PUBLIC FACILITIES & SERVICES

DATA, INVENTORY, AND ANALYSIS

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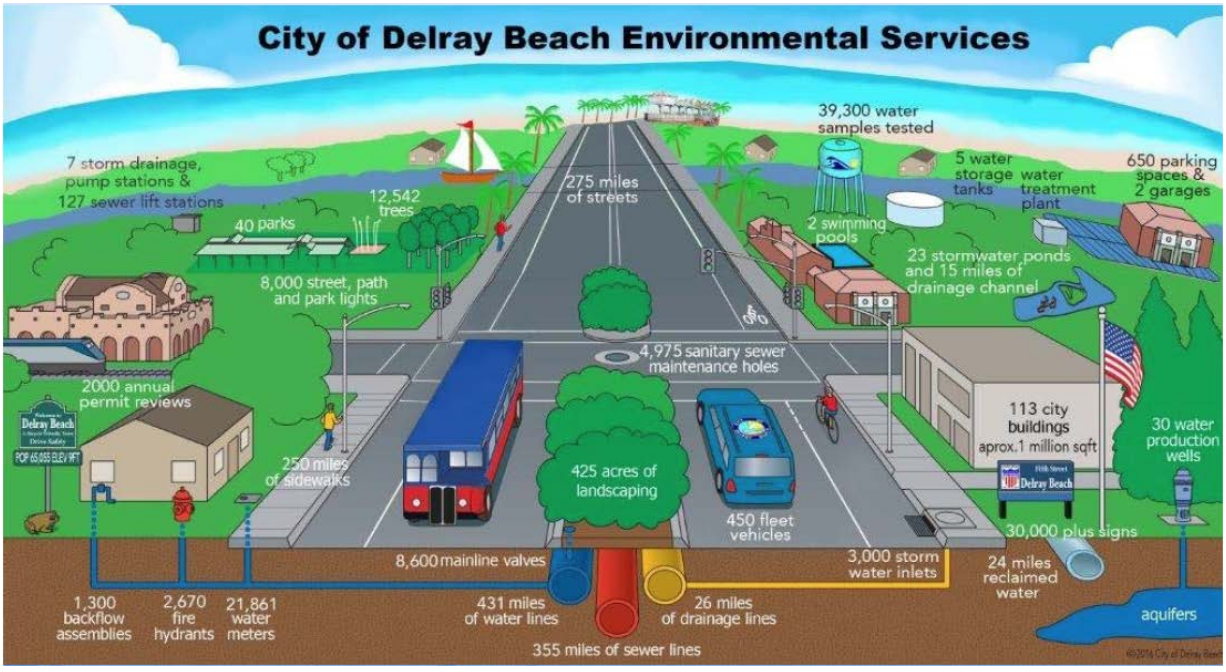
INTRODUCTION

The purpose and objective of the Public Facilities Element is to provide cost effective total life cycle management of the City of Delray Beach's public infrastructure and key essential services to enhance sustainability and the health, safety and welfare of residents, businesses and visitors.

The City maintains extensive public infrastructure and facilities. Storm drainage systems, water treatment and transmission systems, wastewater (sanitary sewer) collection and pumping systems, City-owned buildings, landscaping, streets, trees, sidewalks, signs, parks, public parking, and street lamps are all maintained by the City. This infrastructure provides property owners, residents and visitors to the City with a high quality of life

The Public Facilities Element summarizes items of significance in the City's sanitary sewer, reclaimed water, potable water, solid waste, stormwater management system, transportation system, and public facilities. The following summaries have been prepared to facilitate review of the requirements of Florida Statutes (F.S.) 163.3177 and guide the City of Delray Beach in the creation of Goals, Objectives, and Policies to govern the provision of public facilities and services. The text of the Element is a summary of the complete inventory, analysis, and recommendations which are contained in the technical source documents. As a summary, only significant items are highlighted. The source documents should be referred to for more information.



INVENTORY & ANALYSIS

General Government Facilities

The City has 113 public facilities. An inventory of the major buildings and facilities owned by the City is provided in Table PFE-1:

Table PFE-1
General Government Facilities

Location Name	Street Address	Occupancy Description	Year Built
GENERAL GOVERNMENT BUILDINGS/FACILITIES			
City Hall Complex	100 NW 1st Avenue	City Hall Building	1961
City Attorney Building	200 NW 1st Avenue	City Attorney Building	1959
Employee Health & Wellness Center	525 NE 3rd Avenue	Employee Health & Wellness Center	
Swinton Operations Center	434 S Swinton Avenue	Public Works: Facilities, Parking, Fleet Maintenance, Stormwater, and Engineering; Utilities, including the water treatment plant and elevated storage tank.	1950s; added onto in 1980s; New Construction in 2007
Federspiel Garage Building	22 SE 1st Avenue	Parking Garage	2007
Old School Square Garage Building	95 NE 1st Street	Parking Garage	2007
Public Library	100 Atlantic Avenue	Public Library	2005
PUBLIC SAFETY FACILITIES			
Fire Rescue Headquarters Building: Fire Station HQ	501 W Atlantic Avenue	Fire Rescue Headquarters Building: Fire Station HQ	1993
Fire Station #2 Building	35 Andrews Avenue	Fire Station #2 Building	1991
Fire Station #3 Building	651 Linton Boulevard	Fire Station #3 Building	1971
Fire Station #4 Building	4321 Lake Ida Road	Fire Station #4 Building	2008
Fire Station #5 Building	4000 Old Germantown Road	Fire Station #5 Building	1993
K-9 Police Obstacle Course	1025 Mission Hill Road	K-9 Police Obstacle Course	
Ocean Rescue HQ Building: Anchor Park	340 South Ocean Boulevard	Ocean Rescue Headquarters and Equipment Storage	1950
Police Headquarters Building	300 W Atlantic Avenue	Police Headquarters Building	1987
Police Substation (Lessee)	1570 S Federal Highway	Police Substation (Lessee)	
Seacrest Training Center	2350 N Seacrest Boulevard	Seacrest Training Center (Lessee)	2002

Table PFE-1 General Government Facilities			
Location Name	**Street Address**	**Occupancy Description**	**Year Built**
HISTORIC/CIVIC BUILDINGS			
1926 Historic Bungalow House (Lessor)	3 NE 1st Street	1926 Historic Bungalow House (Lessor)	1926
1931 Cason Cottage (Lessor)	5 NE 1st Street	1931 Cason Cottage (Lessor) Historic Cottage	1931
American Legion Post (Lessor)	196 NW 8 Avenue	American Legion Post (Lessor)	1966
Boy Scouts Building/Mike Macheck Boy Scout Park	405 Lake Ida Road	Equipment/Electrical	1962
Hunt House & Archive Bunker (Lessor)	111 NE Swinton Avenue	Hunt House & Archive Bunker (Lessor)	1931
Mae Volen Senior Center (Lessor)	850 N Congress	Mae Volen Senior Center	1997
Monterey House / Judge Knott Center (Lessor)	20 N Swinton Avenue	Monterey House / Judge Knott Center (Lessor)	1935
Munnings Cottage Building	154 NW 5 Avenue	Munnings Cottage Building (Lessor)	1931
Railroad Depot Building	80 Depot Avenue	Railroad Depot Building	1926
Spady House Museum	170 NW 5th Avenue	Spady House Museum	1924
RECREATION AND OPEN SPACE FACILITIES			
Playground	405 Lake Ida Road	Public Playground	
Amphitheater	SW 5 Ave & Atlantic	Public Amphitheater	
Family Recreation & Fitness Center Playground	850 N Congress	Multi-Play Structure	
Mike Macheck Boy Scout Park	405 Lake Ida Road	Pavilion and Restrooms Building	1993
Teen Center/Woman's Club Building	505 SE 5th Avenue	Teen Center/Woman's Club Building	1949
Skate Park: Teen Center/Woman's	505 SE 5th Avenue	Skate Park: Teen Center/Woman's	
Old School Square Crest Theater	51 N Swinton Avenue	Theater	1925
Old School Square Cornell Museum Building	51 N Swinton Avenue	Museum	1913
Old School Square Pavilion/Amphitheater Building	51 N Swinton Avenue	Pavilion/Amphitheater	2002
Old School Square Loggia	51 N Swinton Avenue	Loggia (West)	1925
Old School Square - Gymnasium Building	51 N Swinton Avenue	Gymnasium	1925

Table PFE-1 General Government Facilities			
Location Name	**Street Address**	**Occupancy Description**	**Year Built**
Neighborhood Resource Center	141 SW 12th Avenue	Neighborhood Resource Center	1967
Visitor Information Center Building & Sarah Gleason Park	2 S Ocean Avenue	Visitor Information Center Building & Sarah Gleason Park	1979
Community Center/Gym Building	50 NW 1st Avenue	Community Center/Gym Building	1961
Administration/Parks Maintenance	320 SW 4th Street	Administration/Garage Building: Parks Maintenance	1982
Atlantic Dunes Park	1605 South Ocean Boulevard	Public Park Facility	
Barwick Park	4321 Lake Ida Road	Public Park Facility	
Bexley Park	1400 W Bexley Park Drive	Public Park Facility	2008
Catherine Strong Park	1500 SW 6th Street	Public Park Facility	2006
Currie Commons Park	750 SE 2nd Avenue	Public Park Facility	1980
Eagle Park Picnic Facility	55 Coral Trace Boulevard	Public Park Facility	
Knowles Park	1001 S Federal Highway	Public Park Facility/Boat Ramp	
Lake View Park	1100 Lake Drive	Public Park Facility/Boat Ramp	2006
Mangrove Park	1211 S Federal Highway	Public Park Facility/Boat Ramp	
Miller Park/Little Fenway	1905 SW 4th Avenue	Public Park Facility	
Merritt Park	320 SW 4th Street	Public Park Facility	1970
Orchard View Park	4060 Old Germantown Road	Public Park Facility	
Pine Grove Park	400 SW 10th Street	Public Park Facility	
Pompey Park	1101 NW 2nd Street	Admin/Gymnasium Building: Pompey Park	1978
Veterans Park	802 NE 1st Street	Public Park and Community Center	1966
Playground	2800 Albatross Road	Public Playground	
Beach Pavilion (Main)/Observation Ramp	Atlantic & Ocean	Public Beach Facility	
DB Municipal Golf Club	2200 Highland Avenue	Public Golf Course/Club House	1996
Lakeview Golf Course	2000 Dover Road	Public Golf Course	1973
Delray Beach Tennis Center Complex	201 W Atlantic Avenue	Public Tennis Center/Stadium	1993
Seacrest/Hilltopper Soccer Complex	2505 Seacrest Boulevard	Pavilion/Restrooms/ Concession	2008

Table PFE-1 General Government Facilities			
Location Name	**Street Address**	**Occupancy Description**	**Year Built**
Delray Beach Memorial Gardens Municipal Cemetery	700 SW 8th Avenue	Municipal Cemetery & Mausoleum	1988
Delray Beach City Marina	159 Marina Way	Public marina	

Wastewater Collection & Treatment Facilities

The South Central Regional Wastewater Treatment Facility is located in Delray Beach. Delray Beach and Boynton Beach established the South Central Regional Wastewater Treatment Plant and Disposal Board in 1974 as an independent special district through an interlocal agreement to treat wastewater. The City Commissions of both cities serve as the governing board and daily operations of the facility are overseen by a plant manager, who reports to the Board. Coordination is facilitated through an "Operating Committee" comprised of the plant manager and a representative of each of the cities, typically the utilities department director. The Operating Committee engages each city with the plant manager in operation of the facility, its budget and resources. The City is responsible for the wastewater collection and transmission system within the service area (See Map PFE-XX).

The utilities service area includes the City's Planning Area plus additional areas that are provided service through contract, including the Town of Highland Beach and several single and multi-family connections in the Town of Gulf Stream. The service area encompasses approximately 18 square miles.

The wastewater collection system consists of approximately 431 miles of gravity and force mains interconnected to 129 lift stations. Fewer than 100 septic systems remain within the service area. The wastewater treatment facility was constructed in 1979, with a programmed life of 50 years (2029). With the completion of the Palm Beach County Solid Waste Authority biosolids pelletization facility, which dries and processes sludge for use in fertilizer, land spreading of sludge has been eliminated.

The design capacity of the South Central Regional Wastewater Treatment Facility for secondary treatment capacity is 24 million gallons per day (MGD) but will be expanded to 30 MGD as a part of a $15 million bank loan for aeration improvements, plant expansion, and other improvements included in the five year capital improvement plan. The plant design capacity for tertiary treatment is 10 MGD, which is specifically for reclaimed water use.

Table PFE-2 CITY OF DELRAY BEACH SEWER CAPACITY/DEMAND ANALYSIS (Includes Service to the City of Highland Beach)	
CAPACITY	**AVERAGE FLOW**
24 MGD	17 MGD
Source: South Central Regional Wastewater Treatment & Disposal Board.	

The Florida Department of Environmental Protection (FDEP) 2008 Leah G. Schad Ocean Outfall Act requires the elimination of the use of ocean outfalls as a primary means for the disposal of treated wastewater (except for emergency or wet weather events) and the reuse of at least 60 percent of the annual flow by the year 2025. The City's wastewater plant was one of the first in the region to cease using ocean outfalls. Disposal is now through a combination of deep well injection and reclaimed water distribution, except for emergency situations and FDEP permitted exceptions.

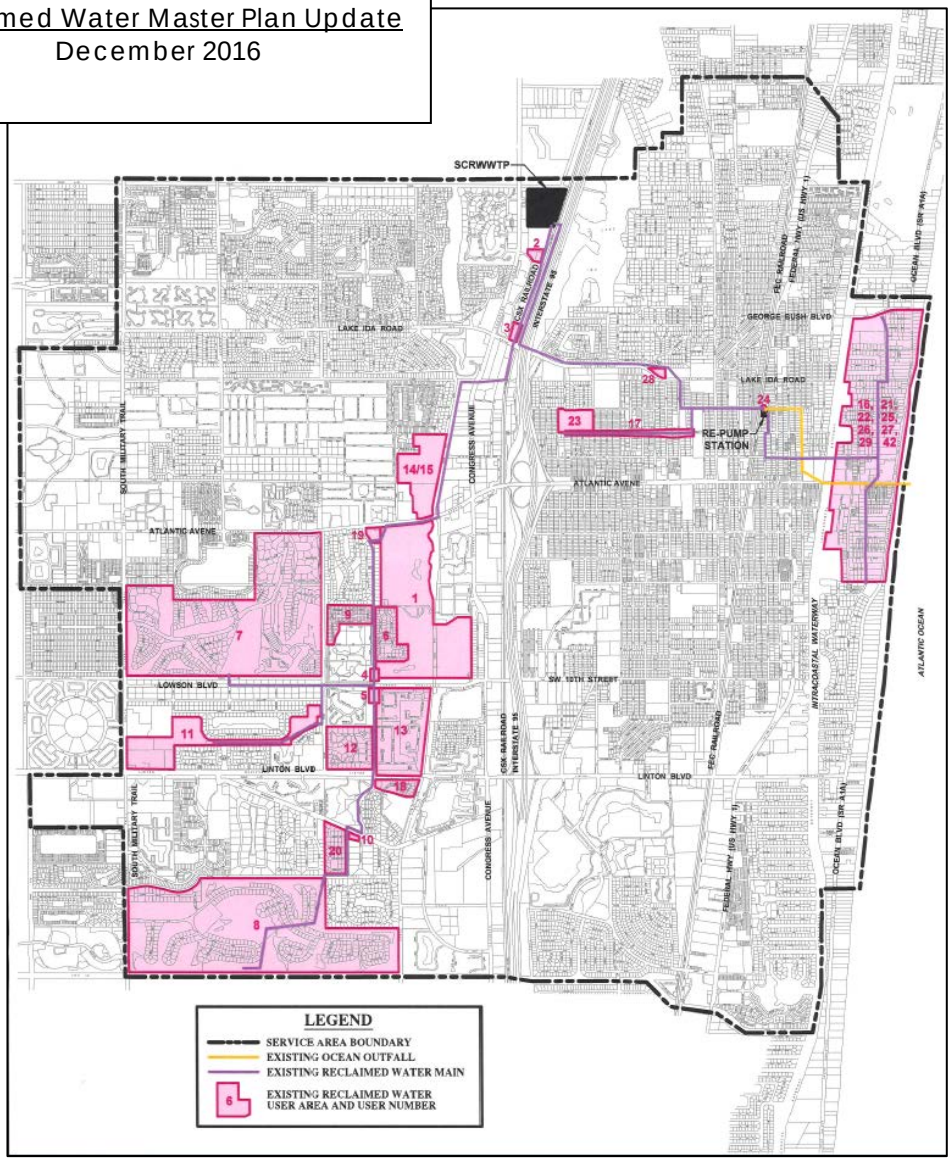
The FDEP baseline average annual daily flow is 12.9 MGD, which results in a reuse requirement of 7.7 MGD. The reuse goal is shared equally between Boynton Beach and Delray Beach, with a 3.85 MGD commitment for each municipality by 2025. Reclaimed water used for

irrigation helps shave peak potable water irrigation demands, which helps preserve limited potable water resources.

The City has 16 reclaimed water service areas with 42 existing users. The City intends to expand the users within each service area to provide an additional 40 users with reclaimed water. A map of existing reclaimed water service users is shown in below. Additional reclaimed water areas are planned for implementation and can be viewed in the Reclaimed Water Master Plan Update (Matthews Consulting, 2016).

Between 2003 and 2016, the City installed $8.7 million of reclaimed water system infrastructure, installed in eight phases. The reclaimed water system has a re-pump station adequate to serve the barrier island and future infrastructure in the south-east service area, as well as approximately 20 miles of transmission and distribution pipes, ranging from four to 36 inches. The current reclaimed water capacity is 3.0 MGD, and the average daily flow is 2.29 MGD. The City intends to expand the reclaimed water system to comply with the South Florida Water Management District (SFWMD) water use permit and FDEP Ocean Outfall Legislation.

Reclaimed Water Users
Reclaimed Water Master Plan Update
December 2016



Potable Water & Groundwater Recharge Facilities

Potable water treatment is provided by the City of Delray Beach at the water treatment plant through conventional treatment processes and a lime softening system. The geographic service area coincides with the Planning Area plus service provided to the Town of Gulf Stream for 0.80 MGD, through contract as a bulk customer. The service area encompasses approximately 18 square miles, as shown on Map PFE-XX.

The lime softening water treatment plant, as noted within the 2015 10-Year Water Supply Facilities Work Plan required by the SFWMD issued water use permit, is rated at 26 MGD by the Florida Department of Environmental Protection (FDEP). The City maintains a National Environmental Laboratory Accreditation Conference (NELAC) state certified laboratory, the primary responsibility of which is monitoring potable water quality. EPA Stage 2 Standards for disinfection by-products are being met through the use of supplemental chemical treatment.

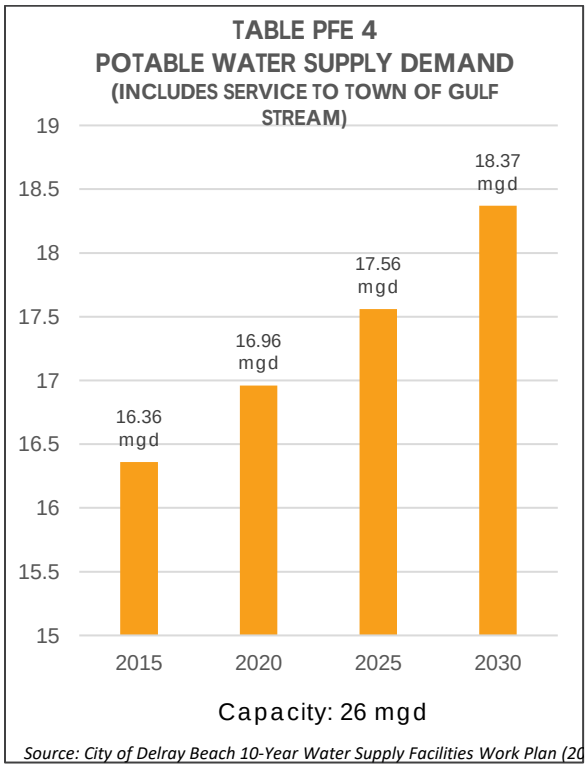
Although demand is anticipated to increase, the City has adequate capacity to accommodate the projected increase in demand.

Table PFE-3
PROJECTED POTABLE WATER SUPPLY DEMAND
(Includes Service to Town of Gulf Stream)

CAPACITY (MGD)	2015	2020	2025	2030
26	16.36	16.96	17.56	18.37

Source: City of Delray Beach 10-Year Water Supply Facilities Work Plan (2015)

The water distribution system includes 431 miles of water mains ranging from 2 inch to 24 inch diameter, 2,670 fire hydrants, transfer pumps, and storage facilities with a capacity of 8.5 mg.



The City currently withdraws groundwater from 30 active surficial aquifer wells in four wellfields and one (1) Floridan aquifer well for subsequent treatment and distribution to its service area. The City's current SFWMD Water Use Permit No. 50-00177-W was issued on December 20, 2010 and expires on December 20, 2030. Under this permit, the annual groundwater allocation shall not exceed 6,972 million gallons (MG) (19.10 MGD) and the maximum monthly allocation shall not exceed 654 MG (21.8 MGD). In addition, there are more than 1,000 domestic wells within the service area, predominantly used for irrigation. No major groundwater recharge areas are located within the Planning Area, although the entire region east of the Conservation Area is identified as a prime aquifer recharge area by the U.S. Geological Survey and the Palm Beach County Comprehensive Plan.

Solid Waste Management

The Solid Waste Authority of Palm Beach County is responsible for the ultimate disposal of solid waste in the region. The City is responsible for collection of solid waste within the City limits through a franchise contract with a private firm.

The Solid Waste Authority's solid waste management system consists of a landfill, a 2,000 ton per day waste-to-energy facility, a 3,000 ton per day mass burn waste-to-energy plant, a recovered materials processing facility, a biosolids pelletization facility, a vegetative waste processing operation, household hazardous collection facilities, and six transfer stations.

Solid waste is collected by the City's contractor and is transported to the regional facility located near West Palm Beach. Solid waste can also be taken to a transfer station, located on S.W. 4th Avenue just south of Linton Boulevard, which has a capacity of 1,000 tons per day. In 2006, the Southwest County Transfer Station was established to provide an additional 2,400 tons per day of capacity, to alleviate capacity shortages at the South County and Central County facilities.

The North County Regional Solid Waste Disposal Facility, operated by the SWA, is the ultimate disposal site. This facility occupies 334 acres and consists of a Class 1 (garbage and incinerator residue) and a Class 3 (trash) landfill. The landfill, at its established level of service standard of 7.02 pounds per person per day, has sufficient capacity to serve until the year 2049. In addition to the landfill, the facility provides recycling and waste-to-energy incineration. As of September 30, 2016, the Solid Waste Authority North County Landfill had an estimated 25,303,180 cubic yards of landfill capacity remaining. The second waste to energy facility which began operation in 2015 will significantly extend the useful life of the landfill.

Despite the recycling and incineration programs, the landfill is anticipated to reach final depletion by 2047. According to the 2017 Landfill Depletion Model report "Solid Waste Authority's integrated solid waste management system is designed to minimize the reliance on landfilling in an environmentally responsible and cost-effective manner. While Solid Waste Authority's combustion, recycling and recovery efforts have and will continue to significantly extend the life of the landfill, it is unreasonable to expect, given current technology, that landfill disposal can be completely avoided. Landfills, unlike other forms of infrastructure, are a depletable resource. The purpose of the Landfill Depletion Model is to forecast the estimated life of Solid Waste Authority's landfill in order to assist facilities planning decisions and to assess the impact of alternatives on landfill life. As a planning tool, the model is useful in identifying the point or points in time at which a decision is required in order to ensure the availability of disposal capacity.

The total residential tonnage added to the landfill from the City of Delray Beach in 2016 was 32,569.8 tons.

The City provides a residential recycling program that began in 1990. The program includes curbside residential recycling for single family and multi-family homes. The program accounted for a reduction to the waste stream of 3,024.83 residential tons in 2016. This represents a reduction of 8.26% in the residential waste stream, which provides a 12.83% reduction from 2008 tonnage.

With an estimated 2016 population of 65,044 (American Community Survey), Delray Beach has an estimated 2.74 pounds per capita per day need, which is well below the established level of service standard of 9.54 pounds per capita per day. This level of use indicates the landfill is anticipated to meet the City's capacity needs within the projected final depletion year.

Table PFE-5 shows the residential solid waste and recycling tonnage for Delray Beach between 2008 and 2016.

Table PFE-5
City of Delray Beach
Residential Solid Waste & Recycling
Annual Tonnage Report Summary 2008 -2016

YEAR	Garbage (tons)	Recycle (tons)	Vegetation (tons)	Bulk (tons)	TOTAL ANNUAL TONNAGE
2016	16,509.9	3,024.8	1,626.2	14,793.7	35,954.6
2015	16,065.8	2,963.4	1,813.8	13,137.4	33,980.4
2014	18,738.3	4,267.4	853.6	15,800.6	39,659.9
2013	19,807.1	4,356.6	748.7	16,072.0	40,984.4
2012	19,285.0	4,057.6	728.0	16,300.1	40,370.7
2011	18,555.7	4,186.1	1,592.0	14,161.3	38,495.1
2010	18,235.5	4,419.5	1,515.5	13,765.2	37,935.7
2009	18,609.8	4,503.4	1,834.7	13,051.7	37,999.6
2008	19,630.7	5,216.3	2,053.7	13,742.9	40,643.6

Source: City of Delray Beach / Southern Waste Systems

Stormwater Management

Responsibility for stormwater management in the City is divided among a hierarchy of state and regional agencies, the City, and landowners, as follows:

Table PFE-6
Stormwater Management Agencies

AGENCY	RESPONSIBILITY
South Florida Water Management District	Major canals and structures; permitting
Lake Worth Drainage District	Lateral and equalizer canals and minor structures
City of Delray Beach/Palm Beach County	Public stormwater collection system
Land Owners and Homeowners Associations	On-site storm sewers and retention areas

Stormwater is managed through a combination of interconnected SFWMD canals and natural waterways, local drainage districts, County and City government facilities, and community and neighborhood drainage systems.

South Florida Water Management District

Congress authorized the Central and Southern Florida Project in 1948 to control flood and drought. The district is operated and maintained by the South Florida Water Management District, whose predecessor the Central and Southern Florida Flood Control District, was established in 1949.

Florida is divided into five water management districts—the City of Delray Beach is located within the South Florida Water Management District. The South Florida Water Management District is a regional governmental agency that manages the water resources in the 16 counties from Orlando to the Florida Keys, and serves a population of 8.1 million residents. SFWMD is the oldest and largest of the state's five water management districts. The agency is responsible for managing and protecting South Florida water resources by balancing and improving flood control, water supply, water quality and natural systems.

The restoration of the Everglades is a key regional project – the largest environmental restoration project in the United Sates. Lake Okeechobee and its watershed are another important focus of the SFWMD. The District is working to improve it, the Kissimmee River and its floodplain, and South Florida's coastal estuaries.

Stormwater is managed by SFWMD through a system of canals and natural waterways that work in connection with community and neighborhood systems.

Lake Worth Drainage District

The Lake Work Drainage District was created in 1915 under Chapter 6458 of the 1913 General Drainage Laws of Florida. Currently, the District operates as an independent special district under Chapter 2009-258, Laws of Florida, and under F.S. 189 and 298

The Lake Work Drainage District was created to

- Reclaim, drain, and irrigate the lands within its boundary.
- Provide water control and water supply.
- Protect the lands within its boundary from the effects of water by means of the construction and maintenance of canals, ditches, levees, dikes, pumping stations and other works.
- Provide improvements for the purpose of making the area habitable for both settlement and agriculture.

The Lake Work Drainage District protects the 700,000 residents in its service area from flooding by maintaining approximately 500 miles of canals and their rights-of-ways, 20 major water control structures and several minor structures. This system is also operated to provide ground water recharge to prevent saltwater intrusion for numerous municipal water utilities.

The Lake Work Drainage District encompasses roughly 200 square miles in southeastern Palm Beach County, generally bordered on the west by the Arthur R. Marshall Loxahatchee National Wildlife Refuge, on the east by 1-95, on the north by Okeechobee Boulevard and on the south by the Hillsboro canal. There are 13 municipalities entirely or partially within the boundary of the Lake Work Drainage District. The western half of the City of Delray Beach is within the LWDD boundaries.

The responsibilities of the Lake Work Drainage District include

- Permitting of construction projects that discharge into LWDD canals.
- Aquatic weed control program utilizing EPA & DEP approved herbicides.
- Daily inspections of 20 major water control structures and weekly inspection of minor water control structures.
- Daily recording of rainfall at multiple locations throughout the LWDD.
- Daily monitoring of surface water elevations at multiple locations.
- Water quality monitoring.
- Mowing of canal banks and berms.
- Removal of encroachments within canal rights-of-way.
- Community outreach and educational programs.

Palm Beach County

The City of Delray Beach is part of the Palm Beach County Stormwater Management Program (SWMP), to maintain compliance with the Environmental Protection Agency (EPA) Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES). NPDES is a federal program to eliminate stormwater pollutant discharge to "receiving waters." Palm Beach County applies for NPDES permitting for 40 governmental units within the County – including the City of Delray Beach – to the Florida Department of Environmental Protection (FDEP) through the lead permittee, the Northern Palm Beach County Improvement District (NPBCID). The City is responsible for monitoring and assessment of pollutants discharged into water bodies, with discharges not to exceed the Total Maximum Daily Loads (TMDLs). All stormwater management and monitoring is subject to the NPDES requirements. MS4 permit (FLS000015-004) is scheduled to expire in 2021.

City of Delray Beach

Currently, the city maintains 3,000 stormwater inlets and over 26 miles of storm drainage pipes. The City established the SFWMD Level of Service Standards for drainage as the City's standard in the Goal's, Objectives, and Policies

Table PFE-7
Level of Service Design Standards

Level of Service Standard	Design Standard for Roadways	Impacts	
		General Conditions	Accessibility
A	10-year, 24-hour	Possible minor ponding	Roads are accessible
B	5-year, 24-hour	Possible minor ponding	Roads are accessible
C	3-year, 24-hour	Possible minor ponding	Roads are accessible
D	< 3-year, 24-hour	Portions of area have ponding with moderate duration < 12 hours	General inconvenience
E	< 3-year, 24-hour	Ponding with relatively long duration > 12 hours	Sections of roadways are not accessible and general inconvenience
F	< 3-year, 24-hour	Ponding with relatively long duration > 12 hours and structural damage	Sections of roadways are not accessible and general inconvenience

Source: 2000 Stormwater Master Plan for the City of Delray Beach by Kimley-Horn

As described in the 2000 Stormwater Plan, these Level of Service standards are applied to City drainage in the following manner (City of Delray Beach 2000 Stormwater Master Plan Update, Kimley Horn and Associates, Inc):

- All SFWMD permitted projects were assigned a Level of Service Standard A, B or C depending on the storm event used for design of the roadways within each permitted project. If the permit did not specify the roadway design standard, a Level of Service Standard C was assumed.
- All FDOT or Palm Beach County roadways (excluding 1-95 which was designed for greater than a 10-year, 24-hour storm event) were assigned a Level of Service Standard C (per FOOT and Palm Beach County standards) unless drainage problems have been identified.
- All undeveloped areas were assigned a Level of Service Standard C based on the assumption that as these areas are developed minimum standards will be met.
- All developed areas within the City with existing storm sewer systems were assigned a Level of Service Standard C. This assumes that the City has previously reviewed plans for these systems and minimum standard criteria have been met. Note some of these areas may contain isolated problems areas which, based on the available data, were thought to be attributed to localized irregularities and/or maintenance problems.
- All developed areas within the City without drainage systems, or with drainage systems that were determined to be inadequate but where significant drainage problems have not been identified, were assigned a Level of Service Standard D. Note these areas may contribute to drainage problems elsewhere.
- All developed areas within the City without drainage systems, or with drainage systems that were determined to be inadequate where significant drainage problems have been identified, were assigned a Level of Service Standard E.
- All developed areas where structural damage due to flooding has been identified by City Staff were assigned a Level of Service Standard F. (Often structural damage due to flooding occurs when buildings have a floor elevation that is below the road.)

The City is in the process of a Stormwater Management Master Plan Update that will include assumptions for sea level rise based on 30-year and 75-year projections identified in the City of Delray Beach Intracoastal Waterway Water Level & Infrastructure Vulnerability Study, conducted in 2018. The Stormwater Management Master Plan Update will identify stormwater management challenges due to impacts of sea level rise and localized flooding. These issues coupled with a rising groundwater table will impact primary and secondary drainage systems, ultimately reducing the capacity of these systems which can result in flooding of street, buildings and natural systems.

The Stormwater Management Master Plan Update will provide current data on elevations of structures and their projected future impact which provides the City with additional tools for evaluating future projects. The goal of the Stormwater Management Master Plan Update is to create a plan to address water resource issues and problems, including but not limited to, drainage problems, street flooding, tidal flooding, inadequate infrastructure, stormwater quality and recharge as well as other stormwater related issues or problems. The Update also evaluates the adequacy and condition of the drainage facilities, determines the level of service for flood protection for the City's sub-watersheds and identifies solutions. The Update will address the current and future needs of the City based on growth and climatological changes that have and will continue to impact the City's stormwater management system.

Transportation System

A well-maintained transportation system is a component of public facilities, which is crucial to sustaining a high quality of life. The City has 275 (centerline) miles of streets, and 250 miles

of sidewalks. Street infrastructure includes parking meters, street lights, signs, and pavement markings. The transportation system includes bike lanes, the trolley, a pending bike share program, and planned Tri-Rail Coastal Link station.

In 2016, the City adopted a Complete Streets Policy, which is modeled on the best practices recommended by Smart Growth America, which redirects street planning to focus on the needs of all users, rather than prioritize drivers. This policy will be adhered to in future street improvements, which will help identify and prioritize bicycle and pedestrian infrastructure needs.

The Mobility Element and Capital Improvements Element provide a full inventory of the transportation facilities, needs, and planned improvements.

NEEDS & RECOMMENDATIONS

The needs and recommendations are based on both public input and subject matter feedback. As part of the Always Delray Comprehensive Plan update process, the City conducted a public workshop on May 20, 2017, to discuss Public Facilities and other Grow Elements.

Needs Identified by Public Input

Workshop participants identified short, mid, and long-range goals for public facilities improvements, as follows:

Focus on Now

- Expansion of reclaimed water facilities to reduce ocean discharge
- Improved way-finding signs
- Reduce nuisance street flooding

Focus on Soon

- Beautification projects for roads and public spaces
- Street lighting for public safety
- Improved surveillance capabilities

Focus on Later

- A living shoreline
- Sea walls
- Sidewalks
- Street lights

Additional needs were identified in the following areas as a result of inventory and analysis of existing public facilities and services. Since the City has completed all critical improvements to the system, the identified needs can be categorized as

1) initiatives to maintain or improve existing infrastructure,
2) initiatives to enhance quality of life, and
3) sustainability initiatives.

Recommendations and Initiatives to Maintain or Improve Infrastructure

Public Building Improvements

The City is undertaking a major initiative to refurbish and remodel buildings and facilities to become more energy efficient, sustainable, and resilient. A needs assessment is also underway to help plan for long term short needs.

Public Building Recommendations:

- Continue to support public WiFi and explore its expansion as public infrastructure.
- Explore the feasibility of solar panels on public buildings.
- Work with the Delray Beach CRA to assess the need for new parking facilities and plan for their location.
- Upgrade City Hall and other public facilities for both emergency preparedness as well as for future resilience to sea level rise.

Wastewater Improvements

Ongoing improvements are needed to force mains, sewer mains, lift stations, and other plant facilities, including the reclaimed water system. Significant expansion of the reclaimed water system is planned to meet environmental goals, protect wellfields from saltwater intrusion, recharge aquifers, and conserve resources.

These needs have been identified in the capital budget to accommodate ongoing demand and regulations. Infiltration into the collection system by rainwater and high groundwater levels could impact future capital expansion facility costs. This problem has been significantly reduced in recent years with the repair and reconstruction of the collection system city-wide. An on-going program to reduce infiltration/inflow is a cost-effective method of reducing the need for treatment facility expansion and requires on-going capital investment.

Wastewater Improvements Recommendations:

- Continue to expand the reclaimed water system to increase the amount of water that is reused.

Potable Water Improvements

Ongoing improvements are needed to water mains, water meters, raw water wells, and other plant facilities. These needs have been identified in the capital budget to accommodate ongoing demand and regulations. Long term potable water planning has to focus on identifying additional, alternative water supplies and additional treatment process.

Potable Water Improvements Recommendations:

- Identify and develop alternative water supplies and treatment processes.

Solid Waste Improvements

Although the landfill has adequate capacity to accommodate the solid waste generated by the City, the City could increase the amount of waste that is recycled.

Solid Waste Improvements Recommendations:

- Increase involvement in recycling programs by expanding both participation and the number of permitted recyclable items.

Stormwater Improvements

Local and City-wide drainage deficiencies are identified in the Stormwater Master Plan and funded by the Stormwater Utility Fee. An update to the plan is underway. As a part of this process, the City has identified drainage deficiencies throughout the City. Projects identified include seawall overtopping along the Intracoastal Waterway to prevent flooding from high and king tides, miscellaneous projects to remedy street flooding, and projects to repair swale degradation. Increased flooding from sea level rise is a growing stormwater concern for the City. Upon completion of the Stormwater Master Plan Update, the Public Facilities Element will be updated to reflect new information.

Stormwater Improvements Recommendations:

- Update level of service standards and project priorities based upon the 2018 Stormwater Master Plan
- Establish a program for the repair, replacement, and maintenance of seawalls based upon the Intracoastal Waterway Water level & Infrastructure Vulnerability Study.

Emergency Preparedness. In 2017, Hurricane Irma hit Delray Beach with Category 1 strength winds, highlighting vulnerabilities within the City, particularly to the wastewater collection system which lost power to 70% of its pumping stations. To prevent disruption of service during a natural or manmade catastrophic event, the City now has approximately 75 generators, of which 52 are portable and the remainder fixed. The portable generators are primarily for the 130 wastewater lift stations, 7 stormwater pumping stations and 30 raw water potable wells.

Emergency Preparedness Recommendations and Actions:

- A Continuity of Operations Plan (COOP) has been developed and should be regularly updated and maintained
- Develop a plan for post disaster recovery for all hazards.
- A $13 M project to add a third floor to Fire Station 113 to serve as the City's emergency operations center (EOC).
- Develop strategies to prevent street flooding and ponding on critical streets.
- Upgrade IT infrastructure to facilitate post-disaster recovery.

With the adoption of the Complete Streets policy, the City will continue to prioritize transportation infrastructure improvements that provide for pedestrian and bicycle mobility. The City has recently completed several bike lane installations and has more projects scheduled in the capital improvements program. Ultimately, a bicycle master plan will be needed to establish priority links. New long term needs include a station for the planned Tri-Rail Coastal Link station in downtown.

Transportation Recommendations:

- Implement a Safe Routes to Schools program, including evaluating existing conditions, mapping routes to school, identifying needed improvements, and prioritization of the identified improvements.
- Analyze bicycle and pedestrian infrastructure needs along routes to major destinations, such as parks, the downtown district, schools, and employment centers, and prioritize multimodal improvements.
- Increase the percentage of tree coverage throughout the city to aesthetically improve areas and provide a shaded environment for pedestrians. To measure success in this area, the City should develop benchmarks for tree coverage on public streets and public land.
- Plan for the design and construction of the Tri-Rail Coastal Link Station.
- Prioritize multi-modal improvements needed in the Tri-Rail station area to facilitate access and support the long term viability of commuter train service.