

Public Facilities Report

October 2023



Dunes Community Development District
101 Jungle Hut Road
Palm Coast, FL 32137

Developed in Accordance with Florida Statutes 189.415

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I. PURPOSE AND SCOPE

This Special District Public Facilities Report has been prepared for the Dunes Community Development District (the District) to comply with the requirements of 189.415, Florida Statutes. This report provides a general description of all public facilities owned and operated by the District along with facility expansion program needs underway or proposed within the next five (5) years.

II. GENERAL INFORMATION

The District, located in Palm Coast, Florida and established in 1985, provides stormwater management, wastewater treatment and collection, water treatment and distribution and reclaimed water service to the residents of the District. The District is approximately 5.5 miles in length and encompasses approximately 2,200 acres. The District is comprised of four communities: Hammock Dunes (908 acres), Ocean Hammock (435 acres), Hammock Beach (364 acres) and Yacht Harbor Village (92 acres). The District owns and operates a 1,440,000 gallon per day (GPD) water treatment plant, a 920,000 GPD wastewater treatment plant, a reclaimed water treatment and distribution system serving a public access landscape irrigation service area comprised of residential and common areas and golf courses totaling approximately 1,000 acres having a rated disposal capacity of 7.74 Million GPD, the stormwater management system, the Hammock Dunes Toll Bridge, the roadways Camino del Mar and Hammock Dunes Pkwy and all the structures, piping, pumps, and appurtenances necessary to operate and maintain these systems.

The general description of the boundaries of the four (4) communities serviced by the District is as follows: Hammock Dunes is generally bounded on the north by Jungle Hut Road; to the east by the Atlantic Ocean; to the west by State Road A1A north of Island Estates and by the Intracoastal Waterway in Island Estates; and to the south by the southernmost point of Island Estates west of State Road A1A and to the south by Varn Park east of State Road A1A. Ocean Hammock and Hammock Beach areas are bounded to the south by Jungle Hut Road, to the east by the Atlantic Ocean, to the north by Malacompra Road, and to the west by State Road A1A. Yacht Harbor Village is bounded by State Road A1A to the east, the Hammock Dunes Toll Bridge to the south, the Intracoastal Waterway to the west, and Jungle Hut Road to the north.

Development within the District has proceeded in accordance with a planned, phased approach, with the overall development nearing 83% of build-out. The District is comprised of single-family residential, multi-family residential, common areas (roadway islands, scenic sidewalk routes, etc.) and recreational areas (e.g., golf courses). The phases of development are as follows:

Phase I, Hammock Dunes:

This development phase encompasses the Hammock Dunes and Island Estates communities, which account for approximately 1,256 residential units, of which 1,152 are platted and/or permitted and 104 are planned but not platted/permitted. There are 727 single-family residential home sites (688 platted/permitted and 39 planned) and 529 condominiums units (464 platted/permitted and 65 planned). This phase has a total area of approximately 908 acres. There is an estimated total of 578 acres of residential and common areas requiring irrigation. The 96-acre Hammock Dunes Golf Course also requires irrigation. The infrastructure has been completed and the development is at approximately 83.4% of build-out (1,048 residential units out of planned/permitted total of 1,256 units). The transportation and utility infrastructure elements are

complete except for small improvements solely serving new planned but not platted/permitted developments.

Phase II, Ocean Hammock and Phase III, Hammock Beach:

Phase II encompasses the Ocean Hammock community, which accounts for approximately 609 residential units. This phase has a total area of approximately 435 acres. The 124-acre Ocean Hammock Golf Course runs throughout both the Ocean Hammock and Hammock Beach communities. The Phase II (Ocean Hammock) portion includes approximately 314 single-family residential home sites, 20 hotel units and 275 condominiums units.

Phase III encompasses the Hammock Beach community, which accounts for approximately 975 residential units. This phase has a total area of approximately 364 acres. The Hammock Beach and Ocean Hammock communities have approximately 201 acres under irrigation. The 124-Acre Ocean Hammock Golf Course, which runs throughout both the Ocean Hammock and Hammock Beach communities, is irrigated as well. The Phase III (Hammock Beach) portion includes approximately 489 single-family residential home sites and 486 condominiums units. The infrastructure is complete, and the combined Phase II and III development is at approximately 87.3% of build-out (1,383 residential units out of a potential of 1,584 units). The transportation and utility infrastructure are complete.

Phase IV, Yacht Harbor Village:

This development phase encompasses the Yacht Harbor Village community, which accounts for approximately 293 residential units. This phase has a total area of approximately 92 acres. This development includes 205 single-family residential home sites and 88 condominiums units. The infrastructure has been completed and the development is at approximately 56% of build-out (164 residential units out of a potential of 293 units). The transportation and utility infrastructure are complete. This phase also includes a marina with 210 boat slips.

III. EXISTING PUBLIC FACILITIES

A. Potable Water Facilities

1. The District's raw water supply is realized from three (3) wells having submersible well pumps rated to deliver 615 gallons per minute each for a total pumping capacity of 2.66 million gallons per day (MGD). Two of the District's wells are located adjacent to its water and wastewater treatment facility on 101 Jungle Hut Road and a third well is located at 302 Hammock Park Lane. Water from these wells is treated by a reverse osmosis water treatment facility. The original water treatment facility, completed and placed into operation in August 2007, had a rated treatment capacity of 0.72 (MGD). Prior to construction of the water treatment facility, the District previously purchased potable water from the City of Palm Coast. The District and the City of Palm Coast have a current Interlocal Agreement in place that provides conditions for an existing interconnection between the two potable water systems in the event of emergencies or other planned system maintenance activities. The existing potable water interconnections were utilized as a source for meeting potable water demands during November 2022 and August 2023 for scheduled potable water ground storage tank inspection and repair activities.

2. The District's water treatment facility is currently rated and permitted to produce up to 1,440,000 gallons per day (gpd) or 1.44 MGD of potable water. The Dunes CDD water treatment plant capacity was increased from 0.72 MGD to 1.44 MGD in May 2015. The District also realizes a potable water storage capacity of 750,000 gallons with a ground storage tank located at the water treatment facility. In April 2019, the District prepared and submitted an updated Capacity Analysis Report (CAR) for the water plant and related facilities to the Florida Department of Environmental Protection (FDEP) as required every five (5) years. The FDEP accepted the District's updated CAR findings that illustrated the District's potable water supply, treatment, pumping, and storage facilities are sufficient to meet the projected service area finished water demand for the next ten (10) year operating and planning horizon. It is further anticipated that the current 1.44 MGD treatment plant capacity is sufficiently sized to meet the future potable water needs of the District's fully built-out community as currently planned.
3. The District has a Consumptive Use Permit (CUP) from the St. Johns River Water Management District (SJRWMD) that extends to the year 2024. This permit was modified most recently in August 2016. For calendar year 2023, the CUP allows the District to withdraw up to 324.12 Million Gallons (MG) annually, or 888,000 GPD, on an annual average day basis, for potable water production and use. Groundwater withdrawals utilized to produce the current annual average day potable water demand for the District's water service area is approximately 603,000 GPD or 68% of the current year CUP allocation. Groundwater withdrawal allocations contained in the CUP increase incrementally each year based on projected growth rates expected to occur within the District's water service area. The current permit provides an allowable groundwater withdrawal allocation of 891,000 GPD (annual average) in the year 2024.

In July 2019, the District prepared and submitted a Ten (10) - Year Compliance Report to the St. John's River Water Management District (SJRWMD) in accordance with CUP Condition 33. Noting the current District water supply service area is well-defined, future increases in water demand are expected to be significantly attributed to the rate of in fill of the remaining vacant/ undeveloped lots and parcels within the District's water service area. Future DCDD water demand projections contained in the 2019 Water Plant Facilities CAR are based on an average service connection growth rate of 1.7% for most recent 5 and 10 – year periods analyzed. The projected future raw water demand for public supply type use based on this recent average growth rate is not anticipated to exceed the DCDD's current groundwater allocations contained in the CUP through the 2024 permit horizon. The District expects that the permitted groundwater withdrawal allocations from the source water supply wells to be enough to meet our potable water production needs through 2024.

4. Water distribution facilities are located throughout the District and consist of approximately 150,000 linear feet of various sized piping ranging from 2, 4, 6, 8, 10, 12, and 16-inch diameter pipes together with valves and fittings. Individual service to residential clusters or neighborhoods is served by mains less than ten (10) inches in diameter. Potable water main facilities are typically located within the road rights of way and are offset from the edge of the pavement. When potable water facilities are located outside of District owned property or lie outside of road rights of way, easements are granted by the developers to the District authorizing the District to

access these facilities for maintenance and operational purposes. The District also currently owns and operates approximately 260 fire hydrants and 250 isolation valves serving the potable water distribution system.

5. The current annual average daily demand for potable water treatment and production is approximately 496,000 GPD. The use is comprised of residential consumption, non-residential consumption, potable irrigation, and system flushing. The current annual period average daily demand represents 34% of the total rated production capacity of the treatment plant.

B. Wastewater, Reclaimed Water, and Irrigation Water Facilities

1. Wastewater collection facilities are located throughout the District and consists of approximately 113,555 linear feet of 8, 10, and 12-inch diameter gravity sewers, 617 wastewater manholes, 23 lift stations with various sized pumps having pumping rates ranging from 40 to 500 gallons per minute, 1 small, grinder lift station serving an Island Estates gate booth and approximately 47,256 linear feet of force mains ranging from 3 to 12-inches in diameter.
2. The Wastewater Treatment Facility (WWTF) is located at 101 Jungle Hut Road on a dedicated utility site of 23 acres. Treatment processes include pretreatment (screening and flow measurement), flow equalization, secondary wastewater treatment (sequencing batch reactors), filtration, high-level disinfection along with digestion and solids dewatering and disposal. The District completed an expansion project in early 2020 with the wastewater treatment facility realizing an annual average daily flow (AADF) design capacity of 0.71 MGD. In October 2021, the FDEP issued a permit revision to the District for a re-rating of the WWTP design capacity from 0.71 to 0.92 MGD AADF. Current annual average daily wastewater treatment plant flow is approximately 421,000 GPD or 46% of the permitted capacity.

In July 2023, the District prepared and submitted a permit renewal application and an updated Capacity Analysis Report (CAR) to the Florida Department of Environmental Protection (FDEP) as required every five (5) years. The FDEP reviewed the application and provided a request for additional information regarding minor administrative items. District staff is preparing the requested response items and anticipates issuance of permit renewal prior to the end of the year. The District's updated CAR findings illustrates the District's permitted domestic wastewater facility capacity of 920,000 GPD (0.92 MGD), is sufficient to meet the projected service area wastewater flows for the next five (5) year operating and planning horizon.

3. Wastewater Disposal/Reclaimed facilities, capable of providing 3,200,000 GPD of reclaimed water for irrigation service are located at the utility site. These facilities consist of 3.2 MGD sand media filtration and high-level disinfection capacity, and 17.8 million gallons of reclaimed water storage in four on-site lined lagoons.
4. In addition to processing the wastewater into reclaimed water for irrigation of residential lots, common areas and two golf courses, the District purchases highly disinfected reclaimed water suitable for public access reuse from the City of Palm Coast. The District utilizes its 12-inch reclaimed transmission main, which connects the District and the City of Palm Coast's wastewater treatment plants. The District has an interlocal agreement with the City of Palm Coast for procurement of reclaimed

water up to a maximum of 2.6 MGD. The most recent annual period average daily flow received from the City of Palm Coast is approximately 1.52MGD.

5. During periods when peak irrigation demands are realized within the Dunes CDD service area, the District has the capability to supplement the usual District and Palm Coast wastewater facilities reclaimed water sources with brackish groundwater from the Floridian aquifer. The District operates an on-site irrigation supply well which withdraws groundwater from the Floridian Aquifer for mixing with reclaimed water stored in the on-site lagoons. The District's SJRWMD Consumptive Use Permit (CUP) (No. 51136) authorizes the District to withdraw groundwater up to an annual average of 970,000 GPD from the aquifer to supplement the reclaimed water sources. This resource is permitted for use after the source of reclaimed water has been maximized. In addition to the withdrawal allocation limit, the salt content of this brackish water source further restricts its use. The current annual average groundwater withdrawal rate is approximately 93,000 GPD (or 10% of the allocation). In August of 2016, the SJRWMD modified the District's CUP to allow the use of up to 970,000 GPD of surface water from the storm water collection/retention system as another supplemental irrigation source. This resource enhances our ability to meet peak irrigation demands. The current annual average daily withdrawal from the storm water system is 207,000 GPD.
6. There are two types of public access irrigation water use: golf course irrigation and landscape irrigation for residential and common areas. Three (3) irrigation water pump stations are employed at the District utility site to transmit reclaimed water to users. The Residential Pump Station owned and operated by the District provides reuse water service to residential and common areas; the Ocean Hammock Golf Course and Hammock Dunes Golf Course pump stations, each of which is owned and operated by the respective golf course management entity, provides reuse irrigation service to each respective golf course facility. Currently, the irrigation pumping facilities meet an annual average daily demand of approximately 2,073,000 GPD (Golf Courses: 546,000 GPD; Residential: 1,527,000 GPD).

The residential reclaimed water distribution system consists of approximately 125,148 linear feet of 1.5 through 16-inch diameter reclaimed water main, one reclaimed water booster station, 146 reclaimed valves, and the Residential pump station. As indicated previously, the District neither owns nor operates the golf course irrigation pumping stations or their distribution systems.

7. The District has installed several reuse flushing points and reclaimed water flushing hydrants throughout the District to maintain water quality in the reclaimed water distribution system. Although reuse water is treated to advanced secondary treatment standards that include high level disinfection and filtration, the District utilizes a secondary, disk filtration system located at the wastewater plant and downstream of the residential reuse pumping station to improve irrigation water quality provided for residential landscape irrigation. The current rated capacity of the disk filtration system, upgraded in 2020, is approximately 6,600 gallons per minute or 9 MGD. The residential pump station currently delivers approximately 4,000 gallons per minute during maximum peak irrigation demand periods.
8. Several development parcels were designed with community irrigation services. In these areas, the various Homeowners Associations (HOA) control and maintain the

irrigation systems serving the individual lots and common areas within. A portion of the reclaimed water service in the District is supplied via a master irrigation meter. Approximately eighteen (18) neighborhoods have master meters.

C. Storm Water Management

1. The Storm Water Management System originally completed and permitted consists of approximately 179 acres of created lakes. In 2021, the DCDD created a Stormwater Utility with associated rule and rate structures for operating and maintaining the stormwater lake and system components.
2. In September 2019, the District purchased mitigation bank credits and received a permit modification from the St. Johns River Water Management District (SJRWMD) for marsh mitigation. The lakes and marshes are connected to each other by drainage pipes and various drainage channels.

D. Toll Bridge

1. The toll bridge consists of a two-lane high-level fixed structure across the Atlantic Intracoastal Waterway. The bridge is approximately sixty-five (65) feet above the mean high water of the Atlantic Intracoastal Waterway and approximately 2,600 feet in length. This facility connects Interstate 95 via Palm Coast Parkway with State Road A1A.
2. The toll plaza associated with the toll bridge is located on the west side of the bridge and consists of two tollbooths and administration offices.
3. A connector road, Camino del Mar, which connects the toll bridge with State Road A1A, is also owned and maintained by the District. In January 2015, the Dunes CDD accepted ownership of Hammock Dunes Parkway from Camino del Mar to 16th Road.
4. The District, in late 2018, commissioned a traffic engineering consulting firm, Kisinger Campo & Associates (KCA), to perform an intersection traffic capacity and level of service analysis for the intersection of Hammock Dunes Pkwy. and Camino Del Mar along with Hammock Dunes Bridge. This report included a Highway Capacity Software (HCS) evaluation which indicated the Design Year 2045 AM and PM peak hour level of service (LOS) for the current two-lane configuration along the Hammock Dunes Bridge was found to be acceptable LOS D. In May 2023, a continuation of the original traffic analysis was performed by KCA to compare the signal with widening alternative to an all-way stop-controlled (AWSC) with widening alternative. The AWSC with widening alternative was determined to serve as a sufficient interim LOS improvement until Year 2040 when a traffic signal would be required.

IV. CURRENTLY PROPOSED EXPANSIONS NEXT FIVE YEARS

A. Potable Water, Wastewater, and Irrigation Utilities

1. Potable Water

The water treatment plant capacity was increased in May 2015 from 0.72 MGD to 1.44 MGD. It is not expected that additional capacity will be necessary to serve the potable water needs of the community. In April 2019, the District prepared and submitted an updated Capacity Analysis Report (CAR) for the water plant and related facilities to the Florida Department of Environmental Protection (FDEP) as required every five (5) years. The FDEP accepted the District's updated CAR findings that illustrated the District's potable water supply, treatment, pumping, and storage facilities are sufficiently sized to meet the projected service area finished water demand for the next ten (10) year operating and planning horizon. It is further anticipated that the current 1.44 MGD treatment plant capacity is sufficiently sized to meet the future potable water needs of the District's fully built-out community as currently planned.

The FDEP conducted a Compliance Evaluation Inspection of the District's Water Treatment Plant Reverse Osmosis Concentrate Outfall Permit (FL0355259) on May 9, 2023. The inspection activities are customarily performed every three (3) years by FDEP staff to review most all facility operational practices, records, and equipment readiness for the reverse osmosis concentrate system. The District received notice and final report from FDEP on June 26, 2023, indicating the system was determined to be in compliance with the Department's wastewater rules and regulations.

2. Wastewater

The Dunes Community Development District (CDD) currently owns and operates a recently re-rated 0.92 million gallon per day (MGD) wastewater treatment plant (WWTP). The design capacity of 0.92 MGD, realized upon completion of the DCDD WWTF Expansion and Improvement Project (Phase 1) in September 2019 and re-rating in 2021, provides necessary capacity for anticipated future year flows. An updated Capacity Analysis Report (CAR) was prepared and submitted along with the application for permit renewal to FDEP in July 2023. The recent CAR indicates current plant capacity is sufficient to serve wastewater treatment needs for the next five-year permit renewal period. Current annual average daily wastewater treatment plant flow is approximately 421,000 GPD or 46% of the permitted capacity.

The FDEP conducted a Compliance Evaluation Inspection of the District's Wastewater Treatment Facility (FLA011602) on November 28, 2022. The inspection activities are customarily performed every three (3) years by FDEP staff to review permittee wastewater facility operational practices, records, and equipment readiness. The District on December 12, 2022, provided additional documentation for responding to FDEP's request for information concerning the inspection findings. No further action items were requested by the Department.

B. Storm Water Management System

The storm water management infrastructure has been completed and requires no expansion to serve the final build out population. The District has accepted responsibility for the ongoing maintenance of the storm water system throughout the District. The biennial SJRWMD MSSW Stormwater Registered Professional's Inspection Report for the Hammock Dunes and Ocean Hammock stormwater system and outfalls was prepared and submitted by engineering consulting firm, CPH, Inc. on June 17, 2022. The report indicates the systems were inspected and appear to be functioning in accordance with regulatory requirements. Preliminary planning and design of improvements necessary to enhance the District's ability to harvest this resource to supplement reclaimed water to meet peak irrigation demands commenced in 2017.

The District, in October 2021, adopted a Stormwater Utility Service and related rules and fees for funding appropriate level of service attributes for maintaining reliable stormwater system elements and function. An engineering study was performed to assess the overall needs of the stormwater facilities and infrastructure and to analyze long-term sustainability of the stormwater system and its resources. The DCDD also developed a Stormwater Geographic Information System (GIS) database to provide a digital inventory and pertinent attributes of the District's stormwater infrastructure. This GIS database provides an interactive tool that references and maps the configuration and attributes of the existing stormwater collection system. The GIS database will also serve as a significant resource for assessing the disposition of various system components and is intended to be utilized to determine future rehabilitation and replacement program needs, priorities, and eventual costs. The District is currently preparing bid specifications for developing a televising, inspection, and cleaning contract activity to help ensure the reliability of the District's stormwater system.

C. Reclaimed Water System

The DCDD and the City of Palm Coast have an existing agreement that spells out the conditions of reclaimed water that is provided by the City of Palm Coast to the DCDD. The agreement includes a provision for the use of the DCDD's reclaimed water transmission main by the City for discharge of effluent to the Intracoastal Waterway (ICWW) especially during periods of wet weather. The City desires to increase its capability to discharge effluent to the ICWW and the DCDD desires to increase the amount of reclaimed water that may be attained from the City. Because of the potential to increase a long term, sustainable supply of irrigation water to the community, DCDD maintains ongoing discussions with the City as new service improvements or projects are contemplated. If feasible, the DCDD may consider partnering with the City in a project to expand the supply of reclaimed water to the DCDD while enhancing the City's capacity to discharge additional amounts of effluent to the ICWW during wet weather. DCDD is also looking at harvesting stormwater from its stormwater system to supplement reuse water for landscape irrigation. District staff continues to assess the feasibility and long-term sustainability of this water resource. The City of Palm Coast's recent replacement of the reuse transmission pumping equipment at their treatment facility did not appear to increase the amount of flow received at the DCDD's storage facility.

A capital improvement project was completed in 2020 to replace and upgrade the existing disk filtration system located downstream of the residential reuse pumping station to improve irrigation water quality provided for landscape irrigation. The capacity of the three (3) skid configured system is rated @ 2200 GPM each for a total capacity of 6600 GPM. The equipment upgrade provides an increased capacity to more effectively filter reclaimed water distributed from the lined storage pond

system. The upsized equipment exceeds peak irrigation demands realized from time to time with one skid unit either out of service or in a typical backwash cleaning cycle. Installation of an additional permanent reclaimed flushing device located at the southerly end of Island Estates was installed Fall 2022.

The District incurred the loss of approximately 600 linear feet of 12-inch diameter reclaimed water main in the vicinity of Hammock Dunes Golf Course Hole 18 south to Hammock Dunes Clubhouse due to dune erosion realized during Hurricane Nicole in early November 2022. Flagler County was declared eligible to receive public assistance grant funding for damages incurred during the Hurricane Nicole Incident Period identified between November 7 – 30, 2022 by the Governor’s Office. A temporary above ground reclaimed main was designed by CDM Smith in early 2023. The above ground installation of temporary main was completed by Hazen Construction in April 2023 to restore necessary service to the District’s residential reclaimed distribution system. An additional project was designed by CDM Smith to relocate a new reclaimed main westerly and under golf course property from Jungle Hut Road to Avenue de La Mer for installation via horizontal directional bore method. The project is tentatively scheduled for advertisement in Winter 2023. District staff is coordinating public assistance funding application process with FEMA, Florida Dept. of Emergency Management (FDEM), and Flagler County.

D. Toll Bridge - Hammock Dunes Parkway & Camino Del Mar Intersection

A new, modern toll collection system is complete. A recent study of the existing toll collection facility (building and site) concluded that improvements to the building were necessary and additional parking was needed to improve customer service access and provide parking for staff. An architectural engineering consultant completed design and permitting related activities for the improvements recommended in the study. The project was completed in July 2022.

Staff received the 2023 biennial inspection of the Hammock Dunes Bridge prepared by a traffic and roadway engineering consulting firm, Kisinger Campo & Associates, (KCA) dated June 27, 2023. The report indicates a Sufficiency Rating of 87.3 and a Health Index of 98.67. These benchmarks show little to no change as the 2021 inspection when the Sufficiency Rating and Health Index were 87.3 and 98.6, respectively.

The District, in November 2019, issued an engineering work authorization to KCA to prepare plans and bid documents for bridge repair needs to include cathodic protection, concrete repairs, joint replacements, ladder removal, fender and embankment repairs along with other miscellaneous repair activities outlined in previous inspection reports. Plans and specifications were completed for Hammock Dunes Bridge Rehabilitation Project and the project was advertised for receipt of bids and awarded to the most responsive bidder, Sieg & Ambachtsheer, Inc., in November 2020. The project was completed in November 2021 and during fiscal period where funding appropriations were planned and budgeted.

The District, in late 2018, also commissioned KCA to perform an intersection traffic capacity and level of service analysis for the intersection of Hammock Dunes Pkwy. and Camino Del Mar. The report “Final Traffic Technical Memorandum – Intersection of Hammock Dunes Pkwy at Camino Del Mar Intersection” dated May 22, 2019, included actual traffic counts for the intersection, a signal warrant analysis, and estimated level of service values based on traffic growth projections for various intersection configuration scenarios along with consideration for the existing bridge design configuration.

Conclusions and recommendations contained in the referenced Technical Memorandum are summarized as follows: The intersection is currently operating at an acceptable LOS capacity and additional capacity is anticipated to be needed by year 2031. Additional intersection capacity may be achieved with the installation of turn lanes and/ or traffic signalization. A traffic signal is currently warranted at the intersection based on current traffic volumes. The intersection is expected to operate well below capacity in design year 2045 with proposed signalization and new turn lanes in place as depicted in the report. Initial capacity analysis for the Hammock Dunes Bridge found that the existing 2-lane configuration appears adequate through 2045 design year. The technical memorandum also included recommendations for considering a west side widening of Hammock Dunes Parkway to lessen cost and impacts to existing facilities. The District has authorized and completed preliminary design of proposed signal and intersection improvements for determination of future right of way acquisition limits which will likely entail land requirements from Flagler County. Also recommended was a further evaluation of bridge capacity by performing a corridor analysis that includes both adjacent intersections at Palm Harbor Parkway and Camino Del Mar.

In May 2023, a continuation of the original traffic analysis was performed by KCA to compare the signal with widening alternative to an all-way stop-controlled (AWSC) with widening alternative. The AWSC with widening alternative was determined to serve as a sufficient interim LOS improvement until Year 2040 when a traffic signal would be required.

V. RENEWAL/REPLACEMENT OF FACILITIES

Potable Water System

Several renewal and replacement projects are included in the District's Capital Improvement Program (CIP). Recent potable water supply and treatment systems related project implementation schedules are listed below:

1. Supervisory Control and Data Acquisition (SCADA) Upgrade / Replacement Project (FY 21/22 – nearing completion)
2. St. Johns River Water Management District Consumptive Use Permit (CUP) Renewal (FY 23/24)
3. FDEP WTP Reverse Osmosis Concentrate Discharge Permit Renewal (FY 23/24)
4. Utility Rate Study for Water, Sewer, and Reclaimed Systems (FY 23/24)
5. Replace Chlorine Chemical Storage Tanks – Feed Systems (FY 21/22 – completed)
6. Ground Storage Tank / Clearwell Repairs and Maintenance (FY 23/24 – Underway)
7. WTP 750K Gallon Ground Storage Tank Cleaning & Inspection (FY22/23 - completed)
8. Additional Bulk Chemical Storage Tank / Piping Replacement (FY22/23 - completed)
9. Implementation of Neptune R900 Fixed Base Gateway Automated Meter Reading (AMR) & SaaS Software Systems (added FY 21/22 – completed)
10. WTP - Reverse Osmosis Feed Pump Engineering Evaluation (FY 22/23 - completed)
11. Other future year projects contained in District's Five (5) Year CIP include: Water Treatment Plant Scrubber, RO Feed Pump Improvements Design, WTP Generator, Water Quality Evaluation.

Wastewater & Reclaimed (Reuse) Systems

Several renewal and replacement projects are included in the District's Capital Improvement Program (CIP). Projects related to the wastewater treatment, collection and reclaimed distribution systems are scheduled for implementation as listed below:

1. Wastewater Treatment Plant FDEP Permit Renewal Application (FY 22/23 – nearing completion)
2. Reclaimed Main Permanent Relocation (FY 23/24)
3. Reclaimed Water System Split North - South Valve Installation Design & Construct (FY23/24)
4. Pump Station Rehabilitation Project LS 8 Madeira (FY 21/22) & LS 12 (FY 22/23) (Electrical/ Mechanical/ Piping – Design complete)
5. Programmable Logic Controller (PLC) Installation & Upgrade Project (FY 23/24)
6. WWTP Sludge Pump Installation (FY 22/23 - completed)
7. WWTP Tertiary Filter Canopy Replacement (FY 22/23 - completed)
8. Other future year projects contained in District's Five (5) Year CIP include: Pump Station Rehabilitation Projects (Electrical/ Mechanical/ Piping - priority conditions based assessment), Addition of auxiliary, stationary, emergency bypass pumping units at wastewater pumping stations (2 remaining), Influent & Reject Pumping Station Piping Upgrades, Residential Reclaimed Pump Station/ HVAC Improvements, Reclaimed Pond No. 3 Cleaning - Lining Repair, WWTP Train 1 Filter Rehabilitation, Reclaimed/ Stormwater Augmentation Line HD Lake System to Reject Pond.

Bridge and Hammock Dunes Parkway & Camino Del Mar

Several renewal and replacement projects are included in the District's Capital Improvement Program (CIP). Projects related to the Hammock Dunes Bridge and Hammock Dunes Parkway systems are scheduled for implementation as listed below:

1. HD Bridge Tolling Equipment Upgrades – E Transit (FY 23/24)
2. Camino Del Mar Intersection Expanded 4-Way Stop Design (FY 23/24)
3. Toll Entry Control Arm (FY 23/24)
4. Sunpass System Study (FY 23/24)
5. Milling & Resurfacing Hammock Dunes Pkwy & Camino Del Mar – Construction & CEI Administration (FY 22/23 - completed)
6. Other future year projects contained in District's Five (5) Year CIP include: Intersection Improvements – Signalization Final Design and Construction, Potential Migration to Sunpass Type System, Replace Parkway/ Bridge Lighting.

Stormwater System

Several renewal and replacement projects are included in the District's Capital Improvement Program (CIP). Projects related to the Districts stormwater system are scheduled for implementation as listed below:

1. Prepare Stormwater Geographic Information System (GIS) (FY 20/21 - completed)
2. Prepare Specifications – Clean and Televisive Stormwater System (FY 22/23 - ongoing)
3. Cleaning and Televising Stormwater System (FY 23/24)

4. Other future year projects contained in District's Five (5) Year CIP include:
Development of a Stormwater Inventory/ Annual Cleaning / Inspection Program,
Determination of appropriate Levels of Service standards, and evaluate future
funding mechanisms.