

#### • Neighborhoods

- Enhance the beautification, physical appearance and cleanliness of neighborhoods especially North Beach, City rights-of-way, town center areas, parks and beaches
- Modernize and streamline our old and complex land development regulations and City codes through routine and comprehensive reviews to be more user-friendly and to reduce conflicts.
- Work cooperatively with Miami-Dade County to reduce the possibility of disease outbreaks

#### • Environment & Infrastructure

- Work regionally and nationally to protect Biscayne Bay water quality and to maintain a healthy dune and beach system that provides storm protection, recreation, and vital habitat for the public good

## STRATEGIC ALIGNMENT CONT'D

- Improve our aging drinking water and sewer infrastructure to protect drinking water quality, public health, and fire protection.
- Reduce risk from storms, high tides, groundwater, and sea level rise by continuously improving our sea level rise adaptation and integrated stormwater program through the best science and technology, including green and blue infrastructure and mobility priorities while minimizing construction disruption, optimizing design aesthetics, and community engagement. Keep the entire program on-time, on-budget, and moving forward with adequate financing.
- Improve condition of Streets in City of Miami Beach
- **Organization Innovation**
  - Support all objectives to improve strategic decision making and financial stewardship, making the city more business friendly and user friendly, with an employee culture of problem solving and engagement

### Strategic Plan Actions:

- **IMPLEMENT** Ocean Drive Pedestrian Promenade 13 to 14 Place
- **INCREASE** compliance with the Building Code by streamlining the process and providing continued training to the public and applicants on the process
- **PROACTIVELY** monitor the City for mosquito breeding grounds and work cooperatively with Miami-Dade County to reduce the possibility of mosquito-transmitted disease
- **CONTINUE** implementing the water and sewer critical needs projects recommended by the Master Plan to address aging (drinking) water and sanitary sewer infrastructure
- **UPDATE** the Stormwater Master Plan, considering water quality treatment and Biscayne Bay protection and net improvement
- **IMPLEMENT** blue-green infrastructure strategy as part of ongoing neighborhood improvement projects
- **CONTINUE** to implement the 2020 Neighborhood Project Prioritization and Road Elevation Strategy
- **CONTINUE** implementing the SmartCity Street Lighting improvement project
- **CONTINUE** to develop and implement the streets and sidewalk assessment throughout the City
- **CONTINUE** street improvements associated with larger infrastructure projects such as West Avenue and First Street
- **CONTINUE** implementing the Park View Action Plan

# PUBLIC WORKS

## STRATEGIC ALIGNMENT CONT'D

### Budget Enhancement Actions:

- Multi-Hog Sweeper/Cleaner
- Emergency Portable 240 KW Backup Generators
- 10-Inch and 6-Inch Sewer Bypass Pumps
- Ford F-550 Truck Utility Bed with Crane
- Emergency Portable Backup Generators
- Variable Frequency Drive Replacements
- Contracted Emergency Landscaping Services
- GIS Near Map Services
- Cat Program Supplies
- Leaf Blowers
- Full-Time Cat Trapper Position
- Additional Sanitation Temporary Staffing Services Citywide
- Full-Time Customer Service Representative (2) Positions for Customer Service Related to Solid Waste Services
- Full-Time Solid Waste Contract Compliance Administrator Position
- Full-Time Sanitation Operations Supervisor Position
- Vacuum Trucks (2)
- Engineering Consulting Support Services for Sewer Projects Citywide
- Full-Time Control Room Operator Positions (3) (Split-funded between Water, Sewer, and Storm Water)
- Replacement of Storm Water Submersible Pumps
- Full-Time Permit Ombudsman Position for Neighborhood Affairs Division (split-funded)
- Engineering Consulting Support Services for Water Projects Citywide

## BUSINESS ENVIRONMENT

The City is undergoing significant growth in commercial and residential development.

The Department has evaluated available services in the private sector and has competitively bid contracts to provide the core services of the departmental work plan, recognizing that not all City services can be outsourced. Some services are performed more efficiently in-house.

## SIGNIFICANT ACCOMPLISHMENTS

### Operations Division

- As of March 2023, we installed over 10,000 AMA Badger meters, which all have a reported 99.8% communication health rate
- Continued G.O. Bond Roadway Resurfacing and Sidewalk: Replaced 114,458 sq. ft. of sidewalks; resurfaced 78,129 sq. yd. of roads; and replaced 3,851 linear feet of curb and gutter

## SIGNIFICANT ACCOMPLISHMENTS CONT'D

- Completed installation of 600 LF of 20" HDEP subaqueous water main at Collins Canal Crossing, as well as 2,600 FT of 20" Force Main along Dade Blvd to Sewer Pump Station #10 located at 28 Venetian Way
- Cleaned 100% of the City's stormwater structures as well as 347 stormwater gravity wells throughout the City
- Exceeded 100% sewer system cleaning goal by cleaning 146.3% (906,888 LF) of sewer gravity mains (including repeated cleanings at City "hot spots") and began replacing clay gravity main piping material with PVC piping
- Improved Pump Stations by successfully installing BIOREM at Sewer Stations #10, #15, and #28, and converting VFD's (variable frequency drives) at Stormwater Pump Stations #34, #38, and #39 to more reliable soft starters
- Removed and replaced 18 stainless steel water main pipe hangers on the Venetian Causeway. This work was vital to prevent future rupture and collapse of the 16-inch water mains on each side of the bridge.
- Successfully completed the FY 2022 Warehouse Physical Inventory Audit in September 2022, where the estimated value was \$2,801,315.98 and the OIG verified sample physical counts identified seven (7) deficiencies. This is a 99.74% accuracy rate.
- Improved Sewer Station 18 by bringing it into compliance and out of absolute Moratorium status by repairing and rehabilitating the inlet manhole and wet well

### Sanitation Division

- Successfully serviced 18 parking lots beginning in June 2022 for the Parking Department
- Replaced 4 old Temco Sweepers with 4 new Global Sweepers (2 Air and 2 Mechanical) for our sweeping operation
- Hired New Operations Supervisor to lead our night and weekend staff in the MXE area
- Hired First City's Cat Coordinator for the increase in the cat population
- Took over the maintenance of Beachwalk (mid beach) (79<sup>th</sup> to 87<sup>th</sup> Street) and the North Beach Recreational Corridor (between 46<sup>th</sup> Street and 63<sup>rd</sup> Street). This includes litter control service and doggy dispenser(s) services.
- Replaced over 50 litter containers on Ocean Drive in the MXE

### Engineering Division

- Completed construction of Sunset Harbour Roof Drains Improvements
- Completed Blue Building drainage improvements
- Completed 2022 flow testing and CCTV activities for all four Basins for the consent decree SSES program. Cycle II Phase I Report was submitted before November 2022 deadline.
- Completed the CMB PW Lead and Copper Rule Update Plan



# PUBLIC WORKS

## SIGNIFICANT ACCOMPLISHMENTS CONT'D

- All water, wastewater, and stormwater operational permit submittals were delivered on schedule and are compliant per Code
- Status of Moratorium were changed to OK for Basin 19 and 10
- Certified two ERP permits with the District and three City Sewer Extension permit with DERM to achieve project compliance
- Completed 59<sup>th</sup> Street Bioswale Project
- Completed Pedestrian Bridges Rehabilitation and Maintenance Assessment
- Completed Citywide Bridges' Assessment
- Negotiated and awarded Stormwater Master Plan update
- Completed the Stormwater Quality Study
- Completed the Conceptual Design for the First Street Neighborhood Improvement Project
- Completed the Basis of Design Report for the Star Island 16-Inch Force Main Subaqueous Crossing
- Completed the Dade Blvd Emergency 16-inch Force Main Replacement between Belle Isle to Dade Blvd & East of Michigan
- Completed the 16-inch Aerial water main replacement at the Venetian Causeway South Side between Bascule Bridge and Spoil Island
- Completed the 77<sup>th</sup> Street Bridge over E. Biscayne Point Canal Repairs (FDOT #876718)
- Completed Sanitary Sewer Pump Station 18 Gravity Main Replacement and Rehabilitation Project
- Completed the Final Engineering Report for the replacement of the water and force mains on Sunset Islands
- Completed 16-inch water main replacement under Collins Canal between Dade Blvd and Jefferson Ave
- Completed the Star Island Bridge (#876731) Emergency Repairs
- Completed Stormwater Pump Station No. 24 Upgrades Feasibility Study

### Geographic Information System Section

- Completed Cityworks Storeroom 2.0 app implementation
- Completed Cityworks Admin 2.0 app implementation
- Completed Introduction, Intermediate and Advanced Crystal Report Training
- Completed Cityworks Office 15.7 Designer for AMS training
- Completed GIS Essentials for Cityworks Office 15.7
- Completed Cityworks 11 mobile app implementation
- Completed Cityworks Sewer Pump Station Inspections dashboard
- Completed Cityworks Sewer Pump Station WO Status dashboard
- Completed Cityworks Stormwater Pump station Work Order Status dashboard
- Completed Cityworks Stormwater Pump station Inspection Status dashboard
- Completed Cityworks Water Pump Station Work Order Status dashboard



## SIGNIFICANT ACCOMPLISHMENTS CONT'D

- Completed Cityworks Water Pump Station Inspections Status dashboard
- Completed Cityworks inspections training manual
- Completed Cityworks MDC PW Traffic Signal dashboard
- Completed 500+ Cityworks support cases successfully
- Completed 20 Crisis Track Training Classes
- Completed 4,116 GIS Work Orders
- Completed 100+ GIS map requests
- Entered 25+ Utility as-builts
- Completed 10,000+ Utility as-built edits
- Completed the DERM Consent Decree as-builts requirements on time
- Completed the Department of Revenue address verification on time
- Completed 750+ Eden Address requests
- Completed 500+ ROW, Parcel Address requests
- Completed Uploading All As-built Documents into Laserfiche
- Completed Integration of Laserfiche with GIS

### Right-of-Way Management Section

- Issued 1,002 right-of-way permits, including all permitting related to public rights of way, i.e., infrastructure upgrades, public utility installations, capital improvements projects, etc.
- Processed approximately 229 water and sewer verification applications for approval by Miami-Dade Water and Sewer Department and Department of Environmental Resources Management (DERM)
- Public Works with the assistance of the City Attorney's Office transitioned from a sidewalk café permit base to a contract base from all outdoor dining in the public right-of-way. There are a total of 171 concession agreements executed.
- Conducted 3,352 building permit plan reviews on all improvements potentially impacting public rights of way

# PUBLIC WORKS

## SIGNIFICANT ACCOMPLISHMENTS CONT'D

### ADA Section

- Provided American Sign Language lessons (ASL introductory) to approximately 100 City employees as part of Disability Sensitivity training to staff
- Provided IT Digital Document Accessibility training to all department with Web Content editors to ensure accessibility tools and knowledge is implemented for all digital documents with public access
- Expanded budget for ADA initiatives and services to the public and accommodations from the wheelchair lift permitting and violations
- Expanded Closed Caption services (English and Spanish) to commission committee meetings to assist e.g. people who are hard of hearing
- Participated in the December Expo of Human Rights Committees to share the role of the Disability Access Committee and ADA Office with the residents and visitors of Miami Beach
- Developed/improved policies for ADA reviews within Public Works for the Public Works Manual
- Developed and implemented Parklet Design Guidelines with input from relevant City Departments and public meetings with relevant HOAs and/or neighborhood BIDs
- Continued review of accessibility on City projects (PW, CIP, Facilities Management), saving time by reviewing plans at 60% 90% development, including pre-design and construction site visits
- Continued review of accessibility of Pedestrian MOTs, Sidewalk Café, and Parklet permits, as well as Special Events on City Property not covered by the Building Departments (e.g. beach, parks, parking lots)
- On-going working relationship with FDOT ADA coordinator, County ADA coordinator, Florida ADA Networks, and City contractors to improve accessibility, collaborate, and/or address accessibility issues on projects

## SIGNIFICANT ACCOMPLISHMENTS CONT'D

- Continued presence and support to different City departments (parking, legal, police, transportation, parks, PW, CIP, IT, etc.) by reviewing policies, contracts, assessing facilities, discussing residents requests/complaints, developing and distributing ADA material, news articles, bulletins online, including HR during the pandemic through 2022 with employee cases, accommodations, contact tracing, etc.
- Addressed residents' complaints/requests by working with City departments liaisons at DAC Committee meetings, DEM meetings, and contractor's meetings
- Continued communication with Convention Center and the Chamber of Commerce to increase accessibility awareness and local agencies like Vocational Rehab, Lighthouse for the Blind, Hope Inc, South Florida Center for Independent Living, and others for accessibility referrals and collaboration

### Elevator Safety Section

- Implemented online electronic permitting process
- Staff went to a code seminar convention with inspectors from across the country to consult and learn about upcoming elevator codes to be made proficient in the field
- Passed new resolution to ensure ADA access wheelchair lifts are properly maintained
- Passed an ordinance to have any new or modernized elevators be provided with emergency battery backups in event of power loss to the building. This will alleviate passenger entrapments going forward and increases the life safety of the riding public in Miami Beach.
- Staff went to an elevator manufactory seminar to see and learn about the new updated equipment for elevators coming out in the future
- Organized a South Beach code outreach class that is provided on zoom and brings together elevator inspectors across the country to talk about relevant code issues and enforcement throughout the country
- Worked with State Representatives of Florida to affect changes on the Florida statues to amend and revoke laws that are outdated and are no longer valid

**Public Works replaced 114,458 square feet of sidewalks; resurfaced 78,129 square yards of roads; and replaced 3,851 linear feet of curb and gutter.**

# PUBLIC WORKS

## SIGNIFICANT ACCOMPLISHMENTS CONT'D

### Greenspace Management Division

Greenspace Management manages a \$3.0 million routine landscape maintenance contract, ensuring that the City's rights of way, parking lots, causeways and coastal areas are maintained to City standards.

In addition to routine maintenance, Greenspace Management also performs landscape improvement projects. Landscape improvement projects can range from simply replacing dead, damaged or missing plant material within the landscape, transitioning older landscapes to a more Florida-friendly and lower-maintenance plant pallet, and/or increasing the aesthetic appeal of a site.

Notable renovation and enhancement landscape projects include:

- Collins Avenue royal palm replacement from 63<sup>rd</sup> Street to 75<sup>th</sup> Street
- Beachwalk plant material renovation from 23<sup>rd</sup> Street to 43<sup>rd</sup> Street
- Pine Tree Drive shrub replacement with sod from 47<sup>th</sup> Street to 51<sup>st</sup> Street
- Julia Tuttle Welcome Sign landscape redesign and installation
- Renovated entire 29<sup>th</sup> Street landscape design near Sunset 1 & 2 Entrance
- Installed new landscaping at the 51<sup>st</sup> Street Pump Station
- Replenished and renovated older plant materials at Parking Lots 2, 49, 57, and G5

## CRITICAL SUCCESS FACTORS

The City has recognized the challenges of having underground infrastructure that is over 100 years old and has implemented plans to aggressively replace aging components.

- Maintain close collaboration with the Office of Capital Improvement Projects as new project plans are being developed to ensure a full comprehensive review and comment process is conducted by all departments that will have responsibility when the projects are constructed
- Receive support from the Information Technology Department to ensure technology integration. The computerization of the department's data collection and expansion of staff computer literacy is critical to increase efficiency in the delivery of services.
- Engage closely with the Human Resources Department to recruit and process the best qualified personnel necessary for the department workforce as well as specially planned programming

## CRITICAL SUCCESS FACTORS

- Encourage staff to obtain higher levels of education and training. Maintain the ongoing in-service/local training education of all staff in the department to improve productivity, efficiency, and customer satisfaction. Seek and schedule staff to attend training issued by professional industry organizations for staff to be knowledgeable of existing and new industry standards and opportunities.
- In 2020, the City Commission approved funding of \$122 million for capital improvements aimed at addressing the critical needs of the water and sewer infrastructure, as identified in the first five years of the 2019 water and sewer master plans. Since then, the Public Works Department has been collaborating with design consultants and contractors to plan, design, permit, and construct the critical projects. However, the unprecedented pandemic in 2021 significantly impacted the budgeting of these projects, with material scarcity being one of the main factors affecting construction costs. Additionally, the City's water and sewer division has faced unplanned emergencies that have affected the capital program projects, resulting in prioritization of certain projects that were not initially included in the critical needs, further impacting the already limited budget. Overall, the material scarcity, market conditions, and price escalation have resulted in significant challenges to infrastructure budgeting.

## FUTURE OUTLOOK

Under the leadership of the Mayor and City Commission, the department has accepted the challenge of rising above which includes enhancing storm water systems, raising road elevations, fortifying the City's shorelines to minimize the impact of sea level rise and the increased frequency of storm events. The department is looking at taking advantage of advances in technology and automation in providing manual services to maintain our City's infrastructure.