

APPENDIX I

WATER SUPPLY DEVELOPMENT PROJECT OPTIONS

Table J-1: Central Springs/East Coast Regional Water Supply Plan Water Supply Development Project Options for Volusia County

| County | Project Name | Implementing Entity | Project Description | Project Type | Water Source | Project Capacity (MGD) | Total Capital (\$M) | Estimated Annual O&M (\$/Year) | Status | Anticipated Completion (Year) |
|---------|---|-------------------------------------|---|-------------------------|---------------------------|------------------------|---------------------|--------------------------------|-----------------|-------------------------------|
| Volusia | Deep Creek/Leffler Water Supply, Treatment and Transmission Facility | West Volusia Water Suppliers (WVWS) | Construction of Upper Floridan aquifer wells, raw water transmission lines, centralized treatment, finished water storage, high service pumping and potable water transmission. | Well Field Optimization | Upper Floridan | 4.00 | \$44.10 | \$1,600,000 | Testing/ Design | 2024 |
| Volusia | Farnton Water Supply and Transmission Facilities | WVWS/Farnton LLC | Construction of 30 wells with transmission facilities; a lime softening water treatment plant; a ground storage tank; and a high service pump station. | Well Field Optimization | Upper Floridan | 4.00 | \$37.50 | \$1,600,000 | Planning | 2027 |
| Volusia | DeLand Reuse Retrofit Part 'B' and Wiley M. Nash Augmentation Facilities | WVWS | Reclaimed retrofit of 190 homes and the construction of surface water augmentation facilities serving the Wiley M. Nash WRF. | AWS, Reuse | Reclaimed, Surface Water | 4.13 | \$3.79 | \$300,000 | Complete | 2015 |
| Volusia | West Volusia Reclaimed Water Interconnects | WVWS | Construction of reclaimed water interconnects among the WVWS to maximize the beneficial reuse of reclaimed water. | Reuse | Reclaimed | 2.50 | \$8.59 | \$100,000 | Complete | 2016 |
| Volusia | Sanford-Volusia County Reclaimed Water Interconnect | WVWS | Construction of a 16" reclaimed water transmission main to convey reclaimed water from Sanford's WRF to Volusia County's distribution network. | Reuse | Reclaimed | 2.00 | \$1.57 | \$365,000 | Complete | 2018 |
| Volusia | Deltona Lakes Pump Station, Transmission Main and Augmentation (same as WVWS Project 4B Deltona Storage & Treatment Improvements) | WVWS | Construction of surface water intake, pump, and transmission facilities at Lake Monroe and treatment and storage facilities at Alexander Avenue for reclaimed water augmentation. | AWS, Reuse | Stormwater, Surface Water | 8.00 | \$7.77 | \$300,000 | Construction | 2024 |
| Volusia | Doyle Road Reclaimed Water Main Extension | WVWS | Construction of a transmission main to convey reclaimed water to the Alexander Ave. RIB site and to the Deltona Lakes WRF. | Reuse | Reclaimed | 2.00 | \$6.00 | \$100,000 | Complete | 2015 |
| Volusia | Breakaway Trails Reclaimed Water Storage & Pumping Facility | City of Ormond Beach | Construction of a 2 MG ground storage tank with high service pumps to increase storage capacity and improve reliability of existing reuse distribution system. | Reuse | Reclaimed | 1.00 | \$2.40 | \$10,000 | Complete | 2020 |
| Volusia | Holly Avenue Reclaimed Water Elements | City of Orange City | Extension of reclaimed water service in the Blue Spring Basin. | Reuse | Reclaimed | 0.16 | \$0.37 | N/A | Complete | 2020 |
| Volusia | Deltona Reclaimed Water Retrofits | City of Deltona | Retrofit of three existing residential neighborhoods (421 units) and one sports complex to replace potable water for irrigation with reclaimed water. | Reuse | Reclaimed | 0.16 | \$1.95 | \$15,000 | Complete | 2020 |
| Volusia | Daytona Beach - Williamson Blvd. Reuse | City of Daytona Beach | Installation of reclaimed water line on Williamson Blvd, between Dunn Avenue and Mason Avenue. | Reuse | Reclaimed | 0.65 | \$1.68 | \$1,000 | Complete | 2019 |
| Volusia | 2.5 MG Reuse Storage Tank | City of Daytona Beach | Construction a 2.5 MG reclaimed water storage tank. | Reuse | Reclaimed | 0.40 | \$4.50 | 21,000 | Complete | 2019 |
| Volusia | Howland Blvd. Phase 3 Reclaimed Water | City of Deltona | Reclaimed water main extension on Howland Blvd from SR415 to Elkcam Blvd. | Reuse | Reclaimed | 2.00 | \$0.49 | \$1,000 | Complete | 2015 |

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|---------|--|-----------------------|--|--------------|--------------|------------------------|---------------------|--------------------------------|-------------------------|-------------------------------|
| Volusia | Orange City Reclaimed Water Main and Water Meters | City of Orange City | Construction of a reclaimed water main extension along Veteran's Memorial Parkway from Hospice to Harley Strickland Blvd. | Reuse | Reclaimed | 0.25 | \$0.49 | N/A | Complete | 2015 |
| Volusia | Ormond Beach South Peninsula Reclaimed Water Expansion | City of Ormond Beach | Reclaimed water distribution network expansion to 653 properties. | Reuse | Reclaimed | 0.56 | \$5.10 | \$10,000 | Complete | 2017 |
| Volusia | Volusia County Advanced Wastewater Treatment for the Protection of Blue Spring | Volusia County | Expansion in capacity and improvement in treatment level to increase nitrogen removal from the Volusia County Southwest Regional WRF. | Reuse | Reclaimed | 0.02 | \$12.10 | \$865,000 | Complete | 2016 |
| Volusia | Volusia RCW Main Extension for I-4/SR 472 Activity Center | Volusia County | Construction of a reclaimed water main along Normandy Blvd north to the Graves Ave/Howland Blvd intersection. | Reuse | Reclaimed | 0.10 | \$6.15 | \$5,000 | Complete | 2018 |
| Volusia | DeLand RCW Master Plan Update - Phase 3 and 3a (Crystal Cove and Alexandria Point) | City of DeLand | Provision of reclaimed water to 239 homes. | Reuse | Reclaimed | 0.14 | \$1.45 | \$25,000 | Complete | 2019 |
| Volusia | DeLand Reclaimed Water Retrofit Project 2B | City of DeLand | Construction of a reclaimed water main to provide reclaimed water to 215 homes in Waterford and Heather Glen developments. | Reuse | Reclaimed | 0.13 | \$1.52 | \$6,000 | Complete | 2018 |
| Volusia | DeLand Reclaimed Water Retrofit Project Phase 1 | City of DeLand | Construction of a reclaimed water main to provide reclaimed water to 195 existing homes in Blue Lake Woods, Southridge Point, and University Ave region. | Reuse | Reclaimed | 0.12 | \$1.21 | \$6,000 | Complete | 2017 |
| Volusia | Reclaimed Pumping and Storage Expansion | City of Deltona | Expansion of reclaimed water pumping and storage. | Reuse | Reclaimed | 0.75 | \$1.80 | \$30,000 | Complete | 2015 |
| Volusia | DeLand Reclaimed Water Storage and Recovery | City of DeLand | Construction of transmission mains connecting wastewater treatment plan with two reservoirs. | Reuse | Reclaimed | 0.16 | \$1.03 | \$6,000 | Complete | 2016 |
| Volusia | Edgewater Reclaimed Water Quality Reservoir | City of Edgewater | Construction of reclaimed water main extensions, a reuse storage reservoir, and a wetland outfall. | Reuse | Reclaimed | 0.20 | \$4.89 | \$20,000 | Complete | 2020 |
| Volusia | Daytona Beach Potable Reuse Demo Testing Facility | City of Daytona Beach | Pilot project to demonstrate if highly treated reclaimed water can supplement the potable supply and reduce withdrawals from the Upper Floridan aquifer. Current flow supplements the reclaimed water system. Should Daytona implement on a production scale, the first phase could provide up to 2.0 MGD of alternative water supply for potable use. | AWS, Reuse | Reclaimed | 0.20 | \$1.90 | TBD | Complete (construction) | 2017 |

Total: 33.64 \$158.35

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|---------|---|---------------------|---|-------------------------|--------------------------|------------------------|---------------------|--------------------------------|------------------------|-------------------------------|
| Volusia | Kentucky Road Reclaimed Expansion ¹ | City of Orange City | Ground storage tank for alternative water sources. | Reuse | Reclaimed, Surface Water | 1.00 | \$2.00 | \$20,000 | Planning | 2026 |
| Volusia | City of Orange City Brackish Water Project ¹ | City of Orange City | Development of a brackish water source through the construction of a Lower Floridan aquifer well, raw water transmission line, and treatment facility. | AWS | Lower Floridan | 2.00 | \$30.00 | TBD | Planning | 2027 |
| Volusia | City of Orange City Wellfield Optimization ¹ | City of Orange City | Implementation of strategies to relocate withdrawals further from Blue Spring. | Well Field Optimization | Upper Floridan | 3.00 | \$6.00 | TBD | Planning | 2027 |
| Volusia | CRA Septic to Sewer ¹ | City of Orange City | Collection and transfer of septic tank wastewater for treatment at the county-owned Southwest Regional Wastewater Reclamation Facility, thereby increasing the quantity of available reclaimed water. | AWS | Reclaimed | 0.50 | \$10.00 | \$40,000 | Construction (Phase I) | 2030 |

¹ These projects were submitted during the public comment period and, therefore, were not included in the project totals identified within the Central Springs/East Coast Regional Water Supply Plan.

Table J-2: Central Springs/East Coast Regional Water Supply Plan Water Supply Development Project Options for Marion and North Lake Counties

| County | Project Name | Implementing Entity | Project Description | Project Type | Water Source | Project Capacity (MGD) | Total Capital (\$M) | Estimated Annual O&M (\$/Year) | Status | Anticipated Completion (Year) |
|--------|--|---------------------|---|-------------------------|----------------|------------------------|---------------------|--------------------------------|--------------|-------------------------------|
| Lake | Caldwell Citrus Gorgeous Groves Project | Caldwell Citrus LLC | Connection of a reclaimed water line to serve an agricultural operation. | Reuse | Reclaimed | 0.11 | \$0.04 | \$0 | Complete | 2015 |
| Lake | Mount Dora RCW Interconnect with Apopka | City of Mount Dora | Construction of a reclaimed water line from the Orange County line on South Round Lake Rd to the intersection of West Kelly Park Rd and Golden Gem Rd in Apopka. | Reuse | Reclaimed | 3.00 | \$1.10 | \$20,000 | Complete | 2020 |
| Marion | Marion County Silver Springs Shores Reuse to Spruce Creek | Marion County | Upgrade the Silver Springs Shores WWTF and the construction of reclaimed water transmission facilities including two reclaimed water lines that will serve an HOA and several golf courses. | Reuse | Reclaimed | 1.20 | \$9.82 | \$1,000 | Complete | 2016 |
| Marion | Marion County US441 Water Main Interconnect | Marion County | Construction of a potable water interconnect between the Spruce Creek Golf and Country Club PWS and the Stonecrest PWS. | Well Field Optimization | Upper Floridan | 0.12 | \$1.41 | \$1,349 | Complete | 2018 |
| Marion | Marion County SE 108 Water Main Interconnect | Marion County | Construction of a potable water interconnect between the Spruce Creek Golf and County Club PWS and the Silver Springs Shores PWS. | Well Field Optimization | Upper Floridan | 0.12 | \$1.81 | \$7,100 | Complete | 2020 |
| Marion | Marion County Lower Floridan Conversion | Marion County | Construction of two Lower Floridan aquifer production wells to replace withdrawals from the Upper Floridan aquifer in south central Marion County. | AWS | Lower Floridan | 1.50 | \$2.90 | \$10,000 | Design | 2022 |
| Marion | Marion County Well Field Optimization | Marion County | Implementation of strategies to relocate withdrawals from the Upper Floridan aquifer further from Silver Springs. | Well Field Optimization | Upper Floridan | 6.04 | \$4.72 | Unknown | In progress | TBD |
| Marion | Ocala Lower Floridan Aquifer Conversion ¹ | City of Ocala | Phased construction of Lower Floridan aquifer wells and a water treatment plant. | AWS | Lower Floridan | 11.34 | \$50.00 | \$1,620,600 | Construction | 2028 |
| Marion | Ocala Parks Connection Project | City of Ocala | Connection of nine parks and one right-of-way to the reclaimed water system and retrofit of respective irrigation systems to accommodate reclaimed water. | Reuse | Reclaimed | 0.04 | \$0.08 | Unknown | Complete | 2016 |
| Marion | Ocala Reuse Main Extension | City of Ocala | Construction of reclaimed water mains that will transmit reclaimed water to two city parks and replace groundwater for irrigation. | Reuse | Reclaimed | 0.03 | \$0.98 | Unknown | Complete | 2015 |
| Marion | Ocala Septic Tank and Well Elimination Program | City of Ocala | Removal of septic tanks and wastewater treatment package plants with connection to Ocala's central sewer system, which will increase reclaimed water flows. | Reuse | Reclaimed | 0.22 | \$10.00 | Unknown | Complete | 2018 |
| Lake | Eustis Eastern WWTP Upgrade | City of Eustis | Expansion to the capacity of the Eustis Eastern WWTP that will make additional reclaimed water available. | Reuse | Reclaimed | 1.00 | \$7.50 | \$2,189,000 | Complete | 2018 |
| Marion | Marion County Silver Springs Shores Regional Capacity Improvements/Package Plant Removal | Marion County | Expansion to the capacity of the Silver Springs Shores WWTP that will make additional reclaimed water available. | Reuse | Reclaimed | 0.01 | \$10.57 | \$362,413 | Construction | 2022 |

Total: 24.73 \$100.93

¹ The planned capacity of the Lower Floridan aquifer wellfield and water treatment plant will be 15 mgd, however, Ocala's 2040 projected water demand is 11.34 mgd, which is the value used in the sufficiency analysis.

Table J-3: Central Springs/East Coast Regional Water Supply Plan Water Supply Development Project Options for Brevard, Indian River, and Okeechobee Counties

| County | Project Name | Implementing Entity | Project Description | Project Type | Water Source | Project Capacity (MGD) | Total Capital (\$M) | Estimated Annual O&M (\$/Year) | Status | Anticipated Completion (Year) |
|--------------|---|-----------------------|---|--------------|---------------------------|------------------------|---------------------|--------------------------------|--------------|-------------------------------|
| Indian River | Vero Beach Hybrid Septic Tank Effluent Pumping System Phase 2 Service Lines | City of Vero Beach | Construction of service lines to direct 0.3 mgd of effluent from low pressure sewage collection system to the wastewater treatment facility. | Reuse | Reclaimed | 0.30 | \$0.62 | TBD | Complete | 2019 |
| Indian River | Vero Beach Reverse Osmosis WTF Expansion | City of Vero Beach | Expansion of RO capacity for treatment of brackish groundwater for potable use. | AWS | Upper Floridan (brackish) | 2.60 | \$2.38 | Unknown | Complete | 2017 |
| Okeechobee | FPL Okeechobee Clean Energy Center UFA to APPZ Conversion | Florida Power & Light | Conversion of an UFA well to the Avon Park Permeable Zone (APPZ), which is a lower quality source. | AWS | Upper Floridan (brackish) | 2.20 | \$0.96 | \$53,200 | Design | 2021 |
| Indian River | IRC Olso Reverse Osmosis Enhanced Recovery Process | Indian River County | Replacement of membrane array and optimization of dedicated R.O. trains to pumps, which will increase recovery of brackish UFA water from 75 to 85%. | AWS | Upper Floridan (brackish) | 0.94 | \$11.30 | TBD | Design | 2022 |
| Indian River | Stormwater Treatment Facility and Pipeline | City of Vero Beach | Development of a surface water source that will replace groundwater withdrawals for irrigation. Includes construction of intake, transmission lines, and high-service pump station and modification of water treatment plant. | AWS | Surface Water | 3.00 | \$10.00 | TBD | Design | 2024 |
| Brevard | Joe Mullins Reverse Osmosis Water Treatment Plant Expansion | City of Melbourne | Expansion of the Joe Mullins Reverse Osmosis Water Treatment Plant from 5 mgd to 10 mgd of finished water capacity. | AWS | Upper Floridan (brackish) | 5.00 | \$37.00 | \$400,000 | Design | 2026 |
| Indian River | IRC West Regional Wastewater Treatment Facility Reclaimed Water Storage | Indian River County | Construction of a reclaimed water reservoir for wet weather flow storage for use during high demand. | Reuse | Reclaimed | 4.00 | \$7.14 | TBD | Planning | TBD |
| Brevard | North Regional Reverse Osmosis WTP Rehab | City of Palm Bay | Rehabilitation of the North Regional Reverse Osmosis WTP including the installation of a new deep injection well that will eliminate the need to dilute brine with treated wastewater prior to disposal. | AWS | Upper Floridan (brackish) | 1.50 | \$21.70 | \$1,500,000 | Design | 2023 |
| Brevard | South Regional Reverse Osmosis Plant Expansion (Phase II) | City of Palm Bay | Expansion to increase capacity at South Regional RO Plant from 4 mgd to 6 mgd. | AWS | Upper Floridan (brackish) | 2.00 | \$14.60 | \$200,000 | Construction | 2022 |
| Brevard | South Regional Reverse Osmosis Plant Expansion (Phase III) | City of Palm Bay | Expansion to increase capacity at South Regional RO Plant from 6 mgd to 10 mgd. | AWS | Upper Floridan (brackish) | 4.00 | \$19.80 | TBD | Planning | 2027 |
| Brevard | South Regional Water Reclamation Facility (Phase I-A) | City of Palm Bay | Construction of a 1.0 mgd membrane bioreactor water reclamation facility. | AWS | Reclaimed | 0.34 | \$27.00 | \$3,040,000 | Construction | 2022 |
| Brevard | South Regional Water Reclamation Facility RCW Line Extensions | City of Palm Bay | Extension of reclaimed lines to provide reclaimed water for irrigation to existing groundwater users. | AWS | Reclaimed | 0.66 | \$3.80 | \$25,000 | Design | 2023 |
| Brevard | South Regional Water Reclamation Facility (Phase I-B) | City of Palm Bay | Expansion of the South Regional Water Reclamation Facility from 1.0 mgd to 2.0 mgd. | AWS | Reclaimed | 1.00 | \$8.50 | TBD | Planning | 2024 |
| Brevard | South Regional Water Reclamation Facility (Phase I-C) | City of Palm Bay | Expansion of the South Regional Water Reclamation Facility from 2.0 mgd to 3.0 mgd. | AWS | Reclaimed | 1.00 | \$20.00 | TBD | Planning | 2025 |
| Indian River | Hammond Groves Surface Water Capture | Hammond Groves, Inc. | Installation of a pump to capture surface water to mix with groundwater for irrigation. | AWS | Surface Water | 0.33 | \$0.25 | Unknown | Complete | 2020 |
| Indian River | Sun Ag Surface Water Pumps | Sun Ag LLC | Upgrade of pumps and relocation to canal to access surface water for irrigation. | AWS | Surface Water | 0.29 | \$0.24 | Unknown | Complete | 2020 |

Total: 29.16 \$185.29