

ORANGE COUNTY

PLANNING DIVISION

2022-1 REGULAR CYCLE AMENDMENT 2022-1-B-WSFWP-1

2010 - 2030 COMPREHENSIVE PLAN

**BOARD OF COUNTY
COMMISSIONERS**

**FEBRUARY 8, 2022
TRANSMITTAL PUBLIC HEARING**

PREPARED BY:
ORANGE COUNTY PLANNING, ENVIRONMENTAL
AND DEVELOPMENT SERVICES

PLANNING DIVISION
COMPREHENSIVE PLANNING SECTION






Interoffice Memorandum

February 8, 2022

TO: Mayor Jerry L. Demings
-AND-
County Commissioners (BCC)

FROM: Alberto A. Vargas, MArch., Manager, Planning Division 

THROUGH: Jon V. Weiss, P.E., Director
Planning, Environmental, and Development Services Department

SUBJECT: 2022-1 Regular Cycle Comprehensive Plan Amendment
2022-1-B-WSFWP-1 (Update to the 10-Year Water Supply Facilities
Work Plan)
Board of County Commissioners (BCC) Transmittal Public Hearing

2022-1 Regular Cycle Staff-Initiated Text Amendment 2022-1-B-WSFWP-1 is scheduled for a BCC transmittal public hearing on February 8, 2022. This amendment was heard by the Planning and Zoning Commission (PZC)/Local Planning Agency (LPA) at a transmittal public hearing on January 20, 2022.

The report is also available under the Amendment Cycle section of the County's Comprehensive Planning webpage. See:

<http://www.orangecountyfl.net/PlanningDevelopment/ComprehensivePlanning.aspx>.

The above-referenced 2022-1 Regular Cycle Staff-Initiated Text Amendment scheduled for consideration on February 8 is a staff-initiated text amendment. This amendment includes changes to the Goals, Objectives, and/or Policies of the Comprehensive Plan. Specifically, this amendment entails the update to the 10-Year Water Supply Facilities Work Plan, a document incorporated into the Potable Water, Wastewater and Reclaimed Water Element of the Comprehensive Plan that identifies alternative and traditional water supply development projects and conservation and reuse activities needed to meet the projected future water demands.

Following the BCC transmittal public hearing, the proposed amendment will be transmitted to the Florida Department of Economic Opportunity (DEO) and other State agencies for review and comment. Staff expects to receive comments from DEO and/or the other State agencies in March 2022. Pursuant to 163.3184, Florida Statutes, the proposed amendment must be adopted within 180 days of receipt of the comment letter. The adoption hearings are tentatively scheduled before the LPA on April 21, 2022, and before the BCC on May 10, 2022.

2022-1 Regular Cycle Amendment 2022-1-B-WSFWP-1
BCC Transmittal Public Hearing
February 8, 2022
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Any questions concerning this document should be directed to Alberto A. Vargas, MArch, Manager, Planning Division, at (407) 836-5802 or Alberto.Vargas@ocfl.net or Greg Gologowski, AICP, Chief Planner, Comprehensive Planning Section, at (407) 836-5624 or Gregory.Gologowski@ocfl.net.

AAV/jmd

Enc: 2022-1 Regular Cycle Amendment 2022-1-B-WSFWP-1
BCC Transmittal Staff Report

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Read File

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2022-1 Regular Cycle Comprehensive Plan Amendment

Staff-Initiated Comprehensive Text Amendment

Amendment Number	Sponsor	Description of Proposed Changes to the 2010-2030 Comprehensive Plan (CP)	Project Planner	Staff Rec	LPA Rec
2022-1-B-WSFWP-1 (Water Supply Facilities Work Plan)	Utilities Department	Proposed text amendments to the Potable Water, Wastewater and Reclaimed Water Element and related elements, incorporating changes to the Orange County ten-year Water Supply Facilities Work Plan (WSFWP), and adopting the WSFWP by reference	Maria A. Cahill, AICP	Transmit	Transmit (7-1)

ABBREVIATIONS INDEX:

ABBREVIATIONS INDEX: CP-Comprehensive Plan; FLUM-Future Land Use Map; FLUE-Future Land Use Element; GOPS-Goals, Objectives, and Policies; OBJ-Objective; WSFWP-Water Supply Facilities Work Plan

2022 FIRST REGULAR CYCLE STAFF-INITIATED TEXT AMENDMENT

AMENDMENT TO THE 2010-2030 COMPREHENSIVE PLAN BOARD OF COUNTY COMMISSIONERS TRANSMITTAL BOOK

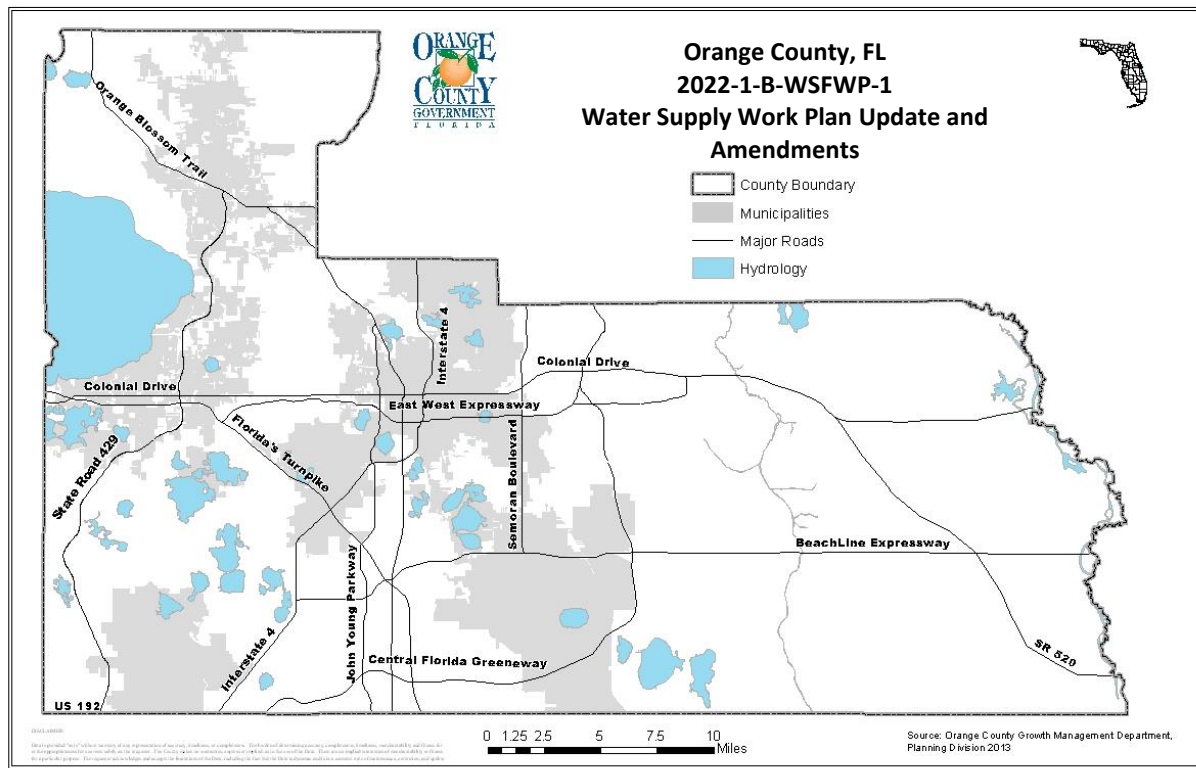
INTRODUCTION

This is the Board of County Commissioners (BCC) transmittal staff report for the First Regular Cycle Amendment 2022-1-B-WSFWP-1 to the Comprehensive Plan (CP). This amendment was heard by the Planning and Zoning Commission (PZC)/Local Planning Agency (LPA) at a transmittal public hearing on January 20, 2022.

The above-referenced 2022-1 Regular Cycle Staff-Initiated Text Amendment entails the update to the 10-Year Water Supply Facilities Work Plan, a document incorporated into the Potable Water, Wastewater and Reclaimed Water Element of the Comprehensive Plan that identifies alternative and traditional water supply development projects and conservation and reuse activities needed to meet the projected future water demands. Since this is the transmittal stage for this amendment, there will be a second round of public hearings for adoption after the Florida Department of Economic Opportunity (DEO) and other State agencies complete their review of the proposed amendment and provide comments, expected in March 2022. Adoption public hearings are tentatively scheduled before the LPA on April 21, 2022 and the BCC on May 10, 2022.

Once the Regular Cycle amendment has been adopted by the BCC, it will become effective 31 days after DEO notifies the County that the plan amendment package is complete. This amendment is expected to become effective in June 2022, provided no challenges are brought forth for the amendment.

Any questions concerning this document should be directed to Alberto A. Vargas, MArch., Manager, Planning Division, at (407) 836-5802 or Alberto.Vargas@ocfl.net, or Gregory Gologowski, AICP, Chief Planner, Comprehensive Planning Section, at (407) 836-5624 or Gregory.Gologowski@ocfl.net.



The following meetings and hearings have been held for this proposal:			Project/Legal Notice Information Title: Update to the 10-Year Water Supply Facilities Work Plan, a document incorporated into the Potable Water, Wastewater and Reclaimed Water Element of the Comprehensive Plan that identifies alternative and traditional water supply development projects and conservation and reuse activities needed to meet the projected future water demands. Divisions: Planning, Utilities Request: N/A Revision: Policy WAT1.1.2; and Objective WAT3.1; and Policies WAT3.1.6; WAT3.1.7; and WAT3.1.8
Report/Public Hearing	Outcome		
✓	Staff Report	Recommend Transmittal	
✓	LPA Transmittal January 20, 2022	Recommend Transmittal (7-1)	
	BCC Transmittal	February 8, 2022	
	Agency Comments	March 2022	
	LPA Adoption	April 21, 2022	
	BCC Adoption	May 10, 2022	

Staff Recommendation

Make a finding that the proposed amendments incorporating the Orange County Water Supply Facilities Work Plan Fiscal Year 2017/2018 to 2027/2028 and related text amendments are consistent with the County's adopted Comprehensive Plan and the 2020 CFWI Regional Water Supply Plan, and are sufficiently complete to recommend **TRANSMITTAL** of **2022-1-B-WSFWP-1**.

A. Background

The 2002 Florida State Legislature expanded the local government comprehensive plan requirements to strengthen coordination of regional water supply planning and local land use planning. The 2004 and 2005 Legislatures modified and further strengthened the requirements. One of the most significant requirements of this legislation is that each local government must adopt a long-range Water Supply Facilities Work Plan (Work Plan) identifying needed water supply facilities, including alternative and traditional water supply projects and conservation and reuse necessary to meet the water needs for Orange County for at least a 10-year planning period.

The Work Plan ensures Orange County's ability to provide potable water to meet the needs of the existing and future population of the service area during the planning period. The legislation also requires that the Work Plan be directly linked with the appropriate Water Management Districts' Regional Water Supply Plans.

The County Work Plan must be updated, at a minimum, every 5 years within 18 months after the governing board of a water management district approves an updated regional water supply plan. In order to accommodate this Work Plan, several elements of the Comprehensive Policy Plan require amending. The elements affected are the Potable Water, Wastewater, and Reclaimed Water, and related amendments to Capital Improvements.

The current 10-Year Water Supply Facilities Work Plan was last adopted by the Board of County Commissioners on May 9, 2017, and covers the FY 2017/2018 to 2027/2028 time frame. Per section 163.3177(6)(c)3, F.S., each local government's 10-Year Water Supply Facilities Work Plan must be updated within 18 months after the governing board of a water management district approved an updated regional water supply plan.

As of November 2020, the governing boards of the St. Johns River Water Management District, South Florida Water management District, and Southwest Florida Water Management District all formally adopted a new 2020 Central Florida Water Initiative (CFWI) Regional Water Supply Plan that includes the Orange County area. This amendment incorporates the next update to the County's 10-Year Water Supply Facilities Work Plan consistent with the new 2020 CFWI Regional Water Supply Plan.

The 2020 CFWI Regional Water Supply Plan includes a comprehensive plan for Orange, Osceola, Polk, Seminole and southern Lake counties. The CFWI is working to provide a uniform approach for water

management in a region where the boundaries of three districts come together and where water withdrawals in one district may impact water resources and water users throughout the area. Staff from the South Florida Water Management District, St. Johns River Water Management District, and Southwest Florida Water Management District worked together and in conjunction with members of various CFWI technical teams and other stakeholders to generate this 2020 CFWI Regional Water Supply Plan. The 2020 CFWI Regional Water Supply Plan contains an assessment of projected water demands and potential sources of water to meet these demands through 2040. The Regional Water Supply Plan is intended to address the water supply related issues of the region and provide a framework to meet the water needs of the CFWI Regional Water Supply Plan area through 2040.

This amendment includes various text revisions to the Potable Water, Wastewater, and Reclaimed Water and related amendments to Capital Improvements in support of the Work Plan. The new Orange County Water Supply Facilities Work Plan will cover the FY 2021/2022 to 2031/2032 time-frame.

B. Policy Amendments

Following are the policy changes proposed by this amendment. The proposed revisions are shown in ~~strikethrough~~/underline format. Staff recommends adoption of this amendment.

WAT1.1.2 Orange County shall review the Master Plan every five years, updating when necessary, and shall review and update the Water Supply Facilities Work Plan (Work Plan) within 18 months of the update to the Regional Water Supply Plans (last updated in November ~~2015~~ 2020) to identify system deficiencies and, if necessary, implement a plan for correction. The Work Plan (Orange County Water Supply Facilities Work Plan, Fiscal Year ~~2017/2018 to 2027/2028~~ 2021/2022 to 2031/2032), prepared by the Orange County Utilities Department in conjunction with the Planning Division, is herein adopted, by reference, as data, analysis and supporting documentation for the element.

OBJ WAT3.1 Orange County shall develop and maintain a Water Supply Facilities Work Plan (Work Plan) for at least a 10-year planning period addressing traditional and alternative water supply sources, facilities, and issues necessary to serve existing and future development within the jurisdiction of Orange County. The Work Plan shall be based on a long term strategy that incorporates the following components:

- Continue to implement and expand effective water conservation measures
- Increase rates for potable and non-potable water used for irrigation to encourage greater conservation
- Optimize the efficient use of fresh groundwater from the Floridan aquifer
- Interconnect systems to create regional flexibilities and efficiencies

- Maximize the beneficial use of reclaimed water
- Continue aquifer recharge projects in areas of greatest benefit
- Expand reuse distribution facilities for irrigation and other beneficial uses
- Continue to develop additional alternative water supply sources such as brackish groundwater, indirect and direct potable reuse, and surface water for potable supply and non-potable augmentation
- Investigate additional management and supply options such as reservoir storage, and stormwater reuse
- Utilize aquifer storage and recovery for supply management.

WAT3.1.6 Orange County's capacity related strategy and capital improvement projects for traditional water supply facilities are summarized below consistent with the Work Plan. These projects and project components, including estimated costs and funding sources, are adopted in the Capital Improvements Element as part of the 5-year schedule of capital improvements. Project numbers are listed as appropriate for cross reference to Index by Financial Unit in the capital improvements schedule.

- ~~Oak Meadows Wellfield Expansion (Permitted Well OM-5), currently in the construction phase, includes one new Lower Floridan aquifer well at the facility with a capacity of 1.8 mgd, AADF. This well is planned for completion by 2017. (West Service Area, CIS 1532-14)~~
- ~~Western Regional WSF/Wellfield Phase IIIB Expansion, currently in design and planned for completion by 2023, may increase treatment capacity by another 7.0 mgd, AADF and involves one new Lower Floridan aquifer well (well WR-11, already permitted) with a capacity of 2.2 mgd, AADF, to be completed by 2018. (West Service Area, CIS 1532)~~
- ~~Malcolm Road WSF/Wellfield, currently in design (treatment facility) and construction (wells), includes a new treatment plant and Floridan aquifer wellfield, each with capacity of 4.0 mgd, AADF. Wells are planned for completion by 2017, and treatment plant by 2019. (Southwest Service Area, CIS 1557)~~
- ~~Eastern Regional WSF Phase IIIB Expansion, with final design and construction planned for completion in September 2017 and February 2020, respectively, increases treatment capacity from 50 mgd to 62.4 mgd AADF. (East Service Area, CIS 1554-02)~~
- ~~East Service Area-South Service Area Water Transmission Main Interconnection, planned to be constructed by 2019, will increase system flexibility and reliability. (CIS 1450 and 1508)~~
- ~~I Drive Booster Pump Station, currently in the construction phase and planned for completion in 2018, will eventually transmit water from the Cypress Lake brackish groundwater AWS project. (CIS 1498-10)."~~

- Oak Meadows Wellfield Expansion (Permitted Well OM-5), currently in the construction phase, includes one new Lower Floridan aquifer well at the facility with a capacity of 1.6 mgd AADF. The outfitting of this well is planned for 2021 (West Service Area, CIS 1532-14).
- Western Regional WSF/Wellfield Phase IIIB Expansion, currently in design and planned for completion by 2023, may increase treatment capacity by another 7.0 mgd and involves one new Lower Floridan aquifer well (well WR-11, already permitted) with a capacity of 2.2 mgd AADF, to be completed by 2021 (West Service Area, CIS 1532).
- Southwest Service Area Storage and Repump Facility, a new storage and repump facility with 5,000 gallons per minute (gpm) pumping capacity and a 3.5 MG ground storage tank, to be completed by 2023, will increase system flexibility and reliability (Southwest Service Area, CIS 1557).
- Eastern Regional Water Supply Facility Improvements – Sodium Hypochlorite Conversion to Bulk Supply and Feed System, currently in construction, project includes conversion of existing on-site generation of sodium hypochlorite to bulk supply and feed system which will expand the treatment capacity of the facility to 62.5 mgd firm, to be completed in 2021 (East Service Area, CIS 1554).
- Many other plant process improvements, including treatment, transmission, mechanical, electrical, and well upgrades, at various locations, not associated with capacity increases.

WAT3.1.7 Development of Orange County’s reclaimed water system is a critical component of the County’s water supply strategy. Orange County’s capacity-related strategy and capital improvements projects for water reclamation and reuse facilities are summarized below consistent with the Work Plan. These projects and project components, including estimated costs and funding sources, are adopted in Orange County’s Capital Improvements Element as part of the 5-year schedule of capital improvements. Project numbers are listed as appropriate for cross reference to Index by Financial Unit in the capital improvements schedule.

- ~~Northwest WRF Phase IIIB Expansion, planned to be constructed by 2025, will increase the capacity of the chlorine contact chamber, increasing the overall treatment capacity of the facility by 1.0 mgd, AADF. (West Service Area, CIS 1435)~~
- ~~Northwest WRF Reclaimed Main Extension to Apopka, planned to be constructed by 2022, and expected to add 2.5 mgd to 3.0 mgd, AADF to the existing capacity of the reuse system in the West Service Area, (West Service Area, CIS 1435)~~

- ~~Southwest WRF Phase I, planned to be constructed by 2025, for a total treatment capacity of 5.0 mgd, AADF. Further phases are planned to provide additional capacity and to receive flow diversion from the South Service Area. (Southwest Service Area, CIS 1507)~~
- ~~South WRF Phase V Expansion, planned completion of March 2019, will increase treatment capacity by 13 mgd from 43.0 to 56.0 mgd, AADF. (South Service Area, CIS 1555-01)~~
- ~~Eastern WRF Phase V Improvements, planned for completion by May 2018, will increase treatment capacity from 19.0 to 24.0 mgd, AADF. (East Service Area, CIS 1538)~~
- ~~Eastern WRF Phase VI Expansion, planned to be completed by 2027, will increase treatment capacity from 24.0 to 29.0 mgd, AADF. (East Service Area, CIS 1538)~~
- ~~Southeast Reclaimed Water System Expansion Project, will be constructed throughout the planning horizon to distribute reclaimed water to meet reuse irrigation demands in the East Service Area, estimated to be as much as 9 mgd, AADF by 2020. (CIS 1483, CUP #3317 Condition 26)~~
- Northwest WRF Phase IIIB Expansion, planned to be constructed by 2025, will increase the capacity of the chlorine contact chamber, increasing the overall treatment capacity of the facility by 1.0 mgd AADF (West Service Area, CIS 1435).
- Northwest WRF High Service Pumping Project, planned to be constructed by 2026, and expected to add to the existing capacity of the reuse system in the West Service Area (West Service Area, CIS 1435).
- Southwest WRF Phase I, planned to be constructed by 2022, for a total treatment capacity of 5.0 mgd AADF. Further phases are planned to provide additional capacity and to receive flow diversion from the South Service Area (Southwest Service Area, CIS 1507).
- Southwest WRF Phase 2, planned to be constructed by 2028, for a total treatment capacity of 10 mgd AADF. Further phases are planned to provide additional capacity to receive flow diversion from the South Service Area (Southwest Service Area, CIS 1507).
- South WRF Phase V Expansion, planned completion by 2022, will increase treatment capacity by 13 mgd from 43.0 to 56.0 mgd, AADF. (South Service Area, CIS 1555).
- Eastern WRF Phase VI-A Expansion, planned to be completed by 2026, will increase peak hour reclaimed water pumping capacity from 6,000 gpm to 17,000 gpm (East Service Area, CIS 1538).
- Eastern WRF Phase VI-B Expansion, planned to be completed by 2029,

will increase treatment capacity from 24.0 to 31.0 mgd AADF (East Service Area, CIS 1538).

- Southeast Reclaimed Water System Expansion Project, will be constructed throughout the planning horizon to distribute reclaimed water to meet reuse irrigation demands in the East Service Area, estimated to be as much as 9 mgd AADF by 2025 (CIS 1483, CUP #3317 Condition 26).
- South WRF Phase VI-A Expansion, planned to be completed by 2027, will increase peak hour reclaimed water pumping capacity (South Service Area, CIS 1555).

WAT3.1.8

Development of alternative water supply projects is a critical component of Orange County's water supply strategy and necessary to meet future water demands. Orange County's alternative water supply projects including surface water capital improvement projects are summarized below consistent with the Work Plan. These projects and project components, including estimated costs and funding sources are adopted in the County's Capital Improvements Element as part of the 5-year schedule of capital improvements. Project numbers are listed as appropriate for cross reference to Index by Financial Unit in the capital improvements schedule.

- ~~Cypress Lake Wellfield, a collaborative AWS STOPR project, will provide OCU with a 9 mgd, AADF finished water potable supply capacity increase. Construction of this project is currently projected to be completed by approximately 2023. (CIS 1550-08, CFWI RWSP Projects 3, 4 and 5).~~
- ~~St. Johns River/Taylor Creek Reservoir Water Supply Project, an estimated 50 mgd, AADF surface water potable supply project in 2030 (CIS 1550; CUP #3317 Condition 23; WUP # 48-00134 W Condition 25; CFWI RWSP Project 126), peak production of 54 mgd finished water. OCU is participating collaboratively in this regional water supply development project with five other central Florida potable water suppliers: OUC, East Central Florida Services, and Tohopekaliga Water Authority (who all provide some water in unincorporated Orange County); and the City of Cocoa and City of Titusville. The exact supply volume distribution among suppliers is yet to be finalized, but it is anticipated that OCU's share would be at least 10 mgd, AADF.~~
- Cypress Lake Wellfield, a collaborative AWS STOPR project, will provide OCU with a 9.0 mgd AADF finished water potable supply capacity increase. Construction of this project is currently projected to be completed by approximately 2027 (CIS 1550-08, CFWI RWSP Projects 3, 4, 5).
- Taylor Creek Reservoir/St. Johns River Water Supply Project, an estimated 50 mgd AADF surface water potable supply project, peak production of 54 mgd finished water. OCU is participating collaboratively in this

regional water supply development project with five other central Florida potable water suppliers: OUC, East Central Florida Services, and the Toho Water Authority (who all provide some water in unincorporated Orange County); and the City of Cocoa and City of Titusville. The exact supply volume distribution among suppliers is yet to be finalized, but it is anticipated that OCU's share would be at least 10 mgd AADF (CIS 1550; CUP #3317 Condition 23; WUP # 48-00134-W Condition 25; CFWI RWSP Project 126).

**ORANGE COUNTY
WATER SUPPLY FACILITIES WORK PLAN
FISCAL YEAR 2021/2022 TO 2031/2032
(TRANSMITTAL DRAFT)**

**Infrastructure, Community, and Development Services
Orange County, Florida
201 South Rosalind Avenue
Orlando, Florida 32801**

February 8, 2022

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**ORANGE COUNTY
WATER SUPPLY FACILITIES WORK PLAN
Fiscal Year 2021/2022 to 2031/2032**

1 INTRODUCTION

1.1 Background

In 1997, the State Legislature amended the Florida Water Resources Act (Chapter 373, Florida Statutes [F.S.]) to require the five water management districts to initiate regional water supply planning. Regional plans were required in all areas of the state where reasonably anticipated sources of water were deemed inadequate to meet 20-year demands. In November of 2020, the St. Johns River Water Management District (SJRWMD), South Florida Water Management District (SFWMD) and Southwest Florida Water Management District (SWFWMD) each adopted the Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP), 2020. The CFWI RWSP 2020 was a collaborative effort between the water management districts and stakeholders to meet the existing and future water supply needs and potential sources of Central Florida through 2040, while focusing on sustainability through effective planning, development, and management of water as a precious resource.

Historically, water supply and land use planning in Florida were handled mostly as separate issues. As limitations on the continued use of traditional water supplies became increasingly apparent, the Legislature enacted bills in 2002, 2004, 2005, and 2011 to address the state's water supply needs more effectively by improving the coordination between local land use planning and water supply planning. Significant changes were made to Chapters 163 and 373, F.S., to strengthen the statutory linkage between the RWSPs prepared by the water management districts and the comprehensive plans prepared by the local governments.

A major component of these statutory revisions was the requirement for local governments subject to a RWSP to prepare a 10-year water supply facilities work plan and to incorporate the work plan into the local comprehensive plan. Orange County falls within both the SJRWMD and the SFWMD and therefore must adopt its water supply facilities work plan within 18 months after the latter of the two water management districts approves its RWSP. The work plan must address building of public, private, and regional water supply facilities, including the development of alternative water supplies, identified as necessary to serve existing and projected development, for at least a 10-year planning period, within Orange County's jurisdiction (i.e., unincorporated Orange County). Amendment of the County's comprehensive plan must also:

- Identify and incorporate the alternative water supply (AWS) project(s) selected by the local government from projects identified in the updated RWSP(s), or the alternative project(s) proposed by the local government [s. 163.3177(6)(c), F.S.].
- Identify the traditional and AWS development projects and the conservation and reuse programs necessary to meet current and future water use demands within the local government's jurisdiction [s. 163.3177(6)(c), F.S.].

1.2 Purpose

This document represents the water supply facilities work plan (Work Plan) for Orange County (the County), as required by Chapter 163, F.S. This Work Plan includes a water supply summary and subsequent capital improvement plan developed to ensure that adequate water supplies and public facilities are available to serve the water supply demands of the County's growing population. An amendment to the County's Comprehensive Policy Plan (CPP) will incorporate this Work Plan as part of the Potable Water, Wastewater and Reclaimed Water element, and additional revisions to related CPP elements (e.g., Capital Improvements) will be recommended for consistency with the Work Plan. Policies regarding the specific Work Plan components can be found in WAT3.1.1 through WAT3.2.4 within the CPP. The Work Plan is intended to be a dynamic document, updated by the County every five years, within 18 months after the water management district governing boards approve updated RWSPs [s. 163.3177(6)(c), F.S.].

The data and analysis section of the Work Plan includes:

- An inventory of potable and reclaimed water service providers within the jurisdiction of Orange County.
- The potable and reclaimed water service areas associated with the above providers.
- A summary of existing facilities, design capacities, and permit allocations.
- A summary of existing demands and a 10-year projection of anticipated total water demands for the major potable water providers.
- A summary of existing flows and a 10-year projection of anticipated reclaimed water supply from each major reclaimed water provider.
- An assessment of future needs within the planning horizon, via a facility capacity analysis noting capacity surpluses and deficits.
- Development of a future water supply strategy to reconcile needs with available resources, including identification of planned traditional and alternative sources of water.
- Identification of current and planned conservation and reuse practices and regulations.

Based on the capacity analysis and assessment of future needs, the capital improvement projects identified to implement the timely construction of public, private, and regional water supply facilities should overcome projected deficits within the planning horizon. These key capital improvement projects are updated by Orange County on an annual basis as part of the five-year schedule of capital improvements included in the Capital Improvement Element of the County's CPP.

2 WATER SUPPLY SUMMARY

2.1 Orange County Political Jurisdictions

Orange County covers an area of approximately 1,000 square miles in east-central Florida and was home to an estimated 1.4 million residents in 2020. It is comprised of the unincorporated portion of the County which is under the jurisdiction of Orange County government, and the following 13 municipalities (**Figure 1**):

- City of Apopka
- City of Bay Lake
- City of Belle Isle
- Town of Eatonville
- City of Edgewood
- City of Lake Buena Vista
- City of Maitland
- Town of Oakland
- City of Ocoee
- City of Orlando
- Town of Windermere
- City of Winter Garden
- City of Winter Park

In addition to the above-listed municipalities, a special taxing district within Orange County, the Reedy Creek Improvement District (RCID), also has independent governmental jurisdiction. Established in 1967, RCID is the regulating authority for the *Walt Disney World* Resort and surrounding areas. RCID's jurisdictional boundary (**Figure 1**) covers approximately 18,900 acres in southwest Orange County, including the cities of Lake Buena Vista and Bay Lake and some additional areas of Orange County, plus 6,100 acres in Osceola County. The enabling legislation for the RCID provided it with many of the responsibilities of a city or county, including providing utilities, drainage, flood control, waste collection, roads and bridges, fire protection, land use planning, and enforcement of building codes. By contract, Reedy Creek Energy Services (RCES) operates these systems on behalf of RCID.

2.2 Potable Water Service Providers in Unincorporated Orange County

Potable water service in unincorporated Orange County is currently provided by the following significant public and private water supply utilities:

- Orange County Utilities
- Orlando Utilities Commission
- Apopka (City of)
- Apopka (Zellwood Water Users)
- East Central FL Services Inc
- Florida Governmental Utility Authority
- Mount Dora (City of)
- Ocoee (City of)
- Orange County Research and Development Authority (Central FL Research Park)
- Tohopekaliga Water Authority
- University of Central Florida
- Wedgefield Utilities
- Winter Garden (City of)
- Winter Park (City of)

The potable water service areas within the County associated with the above-listed utility providers are depicted in attached **Figure 2**. While Orlando Utilities Commission (OUC) has a greater permitted capacity to supply potable water to residents within Orange County, mainly within the Orlando city limits, Orange County Utilities (OCU), a department of the Orange County government, is the largest potable water service provider to unincorporated Orange

County. Together, OCU and OUC account for most of the potable water provided to customers in unincorporated Orange County.

Five other significant utilities not on the above list—the City of Casselberry, the City of Maitland, the Town of Oakland, Utilities Inc., and the Town of Eatonville—provide potable water service within Orange County; however, their water service areas remain within their jurisdictional boundaries and do not contribute to the supply within unincorporated Orange County. For this reason, it is not necessary to address these providers as part of Orange County’s Work Plan.

There are other utilities that provide limited potable water service within unincorporated Orange County. These providers, however, have no potential for growth within their service areas or provide small quantities relative to the other suppliers and are therefore not addressed explicitly in this Work Plan. RCES (the utility provider for RCID) is a significant water supplier but provides less than 0.2 million gallons per day (mgd) of potable water to two small developments in unincorporated Orange County.

The 14 potable water service providers for unincorporated Orange County, as listed above, operate numerous water supply facilities, which are described in detail in attached **Appendix A**. While AWS sources are currently being explored, these potable water providers currently use Floridan aquifer groundwater as their primary water supply source. As summarized in **Appendix A**, Orange County maintains territorial/joint planning area agreements with the other public and private water providers within the County to define service area boundaries and avoid duplication of service. When a proposed development in unincorporated Orange County requests potable water service, the Orange County Planning Division coordinates extensively with the appropriate provider(s) to ensure that sources and facilities will be available concurrent with the development.

Attached **Table 1** summarizes the existing capacities of the water supply facilities—both source facilities (i.e., wells) and finished water facilities (i.e., treatment plants)—operated by the two main potable water suppliers in unincorporated Orange County. Source and treatment facility capacity information for the other (minor) water suppliers was not readily available and therefore not included explicitly in **Table 1**. Similar supplier-specific information can instead be found in **Appendix A** and **Appendix B**. In addition, **Table 2** presents a summary of existing consumptive or water use permit allocations associated with each of the 14 potable water providers in Orange County.

2.3 Reclaimed Water Service Providers in Unincorporated Orange County

Twelve of the utilities that provide potable water also provide wastewater treatment services within parts of unincorporated Orange County. However, these service boundaries are not entirely congruent, nor do all of them provide reclaimed water to customers within unincorporated Orange County. For the purposes of this report, only those utilities providing reclaimed water will be of interest. Reclaimed water (reuse distribution) services in unincorporated Orange County are currently provided by the following significant public and private wastewater utilities:

- Orange County Utilities
- Orlando (City of)
- Apopka (City of)
- Mount Dora (City of)
- Ocoee (City of)
- Tohopekaliga Water Authority
- Pluris Wedgefield
- Winter Garden (City of)

The reclaimed water service areas within the County associated with the above-listed utility providers are depicted in attached **Figure 3**. OCU is the largest provider of reclaimed water service within unincorporated Orange County. The City of Orlando also provides a significant amount of reclaimed water service within the unincorporated area. OCU and the City of Orlando jointly represent most of the wastewater/reclaimed water service in unincorporated Orange County.

One other large utility, RCES, provides reclaimed water service within Orange County; however, the RCES reclaimed water service area remains within the RCID jurisdictional boundary and contributes a small amount to the reuse supply within unincorporated Orange County. For this reason, this reuse provider is not addressed as part of Orange County’s Work Plan.

The eight significant reclaimed water service providers in unincorporated Orange County listed above operate numerous water reclamation facilities (WRFs), which are described in detail in attached **Appendix B**. As summarized in the appendix, Orange County maintains territorial agreements with the other public and private wastewater/reclaimed water providers within the County to define service area boundaries and avoid duplication of service. When a proposed unincorporated Orange County development requests wastewater or reclaimed water service, the Orange County Planning Division coordinates with the appropriate provider(s) to ensure that sources and facilities will be available concurrent with the development.

Attached **Table 3** summarizes the existing capacities—both treatment capacity and reuse system capacity—and projected flows of the WRFs operated by OCU and the City of Orlando, the two main reclaimed water service providers in unincorporated Orange County.

2.4 Demand Projections

The population of Orange County is anticipated to increase by about 51 percent between 2015 and 2040 (CFWI RWSP 2020). Due to the amount of developable land, the largest portion of this increase is expected to occur within the unincorporated portion of the County. Information on the County’s population projections—both for the entire County and for only the unincorporated areas—is included in the data and analysis provided in the Future Land Use Element.

The existing and projected future population within unincorporated Orange County has an associated total water demand; however, this demand is met by a complex combination of supply from numerous public suppliers, along with a significant volume of self-supply (e.g., domestic wells, pond withdrawals, etc.). Thus, for the purposes of this report, public supply will be the focus, including potable and reclaimed water, as previously mentioned. A large percentage of the data compiled in this report, such as demand projections, has been adapted from the recently implemented CFWI RWSP 2020. The Bureau of Economic and Business Research (BEBR) medium population projection values were taken from the CFWI RWSP 2020 and used for this report, as these are moderate estimates. The full list of public supply (potable) and reuse

(reclaimed) projections can be found in Table A-5a and Table A-13a, respectively, of the CFWI RWSP 2020 Appendix A.

Each utility provider has its own territorial service area, which most often includes areas within both unincorporated Orange County and within municipal jurisdictional areas. The providers in Orange County each develop demand forecasts for their individual service areas and obtain consumptive use permits from the water management districts to address those demands. Although each provider is required to use a demand projection methodology acceptable to the water management districts, these methods often vary from utility to utility. For these reasons, estimation of total water demand projections directly associated with the population of unincorporated Orange County is difficult, particularly if compatibility is required with the individual forecasts made by utilities as part of their permitting efforts.

For this work plan, the CFWI RWSP 2020 demand values were used. Orange County coordinated with the two major potable water providers (OCU and OUC) to compile data summarizing historical actual and future estimated potable water demand within unincorporated Orange County. Demand met with water from these two providers represents most of the water demand in the unincorporated areas of the County. Development of viable water supply plans and identification of required capital improvement work plan projects for these two main providers will effectively address the water supply source and facility concurrency issues associated with nearly all the projected future growth within unincorporated Orange County.

For the two main water suppliers (OCU and OUC), their potable water demand within unincorporated Orange County represents only a portion of the total potable water service area demand for which they are responsible. That is, these providers have additional demands in their service areas that occur within municipality boundaries or other areas not in unincorporated Orange County. **Table 4** presents the total potable water demands in Orange County for each of these two potable water providers, separated by water management district. The water demand projections shown assume average year rainfall conditions (5-in-10). Demands are typically higher during drought conditions (1-in-10) and lower during extreme wet years.

2.5 Existing Capacity Analysis

Through comparison of existing potable water supply facility capacities with projected potable water demands, an assessment of future needs within the 10-year planning horizon can be completed for the two primary utility providers serving unincorporated Orange County. For these two potable water service providers (OCU and OUC), for which unincorporated Orange County only represents a portion of their responsible service area (e.g., OUC facilities provide water in the County and within the City of Orlando), it is not practical or feasible to determine exactly a subdivided portion of the capacity of their existing water supply facilities or permits that are specifically applicable to unincorporated Orange County. For this reason, the existing capacity analysis for OCU and OUC shown at the bottom of **Table 5** is addressed for their entire service areas.

Table 5 summarizes and compares, for the two primary potable water service providers serving unincorporated Orange County, projected potable public supply water demands with potable water supply capacities (both source and treatment facilities) and permit allocations. The table

indicates that the combined current permitted groundwater allocation for OCU and OUC will be just barely sufficient to meet projected demands through 2035; therefore, alternative sources of water (such as reclaimed water and future surface water) are suggested and planned. As noted in the table, the combined potable water demand within unincorporated Orange County met by the two major suppliers is predicted to increase from 103.9 mgd in 2020 to 134.7 mgd in 2035, an estimated increase of 30 percent.

Table 5 indicates that OCU's existing water supply source facilities (i.e., wells) will have sufficient annual average capacity to meet the projected total water demand through 2030, yet OCU's current average day treatment capacity will need to be augmented during the 10-year planning horizon (by 2030). The table indicates that OUC will have sufficient water treatment capacity through 2035. In addition, the combined existing infrastructure treatment capacity of OCU and OUC is sufficient through 2035 to meet the entire County-wide demand. This is a direct result of the planning, development, and permitting of additional facilities including capital improvement projects that are forecasted to offset potential deficit that would otherwise occur. The planned water resource management and capital improvement strategy for Orange County water supply is presented in the following section, and specific OCU and OUC projects are listed in the capital improvement work plan section below.

2.6 Future Water Supply Strategy

The potable water suppliers in unincorporated Orange County historically have used potable groundwater from the Floridan aquifer as the primary source for public supply. Fresh groundwater is considered a traditional water source. However, the initial phase of the CFWI technical process concluded with a determination that the amount of traditional groundwater currently permitted in the five-county CFWI area, which includes Orange County, exceeded sustainable supply quantities. The CFWI process then provided guidance for a combination of water sources and water supply project options that could meet the needs of the region.

The CFWI RWSP 2020 indicates that water sources available to the region include groundwater (potable and brackish), reclaimed water, surface water, and stormwater, and concludes that the future water demands of the CFWI Planning Area can be met "...with appropriate management, continued diversification of water supply sources, water conservation, and implementation of identified water supply and water resource development projects."

Dozens of specific, named AWS projects at various stages of development have been identified in the CFWI RWSP 2020 documents for potential implementation by water supply providers. Appropriate water resource development strategies, management techniques, and AWS projects delineated in the CFWI RWSP 2020 have been incorporated into this Work Plan. Orange County has identified that its most effective course of action within the planning horizon is to:

- Optimize the use of groundwater from the Floridan aquifer.
- Maximize the use of reclaimed water.
 - Continue aquifer recharge projects in areas of greatest benefit.
 - Expand reuse distribution facilities for irrigation and other beneficial use.

- Continue to implement effective water conservation measures.
- Develop additional AWS sources such as brackish groundwater, indirect and direct potable reuse, and surface water for potable supply and non-potable system augmentation.
- Investigate additional options such as aquifer storage and recovery (ASR), reservoir storage, and stormwater reuse for future implementation as feasible.

OCU's operations within the planning horizon will be based on this water supply strategy. In addition, Orange County government will coordinate with, support, and encourage the other water supply providers within its jurisdiction to follow a similar plan. The development of AWS sources in Orange County are occurring in coordination with both water management districts and other utilities in the region so that they will be available when additional groundwater is not available. The individual components of Orange County's water supply plan are detailed below.

2.6.1 Efficient Use of Groundwater

For the 10-year planning horizon considered in this Work Plan, fresh groundwater will remain the primary source of water to meet potable water demands in unincorporated Orange County. Orange County has invested in the development and application of extensive groundwater flow models, which serve as tools to better understand the natural system and optimize wellfield and beneficial recharge operations. The groundwater withdrawals of the numerous Orange County providers are widely distributed to minimize localized environmental effects.

In addition, a significant percentage of the potable water distribution system pipelines in Orange County are interconnected. For example, the OUC potable water distribution system is fully interconnected. OCU's West, Southwest, and South Service Area water distribution systems also are interconnected. OCU is in the process of interconnecting the East Service Area to its South Service Area, effectively linking the entire OCU system. Completion of this is projected by the end of 2022. These are the two largest potable water distribution systems in Orange County. Also, they have emergency interconnections between their two systems at several locations.

The interconnected nature of the OCU and OUC distribution networks, along with many of the other water providers, creates an efficient, reliable, and flexible system. If one or more water supply facility is out of service, other facilities can usually provide water to the areas affected by the service outage. In addition, groundwater withdrawals throughout Orange County can be optimized by redistributing pumpage to areas least likely to affect sensitive environmental features. For this reason, OCU operates multiple storage and repump facilities throughout the County.

2.6.2 Expansion of Reclaimed Water Reuse

Central Florida has long been a leader in the application of highly treated reclaimed water as a source to meet many non-potable needs, including irrigation, industrial uses, and as a means of recharging the local aquifer system. In unincorporated Orange County, nearly 100 percent of wastewater collected is reused.

Reclaimed water is a major alternative water source to be used as part of the County's strategy to supplement groundwater use into the future. Currently, all reclaimed water from OCU's three WRFs is beneficially reused for irrigation, industrial use, aquifer recharge through rapid infiltration basins (RIBs), and wetland enhancement. Irrigation uses include residential, commercial, and agricultural public access reuse. The City of Orlando also reuses a significant percentage of reclaimed water produced at its three WRFs. The Water Conserv II reclaimed water distribution system in west Orange County uses reclaimed water from the County's South WRF and the City of Orlando's Water Conserv II WRF extensively for agricultural, residential, commercial, and golf course irrigation, and aquifer recharge via RIBs. Currently, the primary industrial use for reclaimed water in unincorporated Orange County is for cooling at the Curtis H. Stanton energy facility.

Orange County will continue to invest in the development of reclaimed water reuse facilities in all the OCU service areas. Future planned OCU projects include significant expansion of public access reuse irrigation systems. In addition, Orange County will coordinate with, encourage, and develop inter-utility agreements (wherever feasible) with other reclaimed water service providers in unincorporated Orange County, Orange County municipalities, and the surrounding region to maximize the beneficial use of reclaimed water to help offset the demand for potable water.

Until recently, consumptive or water use permit (CUP/WUP) conditions for many water suppliers mandated the use of minimum annual volumes of reclaimed water for non-potable uses including land application and public access reuse irrigation according to given timelines (see **Appendix A**). OCU's CUPs, issued while these requirements were in place, contain those use requirements. The reclaimed strategy for unincorporated Orange County includes achieving those permit-required reclaimed water use targets. In particular, OCU is fully committed to investigating and developing all feasible reuse opportunities to meet the requirements for minimum reclaimed water utilization volumes specified by Condition 26 of its SJRWMD CUP #3317 and by Condition 29 of its SFWMD WUP #48-00134-W (as detailed in **Appendix A**).

The County is actively expanding its reuse irrigation systems through the identification and planned development of supplemental supplies, where feasible and permissible. Sources of potential backup supply for the public access reuse systems include groundwater, surface water, and stormwater. Many reclaimed water providers in unincorporated Orange County are investigating, permitting, and developing reuse system augmentation projects to facilitate the increased use of reclaimed water to reliably meet non-potable demands.

Additional activities being performed by Orange County and the various utilities that will expand the use of reclaimed water in the County and facilitate meeting previously-issued CUP/WUP requirements for reclaimed water utilization include:

- Interim septic tank systems approved following Potable Water/Wastewater/Reclaimed Water Policy WAT2.2.1 will be required to connect to central wastewater where such facilities are available (Orange County Potable Water/Wastewater/Reclaimed Water Policy WAT2.2.7).
- Where economically practical and feasible, the County will maintain existing and develop new wholesale potable water and reclaimed water service agreements.

- Continue to encourage the selling of reclaimed water to other users, such as golf courses, for their use in meeting landscape irrigation needs that will offset their use of groundwater (Potable Water/Wastewater/Reclaimed Water Policy WAT2.5.2, Aquifer Recharge Policies AR1.1.12 and 1.1.13, Potable Water/Wastewater/Reclaimed Water Policy WAT2.3.9).
- Continue to require by ordinance connection of all new developments to the reuse system, if service is available (Potable Water/Wastewater/Reclaimed Water Policy WAT2.5.3, Orange County Code Section 37-4).
- In creating County land development regulations to facilitate aquifer recharge and reduction of potable water demands (Conservation Policy C1.11.5), the County will investigate the feasibility of retrofitting existing residential and commercial development to use reclaimed water for landscape irrigation.
- Continue to expand the existing system of reclaimed water metering and continue to require individual metering of reclaimed water connections to single-family residential customers on public streets (Potable Water/Wastewater/Reclaimed Water Policy WAT1.3.5).
- The County will implement feasible options to use all available reclaimed water supplies for beneficial applications (Potable Water/Wastewater/Reclaimed Water Policy WAT2.5.1).
- Investigate the feasibility of using a water-conserving rate structure for reclaimed water customers (Potable Water/Wastewater/Reclaimed Water Policy WAT2.5.4).

2.6.3 Enhancement of Aquifer Recharge

Orange County has long been a leader in the development of aquifer recharge enhancement projects using reclaimed water. Orange County and the City of Orlando currently send a combined total of about 30 mgd of reclaimed water to RIBs of the Water Conserv II system in western Orange County and eastern Lake County. Due to the hydrogeology of that region, these RIBs have been shown to be highly effective at recharging the Floridan aquifer. Several other reclaimed water providers in Orange County, including Apopka, Ocoee, and Winter Garden, also use RIBs to recharge the potable water aquifer in the high-recharge zones of western Orange County.

2.6.4 Continuation of Water Conservation Efforts

Orange County currently administers a significant water conservation program. The Water Conservation Team includes four full time employees and two part-time interns who develop and implement education, incentive, and regulatory enforcement programs. Additionally, seven contractual staff members patrol the service area and administer the irrigation enforcement program.

The County also maintains a comprehensive Water Conservation Plan document, submitted to the water management districts during recent permit modifications, which is consistent with the County's CPP, and which includes Orange County's adoption of ordinances that:

- Limit lawn and ornamental irrigation hours (Potable Water/Wastewater/Reclaimed Water

Policy WAT2.3.10).

- Encourage Florida Friendly landscape (Potable Water/Wastewater/Reclaimed Water Policy WAT2.3.11 and Conservation Policies C1.11.3 and C1.11.4).
- Require ultra-low volume fixtures (Potable Water/Wastewater/Reclaimed Water Policy WAT2.3.11).
- Require rain sensor devices, mandatory for new construction and for extensive retrofits of existing sprinkler systems (Potable Water/Wastewater/Reclaimed Water Policy WAT2.3.11).
- Provide for a water conservation-based rate structure (Conservation Policy C1.11.11).

The County's water conservation practices can be simplified into three basic categories: education programs, economic incentives, and regulatory enforcement. Public education programs target student and adult populations. Economic incentives are also used to promote water-saving fixture/irrigation device replacements and new technology to better inform customers of water use patterns and correct wasteful behavior. Also, regulatory enforcements and changes to Orange County ordinances and codes have allowed for further conservation efforts to be made regarding landscaping, water reclamation, and fixtures. Within these categories, Orange County operates the following conservation program:

- *Water Watch* restriction enforcement program that provides educational notices and restriction information to first time violators and issues fines to repeat violators.
- *Distribution System Leak Detection* using sounding techniques while technicians perform maintenance on hydrants and valves; a system-wide audit was completed in 2014, concluding that OCU had an unaccounted-for water loss of approximately 5%.
- *Toilet Replacement Voucher Incentive Program (VIP)* offers utility bill credit up to \$100 per toilet to replace existing high-flow toilets with ultra-low-flow toilet models; replaced 5,652 fixtures since 2003.
- *Showerhead Exchange* program offers customers to bring in low-efficiency showerheads in exchange for high-efficiency Water Sense models.
- *Efficient Nozzle Replacements* for irrigation systems to models that save up to 30% more water.
- *Mobile Irrigation Lab (MIL) Audits* provide high water use customers with free, professional landscaping analysis and recommendations (Potable Water/Wastewater/Reclaimed Water Policy WAT1.8.3).
- *Presentations and Events* at the mall, homeowners' association meetings and community events: giving out of conservation materials, educating how to detect and repair leaks.
- *School Events* for Elementary, Middle, and High School students (Blue Thumb Junior Detective Program, Touring the Water Facts, The Wonder of Water, The Water Color Project, Rain Barrel Painting Project, Waterwise, and the various other specific events).
- *Adult Education* programs teach residential and commercial customers the value of

efficient landscaping (Florida Friendly Landscaping, Irrigation Workshops, Landscape Design Workshops, Rain Barrel and Composting Classes).

- *Attendance at Conferences* about water management and conservation, including AWWA, University of Central Florida (UCF), Florida Water Resource Conference, and the Florida Statewide Conservation Commission.
- *Water Wise Neighborhood* provide low flow shower heads, aerators, rain sensors, hose bib timers, and Smart irrigation timers to OCU potable water customers participating in the Water Wise Neighborhood Program.

The Orange County ordinance pertaining to irrigation restrictions was updated in 2008, 2010 and 2012 to specify days of the week irrigation is allowed to occur based on the time of year; identify times of day when irrigation cannot occur; reconcile irrigation restrictions throughout the county so that restrictions are consistent across water management districts; specify notification of enforcement and monetary penalties. The ordinance applies to all water users, even if they irrigate from a well or a pond. Agricultural, golf course, and reclaimed water uses are currently exempt from the rule. As the water management districts continue to reassess and update their watering restriction regulations in the future, Orange County likewise will review its water conservation ordinance and revise it when necessary to maintain consistency.

To reduce future demand for water, Orange County will continue to implement the extensive water conservation program components described above. Conservation Element Policy C1.11.11 provides enabling language in the County's CPP for implementation of these measures, and for periodic assessment of the water conservation program. All Orange County water conservation-related policies and ordinances apply to all areas of Orange County, including municipalities, unless those municipalities have their own water conservation ordinance(s), which will overrule. In general, all areas of Orange County follow water conservation rules that are generally consistent with the conservation requirements set forth by the water management districts, including constraints on day-of-week and time-of-day allowed for irrigation.

Orange County will continue to use a water conservation rate structure for OCU's customers (Potable Water/Wastewater/Reclaimed Water Policies WAT1.8.1 and WAT1.8.2) and implement water conservation and shortage regulations including the specific restrictions of the SJRWMD and SFWMD during declared water shortages (Potable Water/Wastewater/Reclaimed Water Policy WAT2.3.12). The County maintains a five-tier inclined block rate structure that promotes water conservation. As of Fiscal Year (FY) 2020/2021, potable water rates start out at \$1.23 per thousand gallons for the 0-3,000 gallon block and climb to \$13.54 per thousand gallons for any residential use above 30,000 gallons per month.

Orange County supports the use of innovative water conservation techniques and strategies as they become available. The County will strive to maximize the conservation of water resources through coordination with SJRWMD, SFWMD, and other CFWI stakeholders, and through implementation of County and other agency programs. The County's water supply planning and conservation efforts are consistent with the Orange County Mayors Sustainable Operations and Resilience Action Plan (SORAP).

OUC's comprehensive water conservation program includes water conservation education using a comprehensive media campaign featuring various communication channels, community outreach, special programs and campaigns; education and enforcement of landscape irrigation guidelines; water distribution system improvements and leak detection including renewal and replacement of piping and meters; conservation promoting rate structures and rate increases; customer audits, both indoor and irrigation; conservation rebate programs for various conservation measures; combined electric and water conservation programs and campaigns; and reclaimed water use.

OUC is committed to water conservation and has achieved significant savings since its 20-year consumptive use permit (CUP) was issued in 2004. OUC's gross per capita demand was reduced from 225 gallons per person per day in 2004 to 155 gallons per person per day in 2020. Since nearly half of OUC's demand is from commercial services, gross per capita rather than residential per capita is the best metric to use in determining conservation savings.

2.6.5 Investigation of Aquifer Storage and Recovery

ASR can facilitate the use of water supply sources, such as surface water or reclaimed water, which have significant seasonal variations in availability. In a cooperative project with the SJRWMD, Orange County supported an ASR feasibility study by providing in-kind services for the installation of an ASR well in the eastern part of the County under capital improvement schedule (CIS) Project Number 1550 (Potable Water/Wastewater/Reclaimed Water Policy WAT3.1.8). Following the pilot testing period, the County was granted an operational permit (May 2016) for the storage of approximately 2 mgd annual average daily flow (AADF) of potable water, up to approximately 800 million gallons (MG) of total storage.

2.6.6 Development of Alternative Water Supplies

As discussed, the CFWI RWSP 2020 determined that currently permitted allocations in the central Florida region exceed the sustainable supply available from traditional groundwater sources. To accommodate future growth and to supplement groundwater and reclaimed water supplies, utility providers are investigating and advancing plans to develop and construct small and regional-scale AWS projects. Due to economies of scale and the need to develop such sources at minimum capacities that often exceed the projected needs of a single utility, most of the proposed AWS projects require extensive coordination and cooperation amongst regional utility providers.

Orange County is participating in the advancement of additional alternative water sources as necessary to meet future demands. The County will focus on efficient, cost-effective, and technically feasible alternative sources that do not cause adverse impacts to water quality, wetlands, aquatic systems, springs, or other environmental systems. Per its current CUP #3317 conditions, OCU was required to identify and propose the preliminary design, budget, and schedule of two AWS projects by December 2018 to supplement its SJRWMD groundwater allocation and meet projected demands through the permit expiration (2036).

To meet these permit requirements, OCU and OUC are partnering with the City of Cocoa, Tohopekaliga (Toho) Water Authority (TWA), East Central Florida Services, Inc., and SJRWMD to plan, design and construct the new Taylor Creek Reservoir/St. Johns River (TCR/SJR) Water Supply Project. This source will provide up to an estimated 50 mgd of surface

water for the populations served by the project partners, a majority of which will reside within Orange County. Funding for development of this surface water supply will be split among the project partners, with the potential for co-funding from the water management districts and state or federal government. OCU has committed to receive at least 10 mgd, and OUC has committed to receive at least 5 mgd, of new AWS from this project. Many project delays have arisen, and the project is still in the planning stage. The surface water permit will expire in 2027, and allocation will be contingent on renewal.

OCU is also partnering with the City of St. Cloud, the TWA, Polk County, and the RCID (collectively called the STOPR Group) to develop the Cypress Lake brackish wellfield in Osceola County. As a requirement of WUP 48-000134-W, this project is permitted to provide a total of 30 mgd of finished water supply to the STOPR Group, of which 9 mgd is OCU's committed share. The preliminary design phase of the Cypress Lake water supply facility, wellfield and transmission project has been completed, and the STOPR Group is moving forward with final design. It is projected that finished water will be available from the Cypress Lake AWS facility within the 10-year planning horizon, or by approximately 2027.

Orange County is committed to implementing due diligence and performing everything within its control to advance these and other AWS projects; however, development of surface water supply projects will require more time than originally estimated by the water management districts. The specific surface water AWS projects included as potential components of Orange County's Work Plan are discussed further as part of the capital improvement work plan below.

2.6.7 Regional Cooperation and Interlocal Agreements

Orange County faces a certainty that future expansion of its water supplies will be increasingly challenging and expensive. A major challenge for Orange County has been the natural tendency of utilities to compete for the limited available supplies of groundwater and surface water. This type of win/lose competition for limited resources leads to protracted litigation and may prevent utilities from developing cost-efficient and synergistic solutions. Progress has been made by central Florida utilities by entering into formal agreements to cooperate and seek equitable regional water supply solutions that include interconnections between their systems, development of AWS sources, and sharing of costs among all parties.

Regional cooperation can be critical to the success of a project. OCU's WUP 48-00134-W renewal process resulted in the formation of the STOPR Group mentioned above, which collaborated to complete their SFWMD WUP applications. The STOPR Group has gone on to track legislative issues and perform compliance requirements together, and members of the STOPR Group, OUC, and Seminole County (known as "STOPR+2") are working on ongoing CFWI planning teams and efforts. The utilities have found that the voice of a unified group is more effective than the sum of the voices of the individual utilities. Orange County has helped facilitate these cooperative efforts and will continue to be a leader in the facilitation of regional utility cooperation regarding water supply.

Furthermore, Orange County coordinates extensively and effectively with other local governments, regulatory agencies, and utility providers to achieve local and regional objectives regarding the cost-effective and reliable provision of utility service while protecting the natural

environment. A detailed description of the County's coordination approach and a list of policies are provided in the Intergovernmental Coordination Element of the Orange County CPP.

Regarding potable water, wastewater, and reclaimed water service, Orange County maintains the following main types of agreements, and continually reviews, updates, and creates new agreements as needed:

- *Territorial agreements*, defining utility service areas (Potable Water/ Wastewater/ Reclaimed Water Policy WAT1.7.1; Intergovernmental Coordination Policies ICE1.3.7 and ICE1.5.4).
- *Wholesale service agreements*, providing for wholesale or emergency water supply, wastewater, or reclaimed water service (in one or both directions) between OCU and other utility providers (Intergovernmental Coordination Policies ICE1.5.4 and ICE1.5.10).
- *Regional cooperative agreements*, for a variety of mutually beneficial endeavors, such as investigating alternatives, combining resources, or developing new or expanded regional sources and facilities (Potable Water/Wastewater/Reclaimed Water Policies WAT1.2.15 and WAT3.2.3; Intergovernmental Coordination Policies ICE1.5.1 and ICE1.5.10).

Lists of the existing territorial and wholesale agreements between OCU and other utility service providers are provided in attached **Appendix A** and **Appendix B**. In addition, regional agreements are critical for the future cost-effective and environmentally responsible implementation of water resource management methods and development of traditional and alternative supplies in the fast-growing east-central Florida region. Orange County currently maintains the following key regional cooperative agreements:

- *Orange County/City of Orlando Southwest 201 Wastewater Facilities Interlocal Cooperative Agreement*, a cooperative agreement between Orange County and the City of Orlando, joint owners of this largest reuse project of its kind (agricultural irrigation) in the world. This agreement was executed in 1983, with no specified end date (Potable Water/Wastewater/Reclaimed Water Policy WAT3.2.4 and Intergovernmental Coordination Policy ICE1.5.11).
- *Orange County/Orlando Utilities Commission Cooling Water Supply Agreement*, an agreement for OCU to provide a significant volume of reclaimed water to OUC for cooling at OUC's power generation facility in east Orange County, offsetting the need to use potable water for this purpose. This agreement was originally signed in 1984 and remains in effect. OCU and OUC continue to negotiate updates to this agreement (which is expected to remain in force for long duration).
- *Eastern Regional Reclaimed Water Distribution System Agreement*, an agreement for interconnected reclaimed water reuse distribution facilities at a large regional scale in east Orange County and Seminole County. Led by the City of Orlando, partners to the agreement include Orange County, Seminole County, the City of Oviedo, UCF, and OUC. Orange County signed this agreement with the City of Orlando in 2008; it has a duration of 50 years, with automatic 10-year renewals unless either party chooses to end

the agreement.

- *STOPR Cost Sharing and Compliance Coordination Memorandum of Agreement*, between the City of St. Cloud, the TWA, Orange County, Polk County, and the RCID for collaboration in implementing water resource monitoring and compliance requirements of their jointly issued water use permits from the SFWMD. The agreement was signed in 2007 and has a duration of 20 years.
- *Taylor Creek Reservoir/St. Johns River Water Supply Project General Implementation Agreement*, between Orange County, OUC, TWA, East Central Florida Services, and the City of Cocoa for setting the overall framework for implementation of the project, including allocation of flows, governance, and the project implementation process.
- *Interlocal Agreement Between the Water Cooperation of Central Florida and Reedy Creek Improvement District Relating to the Preliminary Design and Permitting of the Alternative Water Supply Project Known as the Cypress Lake Wellfield and Related Matters*, between the City of St. Cloud, the TWA, Orange County, Polk County, and the RCID for establishment of commitments and financial responsibility for the project, including preliminary design, concentrate disposal, land acquisition, and final design and permitting.

To ensure water supply source and facility concurrency, continued improvement of water resource management techniques, and the development of cost-effective and environmentally responsible water sources and facilities, Orange County will continue to implement the following policies regarding interlocal coordination and regional cooperation:

- Consult with all applicable water suppliers, including internal coordination among Orange County Departments, to determine if adequate water supplies will be available to serve development in unincorporated Orange County (Future Land Use Policy FLU8.6.1; Potable Water/Wastewater/Reclaimed Water Policy WAT3.3.3).
- Coordinate with and seek to maintain, enhance, or establish interlocal agreements with other municipalities that are provided potable water, wastewater, or reclaimed water service by OCU, and with other utilities that provide service to Orange County, to understand and address existing and future needs and confirm service provision commitments (Intergovernmental Coordination Policies ICE1.2.4, ICE1.3.7 and ICE1.5.4).
- Work closely with the water management districts to support their regional water supply planning and environmental stewardship goals (Potable Water/Wastewater/Reclaimed Water Policies WAT1.2.15, WAT3.2.1, WAT3.2.3, WAT3.3.1, and WAT3.3.2, and multiple policies under Objective WAT2.2 numerous policies throughout the Intergovernmental Coordination Element).
- Coordinate with and continue to seek partnership/interlocal agreement opportunities with state agencies, local governments, and utilities to cooperatively study and develop feasible AWS projects (Potable Water/Wastewater/Reclaimed Water Policies WAT3.2.1 and WAT3.2.3).

2.6.8 Summary of Projected Future Water Needs and Sources

Orange County plans to optimize and integrate the use of feasible water resource options to satisfy its projected water demands during the planning horizon. The County will coordinate with the water supply providers to maximize the efficient use of existing potable water and reclaimed water facilities via management techniques that can enhance the source of supply, sustain water resources and related natural systems, and optimize water supply yield. Available techniques include system interconnections, reclaimed water reuse, aquifer recharge, water conservation, and ASR. Through 2035 capital improvement program, the County's planned sources primarily consist of increased use of reclaimed water for irrigation, additional efficient use of Floridan aquifer groundwater, along with start-up of the Cypress Lake brackish groundwater AWS project. Furthermore, the County will continue the diligent pursuit of the development of additional new surface water AWS supplies.

3 CAPITAL IMPROVEMENT WORK PLAN

3.1 Overview

Capital improvements to public, private, and regional potable water and reclaimed water facilities operated by many of the providers serving unincorporated Orange County will be necessary during the planning period to accommodate future demands and to support and implement the water supply source strategy described above. Capital improvements to OCU-operated facilities, both those solely under the control of OCU and those regional cooperative AWS projects in which OCU is working collaboratively with other agencies, will play the most significant role in overcoming projected deficits within the growth areas of Orange County. In addition, several of the other providers within the County, most significantly OUC and the City of Orlando, will have to expand their independent or cooperative facilities.

OCU maintains a detailed, financially feasible capital improvement program (CIP) for water, wastewater, reclaimed water, and solid waste facilities, which is updated on a continual basis. All key projects from OCU's program are included in Orange County's five-year schedule of capital improvements, adopted as part of the Capital Improvement Element of the County's CPP. Detailed information on funding sources, financial feasibility, and annual budget allocations is provided in the Capital Improvement Element, and a summary list of OCU's relevant projects is included as **Appendix C** to this Work Plan. As required by legislation, Orange County's Capital Improvement Element and five-year schedule of capital improvements will be amended on an annual basis and will maintain consistency with this Work Plan. Further detailed information can also be found in Orange County's most recent CIP Budget Book.

The results of Orange County's most recent revenue sufficiency analysis indicate that the funding of capital improvement projects over the planning period can be accomplished through rate revenue, connection fees, and debt funding, which will require implementation of the system's 3-percent automatic rate provision from time to time to meet debt service coverage requirements. In addition, some of the AWS projects included in this Work Plan will be partially funded through cooperative grants from the water management districts, other state agencies, or other utilities participating in regional efforts.

Listed by provider, the key planned capital improvement projects needed to provide adequate future water supply capacity within unincorporated Orange County are described below. The listed projects focus on development of new and expanded water sources (groundwater, reclaimed water, surface water) and their treatment facilities. Many projects intended to increase the capacity of water distribution and wastewater collection systems are not discussed in this section as they are too numerous to list; however, Orange County does include these capacity projects in its annual CIP update to keep the systems in compliance with OCU hydraulic level of service standards.

3.2 Orange County Utilities

To meet projected demands within the 10-year planning horizon, OCU will:

- Expand and optimize its traditional groundwater supply facilities.

- Continue to implement, and increase as feasible, its conservation initiatives listed above.
- Expand its reclaimed water facilities to reduce demand for potable water.
- Diligently pursue development of new AWS sources, alone and in conjunction with other providers.
- Continue to investigate additional alternatives.
- Promote regional cooperation and joint solutions.

OCU will implement the traditional, reclaimed, and alternative capital improvement projects described below during the planning period of this Work Plan. Attached **Table 7** summarizes the system capacity increases anticipated because of these capital projects. These projects will overcome projected supply deficits for demands within the entire OCU service area, most of which falls within unincorporated Orange County. Unit (“org”) project numbers are listed as appropriate for direct cross-reference with information in the OCU CIP and in the County’s five-year CIS (see **Appendix C** and Orange County’s Capital Improvement Element). In addition, cross-references are provided between these capital projects and those identified in the current SJRWMD and SFWMD RWSPs.

The current five-year CIS includes detailed project funding data for the FY 2021/2022 through FY 2025/2026 period. Beyond the five-year planning horizon, OCU will need to develop additional AWS projects to accommodate future demands. Early implementation phases (e.g., preliminary design and permitting) and capital improvement funding for these projects have already begun so that actual construction and availability of water supply can occur as soon as feasible. **Appendix C** includes Orange County’s most recent Adopted Budget (FY 2020/2021) demonstrating planned project funding. The RWSP Appendices lists 150 additional proposed water supply project options across the CFWI region. A few of these will be mentioned in this section. The County plans to allocate over \$830 million toward relevant water-related utilities capital improvement projects over the next five years. Although not yet committed, funding for the following five years of the Work Plan planning period is included where it has been estimated as “requested future” dollars in the OCU CIP budget.

As an additional point of note in the County’s capital improvement work plan, the sources of water for the AWS projects may be in areas of the County (e.g., eastern Orange County, intake along the St. Johns River) that may be remote from the location of the demands to be met by these new supplies. To facilitate distribution of future supply throughout the OCU service areas, multiple additional projects (i.e., water, wastewater, or reclaimed water main installation, relocation, and extension; pump stations; storage facilities; and other water-related infrastructure improvements) are currently included in the OCU CIP budget for FY 2020/2021 through FY 2025/2026 (see **Appendix C**) to interconnect the OCU South and East Service Areas. As previously mentioned, because the OCU South, Southwest, and West Service Areas are already interconnected, construction of additional South and East Service Area water main extensions will effectively provide complete interconnection of the OCU water distribution facilities, as needed to incorporate the new AWS supplies.

3.2.1 Traditional Water Supply Projects

OCU will implement the following groundwater supply capital improvement projects, which will increase WSF treatment capacity by approximately 19.5 mgd and wellfield capacity by approximately 3.8 mgd AADF during the planning horizon.

- *Oak Meadows Wellfield Expansion (Permitted Well OM-5)*, currently in the construction phase, includes one new Lower Floridan aquifer well at the facility with a capacity of 1.6 mgd AADF. The outfitting of this well is planned for 2021 (West Service Area, CIS 1532-14).
- *Western Regional WSF/Wellfield Phase IIIB Expansion*, currently in design and planned for completion by 2023, may increase treatment capacity by another 7.0 mgd and involves one new Lower Floridan aquifer well (well WR-11, already permitted) with a capacity of 2.2 mgd AADF, to be completed by 2021 (West Service Area, CIS 1532).
- *Southwest Service Area Storage and Repump Facility*, a new storage and repump facility with 5,000 gallons per minute (gpm) pumping capacity and a 3.5 MG ground storage tank, to be completed by 2023, will increase system flexibility and reliability (Southwest Service Area, CIS 1557).
- *Eastern Regional Water Supply Facility Improvements – Sodium Hypochlorite Conversion to Bulk Supply and Feed System*, currently in construction, project includes conversion of existing on-site generation of sodium hypochlorite to bulk supply and feed system which will expand the treatment capacity of the facility to 62.5 mgd firm, to be completed in 2021 (East Service Area, CIS 1554).
- Many other plant process improvements, including treatment, transmission, mechanical, electrical, and well upgrades, at various locations, not associated with capacity increases.

3.2.2 Reclaimed Water Supply Projects

As feasible, OCU will implement the following reclaimed water capital improvement projects, which will increase the reclaimed water supply available to meet non-potable demands during the planning horizon.

- *Northwest WRF Phase IIIB Expansion*, planned to be constructed by 2025, will increase the capacity of the chlorine contact chamber, increasing the overall treatment capacity of the facility by 1.0 mgd AADF (West Service Area, CIS 1435).
- *Northwest WRF High Service Pumping Project*, planned to be constructed by 2026, and expected to add to the existing capacity of the reuse system in the West Service Area (West Service Area, CIS 1435).
- *Southwest WRF Phase I*, planned to be constructed by 2022, for a total treatment capacity of 5.0 mgd AADF. Further phases are planned to provide additional capacity and to receive flow diversion from the South Service Area (Southwest Service Area, CIS 1507).
- *Southwest WRF Phase 2*, planned to be constructed by 2028, for a total treatment capacity of 10 mgd AADF. Further phases are planned to provide additional capacity to receive flow diversion from the South Service Area (Southwest Service Area, CIS 1507).

- *South WRF Phase V Expansion*, planned completion by 2022, will increase treatment capacity by 13 mgd from 43.0 to 56.0 mgd, AADF. (South Service Area, CIS 1555).
- *Eastern WRF Phase VI-A Expansion*, planned to be completed by 2026, will increase peak hour reclaimed water pumping capacity from 6,000 gpm to 17,000 gpm (East Service Area, CIS 1538).
- *Eastern WRF Phase VI-B Expansion*, planned to be completed by 2029, will increase treatment capacity from 24.0 to 31.0 mgd AADF (East Service Area, CIS 1538).
- *Southeast Reclaimed Water System Expansion Project*, will be constructed throughout the planning horizon to distribute reclaimed water to meet reuse irrigation demands in the East Service Area, estimated to be as much as 9 mgd AADF by 2025 (CIS 1483, CUP #3317 Condition 26).
- *South WRF Phase VI-A Expansion*, planned to be completed by 2027, will increase peak hour reclaimed water pumping capacity (South Service Area, CIS 1555).

In addition, Orange County will continue to coordinate with the City of Orlando to evaluate and implement necessary improvements and expansion of the Water Conserv II reclaimed water system, which is jointly owned by the County and the City. Orange County will also work with the City of Orlando to increase the amount of reclaimed water it can put into the Eastern Regional Reclaimed Water Distribution System (ERRWDS) system.

3.2.3 Alternative Water Supply Projects

As feasible and permitted, OCU will implement the following surface water AWS capital improvement projects, which will increase potable water supply capacity.

- *Cypress Lake Wellfield*, a collaborative AWS STOPR project, will provide OCU with a 9.0 mgd AADF finished water potable supply capacity increase. Construction of this project is currently projected to be completed by approximately 2027 (CIS 1550-08, CFWI RWSP Projects 3, 4, 5).
- *Taylor Creek Reservoir/St. Johns River Water Supply Project*, an estimated 50 mgd AADF surface water potable supply project, peak production of 54 mgd finished water. OCU is participating collaboratively in this regional water supply development project with five other central Florida potable water suppliers: OUC, East Central Florida Services, and the Toho Water Authority (who all provide some water in unincorporated Orange County); and the City of Cocoa and City of Titusville. The exact supply volume distribution among suppliers is yet to be finalized, but it is anticipated that OCU's share would be at least 10 mgd AADF (CIS 1550; CUP #3317 Condition 23; WUP # 48-00134-W Condition 25; CFWI RWSP Project 126).

3.3 Orlando Utilities Commission

As **Table 5** and **Table 6** indicate, OUC has sufficient supply to meet demands through 2035. To plan for demands beyond 2035, throughout its entire potable water service area, OUC will:

- Continue to utilize its traditional groundwater supply facilities.
- Continue to implement conservation initiatives in the CUP conservation plan.
- Continue to partner with the City of Orlando and OCU to utilize reclaimed water to meet a portion of the non-potable demands in OUC's service area.
- Continue to work on AWS projects, including the TCR/SJR project.

OUC will continue to partner in AWS (including surface water development and reclaimed water system expansion) capital improvement projects to increase potable and non-potable water source and facility capacity during the planning horizon.

- *Lower Lower Floridan Aquifer (LLFA) Brackish Groundwater Alternative Water Supply Project.* OUC completed a feasibility study in 2019 that determined that OUC's Southeast repump facility site would be a suitable location to develop a Lower Lower Floridan Aquifer brackish groundwater AWS. Thus, OUC is drilling an exploratory underground injection control (UIC) well which will be used to determine the viability of a brackish groundwater source and a suitable injection interval to manage membrane treatment concentrate. OUC received a UIC permit in August 2020 and the well is scheduled to be completed in April 2022. If the exploratory well results are positive, OUC will hire a design consultant for the brackish groundwater project, including a membrane treatment plant, water supply wells, and membrane concentrate management UIC wells. OUC has \$22 million budgeted in its 2021 five-year capital plan for a portion of this project.
- *Eastern Regional Reclaimed Water Distribution System.* The City of Orlando's ERRWDS was constructed in collaboration with OUC from 2006 through 2011 to supply approximately 33 mgd from the City's Iron Bridge WRF to the OUC service area, Orange County, Seminole County, UCF, and Oviedo. The system allows Orange County to use the reclaimed water pipeline and supply more customers in the OUC service area with reclaimed water. The City will also provide the County with additional reclaimed water if they cannot meet all their customer demands. The last portion of the project, the Lake Nona storage and repump station, was on hold in 2013 since it was not needed to maintain system pressures. The City now estimates the storage and repump station will be needed in the next few years due to increased demands in the Lake Nona area. OUC has \$1.7 million budgeted in the 2021 five-year capital plan for the storage and repump station
- *Project RENEW.* Project RENEW is a regional reuse project that is currently on hold. The project will be re-evaluated to determine the best location(s) for reclaimed water in the region that is environmentally, technologically, and economically feasible. Project RENEW may also be used to meet an adopted minimum flows and levels prevention and recovery strategy.

Other OUC potable water system capital improvement projects include:

- *Granular Activated Carbon Project*, \$61 million in five year capital plan (2021- 2025).

- *Ozone Generator Replacement Program*, \$17.3 million in five year capital plan (2021-2025).
- *Chlorine Conversions*, \$14.3 million in five year capital plan (2021- 2025).
- *Other Water Production Costs*, \$16.3 million in five year capital plan (2021- 2025).
- *Water Distribution Projects*, \$104 million in five year capital plan (2021-2025).

3.4 Other Providers in Unincorporated Orange County

Capital improvement work plan data for other utility providers serving unincorporated Orange County were not readily available. Such data however do not represent a critical component of Orange County’s CPP as these providers serve only a very small percentage of the total water demand in the unincorporated areas. Orange County municipalities, within which many of these providers deliver most of their water, incorporate relevant data on water supply capital improvement projects in their water supply facility work plan amendments.

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FIGURES

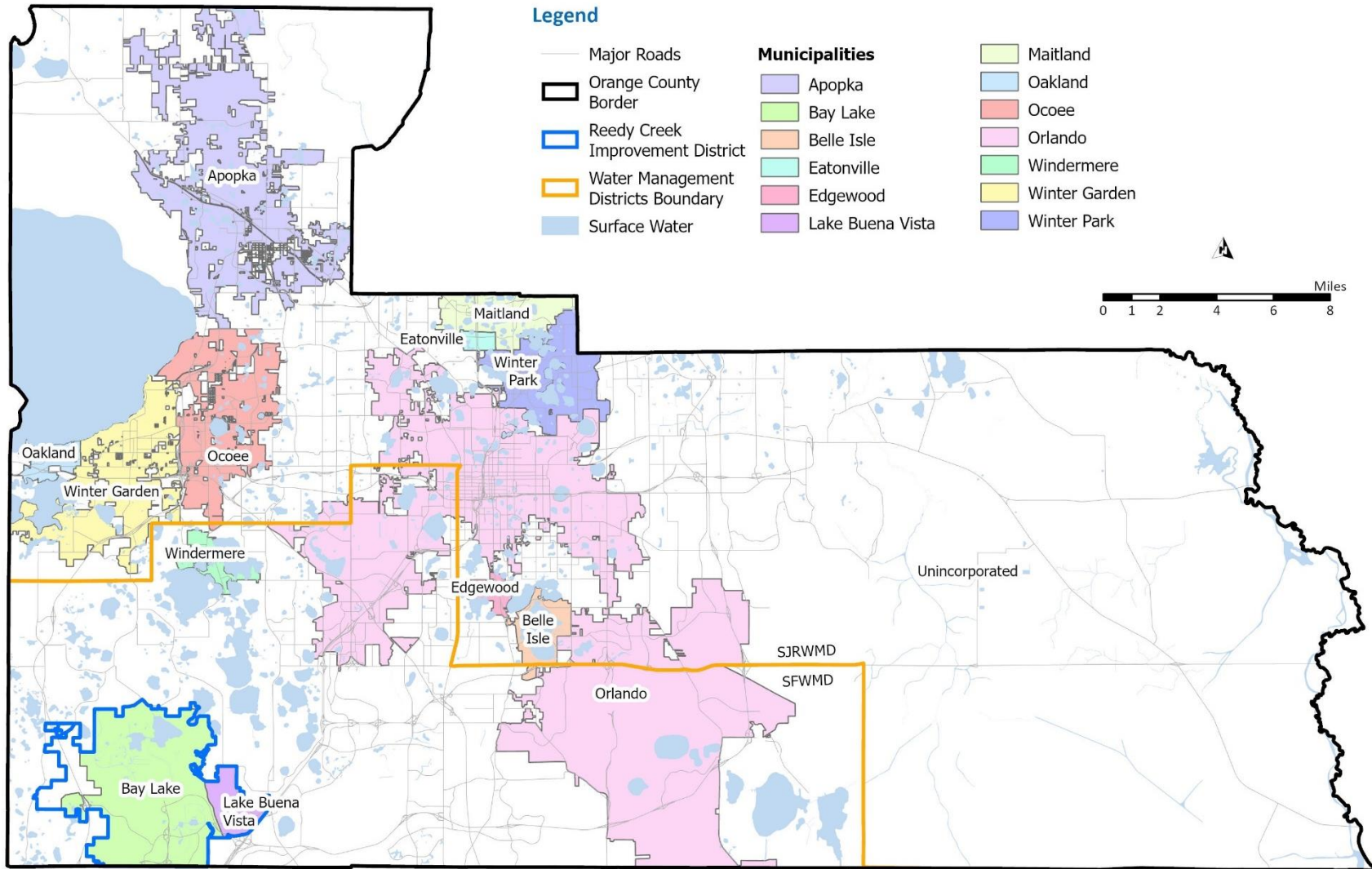


Figure 1 Orange County Municipalities and Water Management District Boundaries



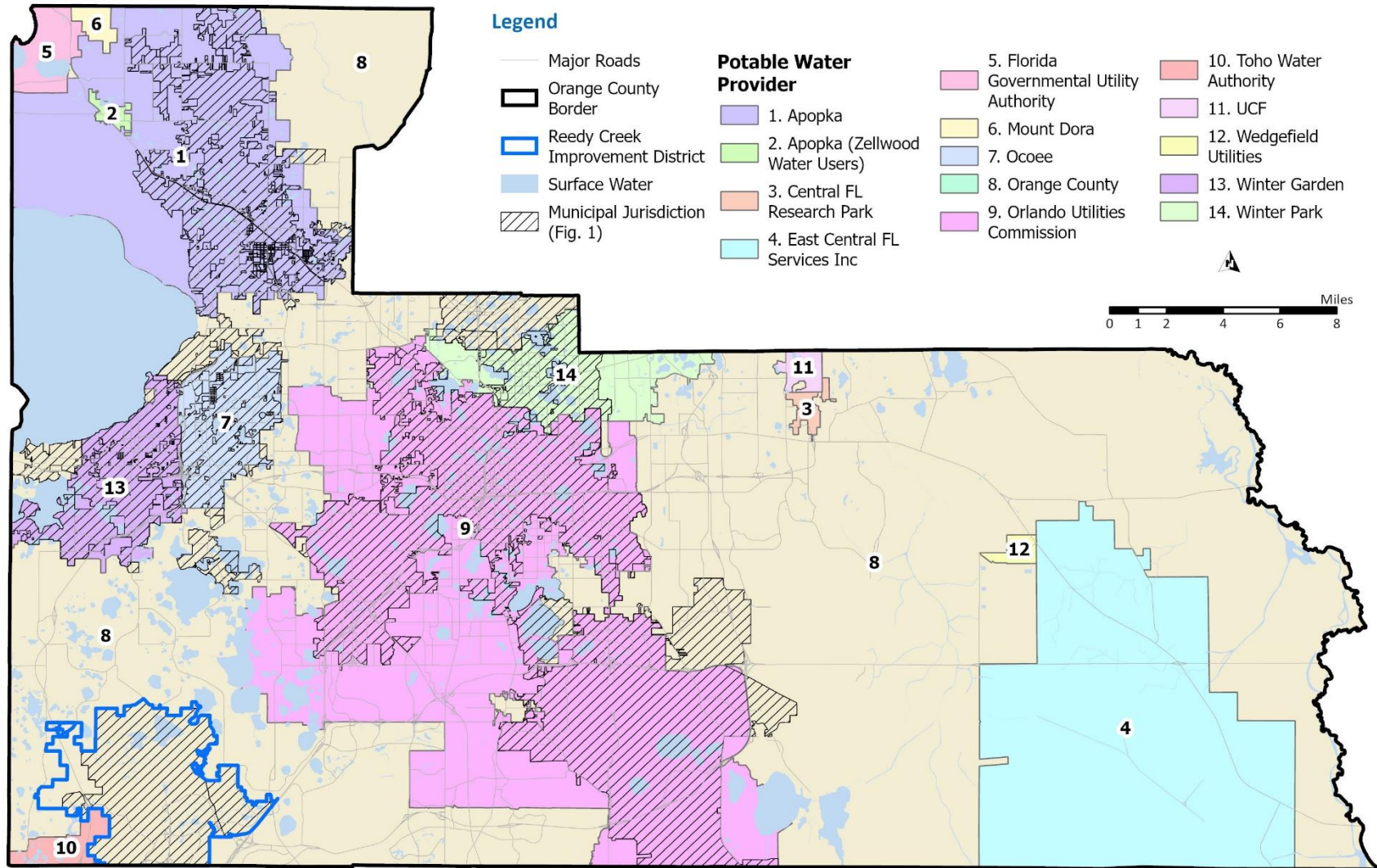


Figure 2 Potable Water Providers and Service Areas in Unincorporated Orange County



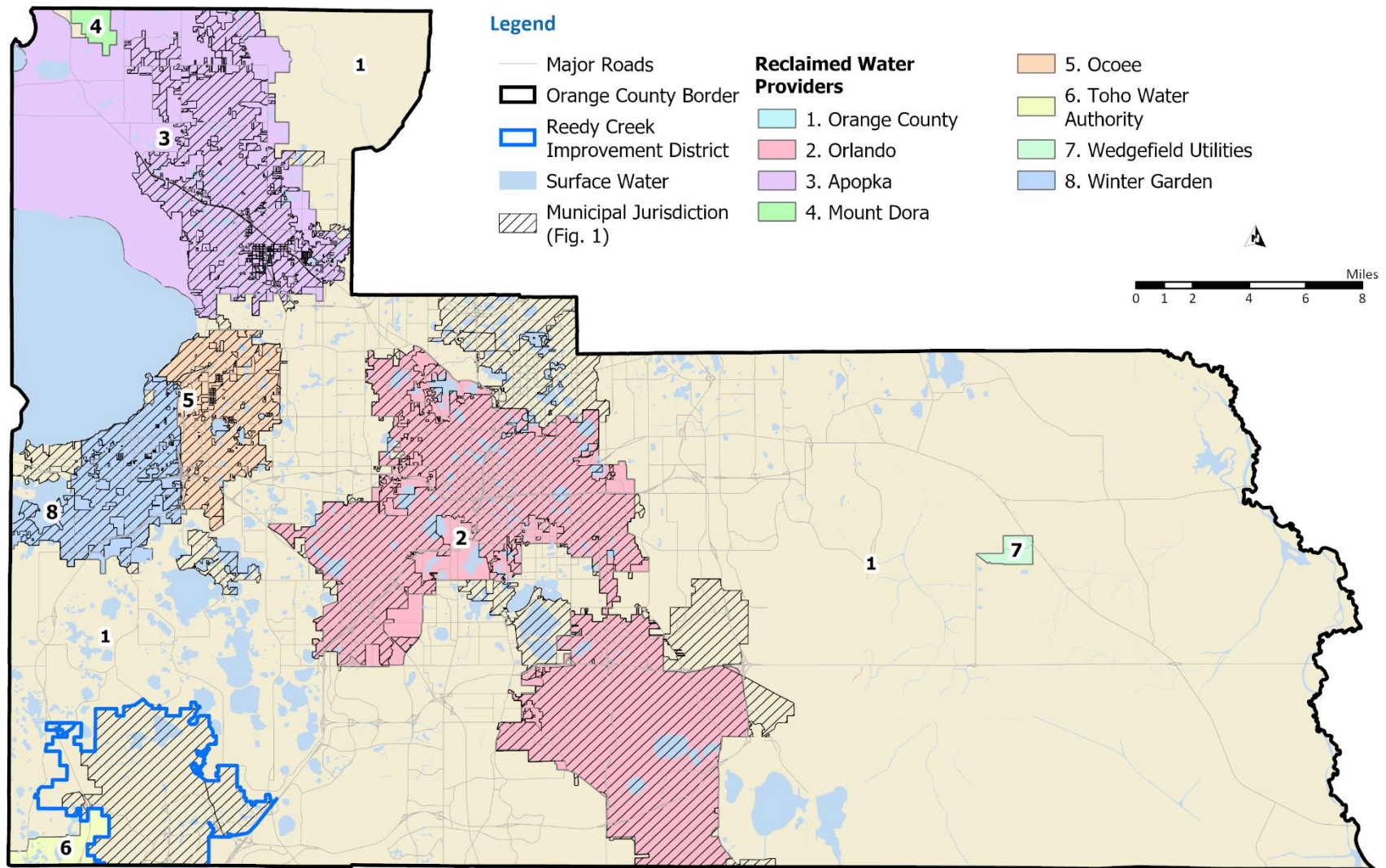


Figure 3 Reclaimed Water Providers and Service Areas in Unincorporated Orange County



TABLES

Table 1. Existing Water Supply Facilities for Two Main Potable Water Providers in Unincorporated Orange County

Supplier / Facility	Raw Water Source	Wellfield (Raw/Source Water)		Treatment (Finished Water)	
		Current Maximum Capacity (mgd)	Current Average Day Capacity (mgd AADF) ⁽¹⁾	Current Maximum Capacity (mgd)	Current Average Day Capacity (mgd AADF) ⁽¹⁾
ORANGE COUNTY UTILITIES (OCU)					
County Road 535	Upper Floridan	6.6	3.3	4.0	2.0
Hidden Springs WSF	Lower Floridan	8.6	4.3	8.6	4.3
Lake John Shores WSF	Upper Floridan	0.09	0.04	0.014	0.007
Malcolm Road WSF	Lower Floridan	21.6	10.8	8.6	4.3
Oak Meadows WSF	Lower Floridan	5.8	2.9	5.6	2.8
Western Regional WSF	Lower Floridan	36.3	18.2	25.8	12.9
Total Existing Capacity - West/Southwest Service Area		79.1	39.5	52.6	26.3
Cypress Walk WSF	Upper Floridan	3.5	2.0	3.5	2.0
Hunters Creek WSF	Upper Floridan	10.1	5.9	6.4	3.7
Orangewood WSF	Upper Floridan	10.1	5.9	6.5	3.8
Southern Regional WSF	Lower Floridan	30.2	17.8	30.0	17.6
Southern Remote ⁽²⁾	Upper Floridan	5.2	3.0	0.0	0.0
Vistana Water WSF	Upper Floridan	8.6	5.1	4.8	2.8
Total Existing Capacity - South Service Area		67.7	39.8	51.1	30.1
Eastern Regional WSF	Upper Floridan	60.5	35.6	50.0	29.4
Econ WSF ⁽³⁾	Upper Floridan	10.1	5.9	0.0	0.0
Total Existing Capacity - East Service Area		70.6	41.5	50.0	29.4
Total Existing Capacity - OCU		217.3	120.8	153.8	85.8
ORLANDO UTILITIES COMMISSION (OUC)					
Pine Hills WSF	Lower Floridan	25.0	17.9	25.0	17.9
Kirkman WSF	Lower Floridan	15.0	10.7	15.0	10.7
Southwest WSF	Lower Floridan	45.5	32.5	40.0	28.6
Lake Highland WSF	Lower Floridan	28.1	20.1	30.4	21.7
Sky Lake WSF	Lower Floridan	22.5	16.1	22.5	16.1
Navy WSF	Lower Floridan	10.0	7.1	10.0	7.1
Conway WSF	Lower Floridan	31.0	22.1	26.8	19.1
Total Existing Capacity - OUC		177.1	126.5	169.7	121.2
OCU AND OUC COMBINED TOTAL CAPACITY		394.4	247.3	323.5	207.0

(1) Assumed an AADF:MDF ratio of 1:2 and 1:1.7 for OCU's West/Southwest and South/East service areas, respectively, and 1:1.4 for OUC.

(2) Wells at the formerly active Meadow Woods WSF are now known as the Southern Remote Wellfield and are now used for supply to SRWSF.

(3) Econ WSF is no longer an active plant. Water from the Econ wellfield is pumped to ERWSF.

Table 2. Existing Permit Allocation Summary for Potable Water Providers in Unincorporated Orange County

Supplier	Water Management District	Permit Number	Permit Duration	Allocation (mgd AADF) ⁽¹⁾			
				2020	2025	2030	2035
Orange County Utilities	SJRWMD	3317	2006-2036	55.7	55.7	55.7	55.7
Orange County Utilities	SFWMD	48-00134-W	2007-2027	32.4	32.4	32.4	32.4
Orange County Utilities	SFWMD	48-00059-W	2002-2022	3.0	3.0	3.0	3.0
Orange County Utilities	SFWMD ⁽²⁾	49-02051-W	2011-2041	11.25	11.25	11.25	11.25
Orlando Utilities Commission	SJRWMD ⁽³⁾	3159	2004-2023	109.2	109.2	109.2	109.2
City of Apopka	SJRWMD	3217	2011-2031	16.0	16.0	16.0	16.0
East Central Florida Services	SJRWMD	3426	2014-2032	22.8	22.5	22.5	22.5
Florida Gov Utility Authority	SJRWMD	51073	2014-2034	0.13	0.13	0.13	0.13
City of Mount Dora	SJRWMD	50147	2011-2031	5.4	5.8	5.9	5.9
City of Ocoee	SJRWMD	3216	2010-2026	4.88	4.88	4.88	4.88
Orange County Res & Dev Auth.	SJRWMD	3300	2007-2027	1.315	1.315	1.315	1.315
Tohopekaliga Water Authority	SFWMD	49-00103-W	2007-2027	43.3	43.4	43.4	43.4
University of Central Florida	SJRWMD	3202	2014-2034	0.82	0.82	0.82	0.82
Wedgfield Utilities	SJRWMD	3302	2013-2033	0.46	0.48	0.50	0.51
City of Winter Garden	SJRWMD	3368	2005-2025	6.33	6.33	6.33	6.33
City of Winter Park	SJRWMD	7624	2005-2025	12.4	12.7	12.7	12.7
Zellwood Water Users	SJRWMD	3301	2004-2023	0.124	0.124	0.124	0.124
Total All Current Permits				325.5	326.1	326.2	326.2

(1) The maximum allocation included in the current permit is assumed to be renewed for permits expiring prior to 2025, 2030, or 2035.

(2) This permit has been issued as a joint permit between OCU, RCID, and WCCF (STOPR entities). Orange County has a projected allocation of 11.25 mgd of 37.5 mgd permitted, for a 9 mgd finished water demand.

(3) SFWMD delegated authority to SJRWMD for OUC's permit. OUC has a CUP renewal application pending.

Table 3. Existing Water Reclamation Facilities for Two Main Wastewater/Reclaimed Water Providers in Unincorporated Orange County

Supplier / Facility	Current Permitted Treatment Capacity (mgd AADF)	Current Permitted Reuse System Capacity (mgd AADF)	2020 Average Daily Reclaimed Water Flow (mgd AADF) ⁽¹⁾	2035 Projected Reclaimed Water Flow (mgd AADF)
ORANGE COUNTY UTILITIES (OCU)				
South WRF ⁽²⁾	56.0	68.1	26.0	41.3
Eastern WRF	24.0	31.3	19.4	24.2
Northwest WRF	11.25	16.0	6.1	9.0
Southwest WRF ⁽³⁾	NA	NA	0.0	4.2
Total – OCU	91.3	115.4	51.5	78.7
CITY OF ORLANDO				
Iron Bridge and Water Conserv I WRFs	47.5	66.5	29.0	30.7
Water Conserv II WRF	21.0	61.5	14.0	14.2
Total - Orlando ⁽⁴⁾	68.5	128.0	43.0	44.9
OCU AND ORLANDO COMBINED TOTAL CAPACITY	159.8	243.4	100.5	123.6

(1) Actual flow data.

(2) Permitted treatment capacity will increase to 56.0 mgd upon completion of the Phase V improvements which is scheduled for 2022.

(3) Future facility.

(4) Includes reclaimed water flows for OUC customers and customers outside the OUC service area in Seminole County and Orange County.

Table 4. Potable Water Demand Projections in Unincorporated Orange County Associated with the Two Main Providers, by Water Management District

Supplier	Potable Water Demand Projections ⁽¹⁾			
	2020	2025	2030	2035
ORANGE COUNTY UTILITIES (OCU)				
OCU - (CUP 3317) SJRWMD	50.0	55.7	59.5	64.0
OCU - SFWMD Portion	19.5	22.9	26.4	30.5
Total Demand – OCU	69.5	78.6	85.9	94.5
ORLANDO UTILITIES COMMISSION (OUC)				
OUC - (CUP 3159) SJRWMD ⁽²⁾	20.4	21.4	22.0	22.2
OUC - SFWMD Portion ⁽²⁾	17.4	19.0	20.5	22.7
Total Demand – OUC	37.8	40.3	42.6	44.9
OCU and OUC Combined Totals	107.3	118.9	128.4	139.4

(1) Adapted from the CFWI RWSP 2020, Appendix, Table A-5b.

(2) These values were estimated using the relative fraction of the utility's service area falling within unincorporated Orange County.

Table 5. Current Potable Supply Capacity and Projected Demand Analysis for Two Main Potable Water Providers Serving Unincorporated Orange County

Supplier / Supply or Demand Component	Demand, Permit Allocation, or Capacity (mgd AADF)			
	2020 Baseline	2025	2030	2035
ORANGE COUNTY UTILITIES (OCU)				
Potable Water Demand - in Unincorporated Orange County ⁽¹⁾	66.1	74.7	81.7	89.8
Potable Water Demand - Total Service Area ⁽²⁾	69.5	78.6	85.9	94.5
Current Permit Allocation ⁽³⁾	102.4	102.4	102.4	102.4
Current Wellfield (Source) Capacity	120.8	120.8	120.8	120.8
Current Treatment Capacity	85.8	85.8	85.8	85.8
Additional Source Capacity (CIP Improvements) ⁽⁴⁾	0.0	3.8	3.8	3.8
Additional Treatment Capacity (CIP Improvements) ⁽⁴⁾	0.0	10.9	10.9	10.9
Permitted Surplus (Deficit)	32.8	23.7	16.5	7.9
Wellfield/Source Capacity Surplus (Deficit)	51.3	42.2	35.0	26.4
Treatment Capacity Surplus (Deficit)	16.3	7.2	(0.1)	(8.7)
ORLANDO UTILITIES COMMISSION (OUC)				
Potable Water Demand - Unincorporated Orange County ⁽¹⁾	37.8	40.3	42.6	44.9
Potable Water Demand - Total Service Area ⁽²⁾	82.8	92.7	97.8	103.2
Current Permit Allocation ⁽⁵⁾	109.2	109.2	109.2	109.2
Current Wellfield (Source) Capacity	126.5	126.5	126.5	126.5
Current Treatment Capacity	121.2	121.2	121.2	121.2
Additional Source Capacity (CIP Improvements) ⁽⁶⁾	0.0	0.0	0.0	5.0
Additional Treatment Capacity (CIP Improvements) ⁽⁶⁾	0.0	0.0	0.0	5.0
Permitted Surplus (Deficit)	26.4	16.5	11.4	6.0
Wellfield/Source Capacity Surplus (Deficit)	43.7	33.8	28.7	23.3
Treatment Capacity Surplus (Deficit)	38.4	28.5	23.4	18.0
OCU AND OUC COMBINED TOTAL POTABLE WATER SUPPLY CAPACITY ANALYSIS				
Potable Water Demand - in Unincorporated Orange County	103.9	115.1	124.2	134.7
Potable Water Demand - Total Service Area	152.3	171.3	183.7	197.7
Current Permit Allocation	211.6	211.6	211.6	211.6
Current Wellfield (Source) Capacity	247.3	247.3	247.3	247.3
Current Treatment Capacity	207.0	207.0	207.0	207.0
Additional Source Capacity (CIP Improvements) ⁽⁶⁾	0.0	3.8	3.8	8.8
Additional Treatment Capacity (CIP Improvements) ⁽⁶⁾	0.0	10.9	10.9	15.9
Permitted Surplus (Deficit)	59.2	40.2	27.9	13.9
Wellfield/Source Capacity Surplus (Deficit)	95.0	76.0	63.7	49.7
Treatment Capacity Surplus (Deficit)	54.7	35.7	23.3	9.3

(1) This value was estimated using the relative fraction of the utility's service area falling within unincorporated Orange County.

(2) Projections taken from Table A-5b of 2020 Final CFWI RWSP, Appendices. Based on BEBR medium scenario for 5-in-10 year rainfall. Projections based on a 1-in 10 year rainfall, which increase demands by 6%, are also provided in the RWSP.

(3) CUP & WUP expire in 2036 & 2027, respectively. Allocations beyond this are assumed to remain the same as end of permit allocations.

(4) Refer to Table 7 for breakdown of OCU traditional and AWS source and facility capacity analysis based on work plan improvements.

(5) OUC CUP expires in 2023. Allocation for beyond 2023 is assumed to remain the same as end of permit allocation.

(6) Includes OUC's planned 5.0 mgd AADF share of Taylor Creek Reservoir/St. Johns River AWS Project.

Table 6. Current Reclaimed Supply Capacity and Projected Demand Analysis for Two Main Reclaimed Water Providers Serving Unincorporated Orange County

Supplier / Supply or Demand Component	Demand, Permit Allocation, or Capacity (mgd AADF)			
	2020 Baseline	2025	2030	2035
ORANGE COUNTY UTILITIES (OCU)				
Public Access Reuse Demand ⁽¹⁾	33.0	42.7	48.8	57.7
Minimum Wetland Hydration and Required RIB Flow ⁽¹⁾	1.4	1.4	1.4	1.4
Reclaimed Water Demand - Total Service Area ⁽¹⁾	34.4	44.1	50.2	59.1
Current Permitted Treatment Capacity ⁽²⁾	78.3	78.3	78.3	78.3
Current Permitted Reuse System Capacity ⁽²⁾	115.4	115.4	115.4	115.4
Reclaimed Water Supply Available ⁽¹⁾	59.1	68.5	75.6	82.8
Additional Treatment Capacity (CIP Improvements) ⁽³⁾	0.0	19.0	31.0	36.0
Additional Reuse System Capacity (CIP Improvements) ⁽³⁾	0.0	9.0	11.5	11.5
Treatment Capacity Surplus (Deficit)	43.8	53.2	59.0	55.2
Reuse System Capacity Surplus (Deficit)	81.0	80.3	76.7	67.8
Available Reclaimed Supply Surplus (Deficit)	24.7	24.5	25.4	23.7
CITY OF ORLANDO				
Public Access Reuse Demand ⁽⁴⁾	19.5	21.0	22.4	24.4
Minimum Wetland and RIB Flow Targets ⁽⁴⁾	16.0	16.0	16.0	16.0
Reclaimed Water Demand - Total Service Area ⁽⁴⁾	35.5	37.0	38.4	40.4
Current Permitted Treatment Capacity ⁽²⁾	68.5	68.5	68.5	68.5
Current Permitted Reuse System Capacity ⁽²⁾	128.0	128.0	128.0	128.0
Reclaimed Water Supply Available ⁽²⁾	40.5	43.4	46.2	49.1
Additional Treatment Capacity (CIP Improvements)	0.0	0.0	0.0	0.0
Additional Reuse System Capacity (CIP Improvements)	0.0	0.0	0.0	0.0
Treatment Capacity Surplus (Deficit)	33.0	31.5	30.1	28.1
Reuse System Capacity Surplus (Deficit)	92.5	91.0	89.6	87.6
Available Reclaimed Supply Surplus (Deficit)	5.0	6.4	7.8	8.7
OCU AND CITY OF ORLANDO COMBINED TOTAL RECLAIMED WATER CAPACITY ANALYSIS				
Reclaimed Water Demand - Total Service Area	69.9	81.1	88.6	99.5
Current Permitted Treatment Capacity	146.8	146.8	146.8	146.8
Current Permitted Reuse System Capacity	243.4	243.4	243.4	243.4
Reclaimed Water Supply Available	99.6	111.9	121.8	131.9
Additional Treatment Capacity (CIP Improvements)	0.0	19.0	31.0	36.0
Additional Reuse System Capacity (CIP Improvements)	0.0	9.0	11.5	11.5
Treatment Capacity Surplus (Deficit)	76.8	84.7	89.1	83.3
Reuse System Capacity Surplus (Deficit)	173.5	171.3	166.3	155.4
Available Reclaimed Supply Surplus (Deficit)	29.7	30.9	33.2	32.4

(1) OCU projection estimates.

(2) Refer to Table 3.

(3) Refer to Table 7.

(4) City of Orlando projection estimates. Does not include demands for Project RENEW.

Table 7. Orange County Utilities Capacity-Related Capital Improvement Work Plan Summary

OCU Capacity / Work Plan Project	Planned Available Supply, by Year (mgd AADF)															
	Baseline 2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
TRADITIONAL WATER SUPPLY PROJECT CAPACITY																
Total Groundwater Permit Allocation ⁽¹⁾	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4
Total Wellfield Capacity	120.8	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6
Existing Wellfields ⁽²⁾	120.8	120.8	120.8	120.8	120.8	120.8	120.8	120.8	120.8	120.8	120.8	120.8	120.8	120.8	120.8	120.8
Western Regional, Well WR-11 (WSA) (CIS 1532)		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Oak Meadows, Well OM-5 (WSA) (CIS 1532)		1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Total WSF Treatment Capacity	85.8	93.2	93.2	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7	96.7
Existing Water Supply Facilities ⁽²⁾	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8
Eastern Regional WSF, Conversion (ESA) (CIS 1554)		7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Western Regional WSF, Phase IIIB (WSA) (CIS 1532)				3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
RECLAIMED WATER SUPPLY PROJECT CAPACITY																
Total WRF Treatment Capacity	78.3	78.3	96.3	96.3	96.3	97.3	97.3	97.3	102.3	109.3	109.3	109.3	109.3	114.3	114.3	114.3
Existing Water Reclamation Facilities ⁽³⁾	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3
South WRF, Phase V (SSA) (CIS 1555)			13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
Southwest WRF, Phases I-III (SWSA) (CIS 1507)			5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0	15.0	15.0	15.0
Northwest WRF, Phase IIIB (WSA) (CIS 1435)						1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Eastern WRF, Phase VI-B (ESA) (CIS 1538)										7.0	7.0	7.0	7.0	7.0	7.0	7.0
Total Reuse System Capacity	115.4	115.4	115.4	115.4	115.4	124.4	126.9	126.9	126.9	126.9	126.9	126.9	126.9	126.9	126.9	126.9
Existing Reuse Systems ⁽³⁾	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4
Southeast Reclaimed Water Expansion (ESA) (CIS 1483) ⁽⁴⁾							9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Northwest WRF High Service Pumping (WSA) (CIS 1435) ⁽⁴⁾							2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
ALTERNATIVE WATER SUPPLY PROJECT CAPACITY																
Total AWS Source/Treatment Capacity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	19.0	19.0
Cypress Lake Wellfield (STOPR) (CIS 1550-08) ⁽⁵⁾								9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
TCR/SJR Surface Water Supply (ESA) (CIS 1550)															10.0	10.0

(1) Refer to Table 2.

(2) Refer to Table 1.

(3) Refer to Table 3.

(4) Until constructed and permitted, capacity values are best estimates.

(5) Orange County's estimated allocation once complete and operational.

APPENDICES

APPENDIX A

Potable Water Supply Facilities Serving Unincorporated Orange County

In support of this Work Plan, an inventory of potable water facilities was completed for those public and private utilities providing potable water service within unincorporated Orange County. This appendix presents additional information on the existing facilities and related consumptive and water use permits for these potable water service providers, which include the following significant utilities:

- Orange County Utilities
- Orlando Utilities Commission
- Apopka (City of)
- Apopka (Zellwood Water Users)
- East Central FL Services Inc
- Florida Governmental Utility Authority
- Mount Dora (City of)
- Ocoee (City of)
- Orange County Research and Development Authority (Central FL Research Park)
- Tohopekaliga Water Authority
- University of Central Florida
- Wedgefield Utilities
- Winter Garden (City of)
- Winter Park (City of)

Summaries of the existing potable water supply permit allocations associated with the above-listed utilities are presented in the data and analysis section of the Orange County Work Plan (Table 2). In addition, detailed existing facility capacities are summarized in Work Plan Table 1 for Orange County Utilities (OCU) and the Orlando Utilities Commission (OUC), which are the two largest providers and represent nearly all the public supply in unincorporated Orange County.

Five other significant utilities not on the above list—the City of Casselberry, the City of Maitland, the Town of Oakland, Utilities Inc., and the Town of Eatonville—provide potable water service within Orange County; however, their water service areas remain within their jurisdictional boundaries and do not contribute to the supply within unincorporated Orange County. For this reason, it is not necessary to address these providers as part of Orange County’s Work Plan.

There are other utilities that provide limited potable water service within unincorporated Orange County. These providers, however, have no potential for growth within their service areas or provide small quantities relative to the other suppliers and are therefore not addressed explicitly in this Work Plan. Reedy Creek Energy Services, the utility provider for the Reedy Creek Improvement District (RCID), is a significant water supplier but provides less than 0.2 million gallons per day (mgd) of potable water to two small developments in unincorporated Orange County.

The potable water suppliers operate numerous water supply facilities, which are described in more detail below. All these potable water providers currently use the Floridan aquifer as their primary source water supply. Detailed facility information was not available for providers other than OCU and the City of Orlando. Therefore, certain assumptions of existing facilities described in the following were made based on the previous Work Plan and other publicly available data.

This appendix was prepared in October 2021 and reflects status as of this date in time unless noted otherwise.

ORANGE COUNTY UTILITIES (OCU)

Facilities

The OCU Department is the largest potable water provider in unincorporated Orange County. The Water Division provides the drinking water supply for much of unincorporated Orange County as well as for much of the Town of Windermere and portions of several other municipalities in Orange County through the operation and maintenance of water treatment systems, transmission systems, and distribution systems.

OCU currently owns and operates 12 water treatment facilities, five of which are in the St. Johns River Water Management District (SJRWMD) and seven in the South Florida Water Management District (SFWMD). Potable water is currently supplied to these treatment facilities by 57 active wells completed in both the upper and lower production zones of the Floridan aquifer. OCU's responsibility is divided across four potable water service areas (**Figure A.1**). The total average potable water produced by OCU in 2020 was approximately 61.9 mgd across over 156,000 accounts, serving the needs of nearly 570,000 residents plus a significant number of commercial businesses such as hotels.

OCU currently obtains its potable water supply from groundwater of the Floridan aquifer through wellfields associated with the following existing water supply facilities (WSFs):

SJRWMD Facilities

Eastern Regional WSF
Western Regional WSF
Oak Meadows WSF
Lake John Shores WSF
Malcolm Road WSF

SFWMD Facilities

Hidden Springs WSF
Cypress Walk WSF
Hunters Creek WSF
Orangewood WSF
Vistana WSF
Southern Regional WSF
CR 535 WSF

OCU's active production wells tap the Lower production zone of the Floridan aquifer at the Western Regional, Oak Meadows, Malcolm Road, and Hidden Springs WSF wellfields, while the remainder of the County's supply wells tap the Upper production zone of the Floridan aquifer. Wells and well pumps are used to withdraw water from the Floridan aquifer, as permitted by the SJRWMD and SFWMD.

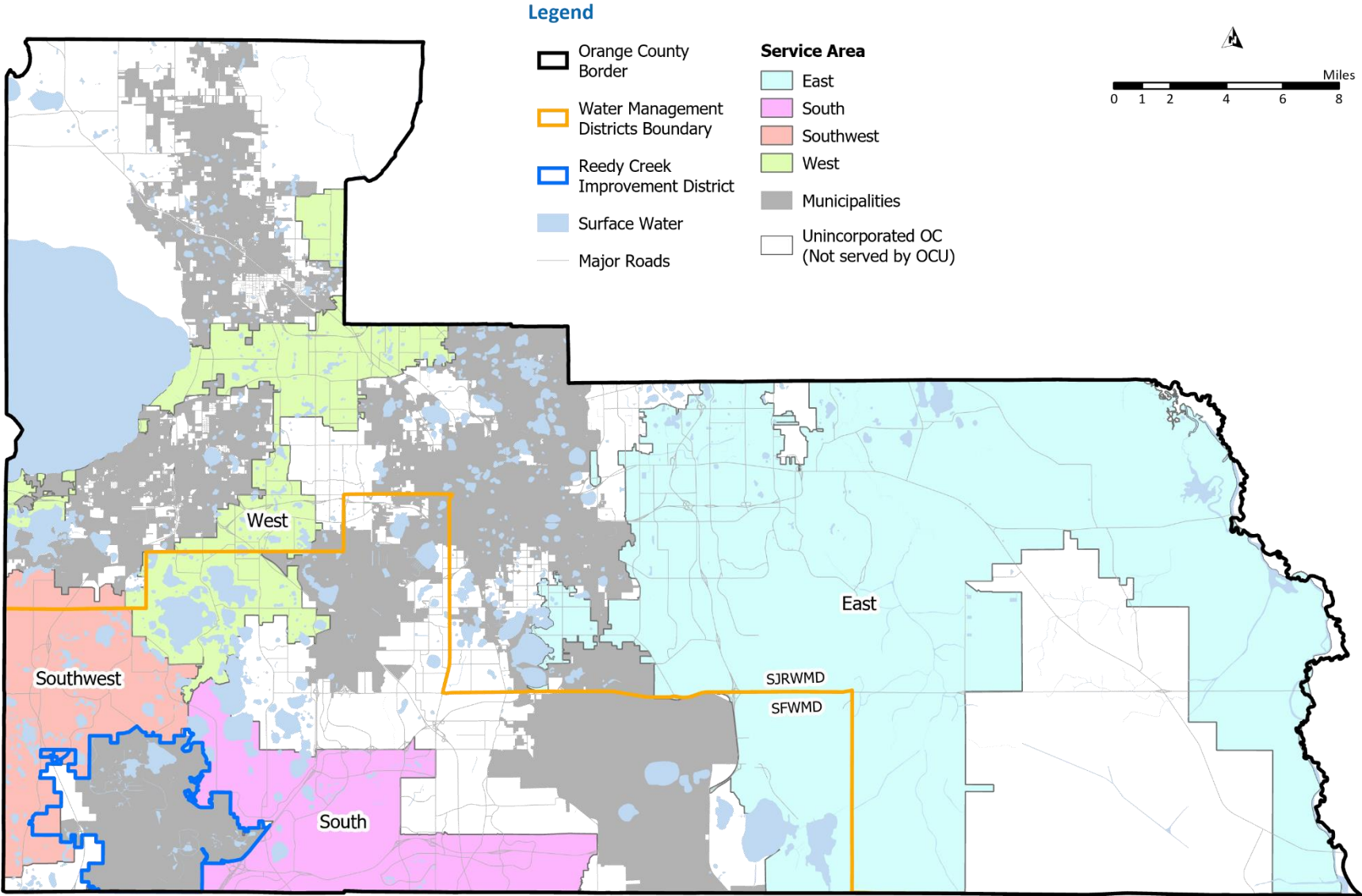


Figure A.1 Orange County Utilities Potable Water Service Area Map



Permits

OCU currently holds one primary SJRWMD consumptive use permit (CUP) and three SFWMD water use permits (WUPs) for potable water supply:

- *SJRWMD CUP #3317*: Covers the East and West Service Areas and a portion of the Southwest Service Area (Malcolm Road WSF); 55.7 mgd annual average allocation; expires December 12, 2036.
- *SFWMD WUP #48-00134-W*: South Service Area and a portion of Southwest Service Area (CR535 [Horizon West] WSF); 32.4 mgd annual average allocation; 55.8 mgd maximum month allocation; expires June 14, 2027.
- *SFWMD WUP #48-00059-W*: Hidden Springs WSF Service Area (a sub-area of the West Service Area); 3.0 mgd annual average allocation; 7.1 mgd maximum day allocation; expires November 14, 2022.
- *SFWMD WUP #49-02051-W (STOPR Joint Permit)*: Cypress Lake WSF; 11.25 mgd annual average and maximum month allocation; expires October 3, 2041.

Table A.1 presents annual average allocation amounts by wellfield for the existing OCU permits.

Table A.1. Orange County Utilities Water Supply Permit Allocation Summary

WSF	Service Area	Groundwater Allocation (mgd AADF through permit expiration)
<i>SJRWMD CUP # 3317(2006-2036)</i>		
Eastern Regional, Econ, and Bonneville ⁽¹⁾	East	35.2
Western Regional, Oak Meadows, Malcolm Rd	West / Southwest	22.5
Lake John Shores	West	0.01
Subtotal CUP # 3317 (Maximum combined allocation)⁽²⁾		55.7
<i>SFWMD WUP # 48-00134-W (2007-2027)</i>		
Cypress Walk	South	1.80
Hunters Creek	South	5.04
Meadow Woods	South	2.28
Orangewood	South	2.88
Vistana	South	3.60
Southern Regional	South	13.70
CR535 (Horizon West)	Southwest	3.10
Subtotal WUP # 48-00134-W		32.4
<i>SFWMD WUP # 49-02051-W (2011-2041)</i>		
Cypress Lake ⁽³⁾	STOPR	11.25
Subtotal WUP # 49-02051-W		11.25

WSF	Service Area	Groundwater Allocation (mgd AADF through permit expiration)
<i>SFWMD WUP # 48-00059-W (2002-2022)</i>		
Hidden Springs	West	3.0
Subtotal WUP # 48-00059-W		3.0
Total All Permits		102.35

- (1) Econ has been converted to a well pumping facility. Bonneville wellfield has been abandoned.
 (2) CUP No. 3317 total allocation is less than the sum of the individual maximum annual allocations per service area.
 (3) Future facility. This is a STOPR project, in which OCU is allowed to withdraw up to 11.25 mgd AADF (upon future project construction).

In addition, the OCU permits include, as specific conditions, several requirements regarding the use of reclaimed water and development of alternative water supplies, as described below.

Under SJRWMD CUP #3317, OCU is required to:

- Provide a minimum of 41.8 mgd annual average daily flow (AADF) by 2026 of reclaimed water across the OCU service areas to meet irrigation water demands, in accordance with the following reuse implementation schedule by source facility (*Condition 26*).
- Provide 0.3 mgd AADF of aquifer recharge from the Old Winter Garden Road Rapid Infiltration Basin (RIB) Project and 0.4 mgd AADF of aquifer recharge from the Northwest Water Reclamation Facility RIB Expansion Project (*Condition 28*).
- Develop the Taylor Creek Reservoir/St. Johns River Project, or one or more other alternative water supply (AWS) projects to meet all or part of the permittee’s public water supply not met by groundwater or reclaimed water allocations authorized by the permit. The County was required to submit a preliminary project design, funding plan, proposed schedule, and CUP application for the project(s) by December 31, 2018 (*Condition 23*).

Under SFWMD WUP #48-00134-W, OCU is required to:

- Produce 40.9 mgd AADF of non-potable water for land application (*Condition 29*).
- Develop the Taylor Creek Reservoir/St. Johns River Project, or one or more other AWS projects to meet all or part of the permittee’s public water supply not met by groundwater or reclaimed water allocations authorized by the permit (*Condition 25*).
- The County was required to submit documents like that of CUP #3317 Condition 23 (above) for one or more AWS projects by March 31, 2018 (*Condition 26*).

Agreements

OCU maintains the following three primary types of potable water-related agreements:

- *Territorial agreements*, defining utility service areas.
- *Wholesale service agreements*, providing for wholesale or emergency water service (in one or both directions) between OCU and other utility providers.
- *Regional cooperative agreements*, for mutually beneficial initiatives, such as investigating alternatives, combining resources, or developing new or expanded regional sources and facilities.

Orange County’s policies and initiatives regarding territorial and joint planning area agreements are described in significant detail in the Intergovernmental Coordination Element of the County’s Comprehensive Policy Plan. OCU maintains territorial agreements with all the other major potable water providers within Orange County, and some of those in neighboring counties that may have facilities or customers in Orange County, including the following:

- City of Apopka
- City of Cocoa
- Pluris Wedgefield
- City of Maitland
- City of Mount Dora
- City of Ocoee
- Orlando Utilities Commission (OUC)
- Reedy Creek Improvement District (RCID)
- Seminole County Environmental Services
- Tohopekaliga Water Authority (City of Kissimmee)
- University of Central Florida (UCF)
- Utilities, Inc. of Florida
- City of Winter Garden
- City of Winter Park

OCU has several potable water service interconnects with other utility systems. While most of these interconnects are for emergency situations, a few potable water agreements are in place between Orange County and other entities allowing Orange County to purchase water if needed. **Table A.2** presents a summary of current wholesale and interim agreements. Historically, OCU has purchased minor volumes of wholesale water from these utilities in areas where OCU water distribution infrastructure was not yet in place.

Table A.2. Orange County Potable Water Service Agreements

Entity	Capacity / Conditions
City of Ocoee	Ocoee has an emergency interconnect agreement, and Ocoee Pines is served through a wholesale agreement with OCU.
Orlando Utilities Commission (OUC)	OUC can provide wholesale or interim water service to numerous special service connections to customers inside OCU’s territorial boundary that are not supplied by OCU, and emergency interconnects.
Reedy Creek Improvement District (RCID)	RCID can provide wholesale water service to Flamingo Crossings and Northeast Resort Parcel.
Seminole County	Emergency potable water interconnect agreements for Maitland/Bear Lake.
Tohopekaliga Water Authority (TWA)	The TWA can provide interim or wholesale water service to OCU in portions of the Southwest Service Area.
University of Central Florida (UCF)	UCF can purchase potable water service from OCU and has an emergency interconnect.
Utilities, Inc. of Florida	OCU can provide wholesale water service to David Shores.
City of Winter Garden	Winter Garden can provide wholesale water service to the Magnolia Woods and Partlow Acres subdivisions in the West Service Area.
City of Winter Park	Winter Park can provide wholesale or interim water service to Bradford Cove, Hunters Ridge Apartments, Sutton Ridge, and University Forest in the OCU East Service Area, and emergency interconnects.
Orange County Research and Development Authority	Emergency potable water interconnect agreement for the Central Florida Research Park.

In addition to territorial and wholesale service agreements, regional cooperative agreements are critical for the future cost-effective and environmentally responsible implementation of water resource management methods and development of traditional and alternative potable water supplies in the fast-growing east-central Florida region. As described in Section 2.6.7 of the Work Plan, Orange County currently maintains the following key regional cooperative agreements related to potable water:

- *STOPR Cost Sharing and Compliance Coordination Memorandum of Agreement*, between the City of St. Cloud, the Tohopekaliga Water Authority (TWA), Orange County, Polk County, and the RCID for collaboration in implementing water resource monitoring and compliance requirements of their jointly issued water use permits from the SFWMD. The agreement was signed in 2007 and has a duration of 20 years.
- *Taylor Creek Reservoir/St. Johns River Water Supply Project General Implementation Agreement*, between Orange County, OUC, the TWA, East Central Florida Services, and the City of Cocoa for setting the overall framework for implementation of the project, including allocation of flows, governance, and the project implementation process.
- *Interlocal Agreement Between the Water Cooperation of Central Florida and Reedy*

Creek Improvement District Relating to the Preliminary Design and Permitting of the Alternative Water Supply Project Known as the Cypress Lake Wellfield and Related Matters, between the City of St. Cloud, the TWA, Orange County, Polk County, and the RCID for establishment of commitments and financial responsibility for the project, including preliminary design, concentrate disposal, land acquisition, and final design and permitting.

Additional regional cooperative agreements related to potable water are described in Section 2.6.7 of the Work Plan.

ORLANDO UTILITIES COMMISSION (OUC)

Facilities

OUC is the municipal utility of the City of Orlando that provides water, electric, and chilled water services. OUC's water service area (**Figure A.2**) measures approximately 200 square miles which includes the Cities of Orlando, Edgewood, and Belle Isle plus large portions of unincorporated Orange County.

There are seven water supply/treatment facilities within the OUC water service area. Each facility includes wells, ozone generating equipment, ozone contact tanks, chemical feed equipment, ground storage reservoirs, high service pumps, control equipment, and emergency power facilities to run the plant in the event of an extended power outage. OUC's Southeast facility repumps water in the distribution system to maintain pressures in the extreme Southeast portions of the service area, including Lake Nona.

All OUC wells tap into the Lower Floridan aquifer. The only constituent in the raw water that requires treatment is hydrogen sulfide, a gas with an offensive odor that is easily removed by the ozone treatment equipment. OUC performs rigorous testing of the water it pumps from the aquifer to make sure that it is free from contaminants and suitable for treatment using the ozone treatment process.

OUC has three emergency interconnects with OCU which provide emergency sources of water in the event one utility unexpectedly experiences extensive loss of supply sources or treatment facilities. The water can flow either way through an emergency interconnect, depending on which utility needs the water. They are intended to be used only in an emergency and require the cooperation of both utilities to activate them during an emergency.

There are approximately 1,800 miles of transmission/distribution pipes ranging in size from 2 inches to 48 inches. One of the functions of this network is to interconnect all the water supply/treatment facilities with each other. There are three elevated water storage tanks connected to the transmission/distribution system. These tanks help maintain minimum acceptable pressure in the pipe network and supply water into the pipe network during peak demand periods.

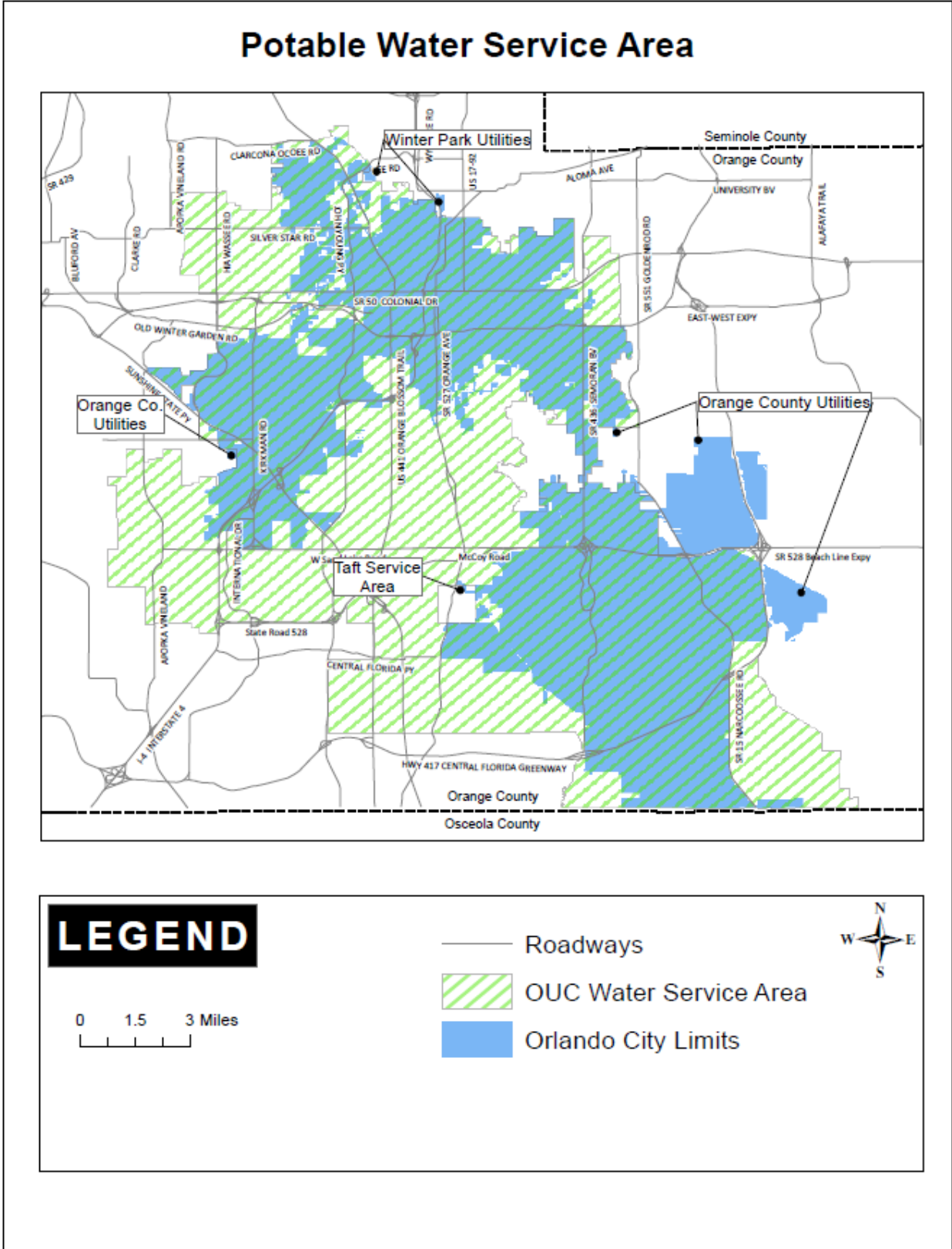


Figure A.2. Orlando Utilities Commission Potable Water Service Area

Permits

OUC entered into an interagency agreement with SJRWMD and SFWMD in May 2004 as part of its CUP renewal process. Under this agreement, SFWMD delegated to SJRWMD all its authority to issue a single, consolidated CUP to OUC. SJRWMD issued CUP #3159 in May 2004. It is a 20 year duration permit, scheduled to expire in October 2023. In addition to authorizing a consolidated CUP, the interagency agreement allows SJRWMD to issue well construction and environmental resource permits to OUC, and to enforce OUC's CUP throughout the 20 year duration of the permit. OUC's permit allows the withdrawal of up to 109.2 mgd of groundwater from the Lower Floridan Aquifer as well as limits on withdrawals at each water supply facility.

Agreements

In addition to the permit conditions, OUC has legal obligations under two settlement agreements. These agreements concluded several months of litigation brought on by permit challenges filed by Orange County and Lake County in October 2003. One agreement was signed by OUC, Orange County, SJRWMD, and SFWMD requiring OUC and Orange County to jointly pursue and develop at least 5 mgd of water from an AWS source such as the Taylor Creek Reservoir, the St. Johns River, or other acceptable sources. OUC also agreed not to challenge previously pending Orange County permits. The second agreement was signed by OUC and Lake County giving Lake County an option to participate in any AWS development project OUC pursues to ensure that Lake County has a place at the table as AWS is developed in Central Florida.

OUC's service area boundary was established by OUC and Orange County in May 1994 in the *Amended and Restated Orlando Utilities Commission/Orange County Water Service Territorial Agreement*. This 25 year agreement is intended to avoid duplication of facilities that would cause needless and wasteful expenditures and avoid unpredictability and continual changes in utility service areas which hinder the ability to make prudent capital investment or plan for efficient system expansion. The agreement allows for changes to the territorial boundary and the provision of wholesale water by one party to the other. As shown in **Figure A.2**, OUC is surrounded by the OCU water system service area, except for a portion of the northern boundary where OUC interfaces with the City of Winter Park water utility.

CITY OF APOPKA

Facilities

The City of Apopka's service area for its water system has historically coincided with the City's urban service area. The boundary for the service area contains approximately 98 square miles and was expanded with the acquisition of facilities from Orange County. The service area includes most of the area within the City limits, plus a large area within unincorporated Orange County.

The City of Apopka's Water Treatment Division operates and maintains five water treatment plants (WTPs) (including two WTPs that were purchased from Orange County): the Jack G. Grossenbacher WTP, the Mt. Plymouth Lakes WTP, the Myrtle Rogers Womble Northwest WTP, the Plymouth Regional WTP, and the Sheeler Oaks WTP. These five treatment plants are

located throughout the City of Apopka and unincorporated Orange County to serve their utility service area.

The WTPs are supplied by 12 groundwater wells ranging from 483 to 1,400 feet in depth into the Floridan aquifer. The groundwater pulled from these 12 wells is treated at the WTPs using cascade aeration to reduce odor causing compounds such as hydrogen sulfide and disinfected using sodium hypochlorite prior to distribution to the community. The total production capacity of the groundwater wells is 35.856 mgd.

Permits

The City of Apopka has a single CUP from the SJRWMD for its potable water supply system. The most recent issuance of CUP #3217 is dated June 8, 2021 and allows for a 16.0 mgd annual average usage of groundwater from the Floridan aquifer for public supply use through 2031. In 2015, the City of Apopka served 68,695 customers in Orange County and used on average 9.1 mgd of groundwater for public supply.

Agreements

The City of Apopka has a service area agreement with Orange County for water and sewer service. The agreement provides that the City of Apopka will be the primary provider for potable water service, reclaimed water, and wastewater services within the City and within unincorporated Orange County that lies within the City of Apopka's service area.

APOPKA (ZELLWOOD WATER USERS)

Facilities

This small utility provides potable water to the unincorporated town of Zellwood in northwestern Orange County. Zellwood is on Highway 441 between the cities of Apopka and Mount Dora, approximately 3.6 miles north of Lake Apopka.

The Zellwood Water Users water supply system consists of two water plants and three groundwater wells. The Jones Plant well was drilled in 1949 when residents first experienced the need for a water system. The King Water Plant well was drilled in 1972 as the system continued to grow. A third groundwater well was drilled in 2019. Reclaimed water is not available currently in the Zellwood Water Users service area.

Permits

This private utility has a single CUP from the SJRWMD to serve customers of its potable water supply system. The most recent issuance of CUP #3301 is dated August 3, 2021 and allows for a 0.124 mgd annual average usage of groundwater from the Upper Floridan aquifer for public supply. This permit is set to expire on December 12, 2023. In 2015, Zellwood Water Users served 819 customers in Orange County and used on average 0.08 mgd of groundwater for public supply.

Agreements

This private utility is regulated by the SJRWMD, who establishes the territorial boundary. There are no agreements between this utility and Orange County.

EAST CENTRAL FLORIDA SERVICES

Facilities

This private water provider serves the water needs of a large cattle ranch (Deseret Ranches of Florida) in Brevard, Orange, and Osceola counties over 220,000 acres in size. The ranch has existed for several decades and much of the property is located south of the Beachline Expressway (SR 528) and north of SR 192; a small portion is located north of the Beachline Expressway. The eastern boundary extends west and parallel of the St. Johns River and the western boundary extends into Osceola and Orange County and almost to SR 441.

The provider uses groundwater to irrigate improved pasture, water livestock, and provide potable water supply to year round and seasonal residents. The provider also uses surface water to irrigate and freeze-protect citrus and uses groundwater to facilitate operations at two borrow pits on site.

In terms of household use the provider uses groundwater to supply 235 year round residents, 30 employees at the ranch headquarters, and 278,250 seasonal residents at campgrounds and hunting camps located on the ranch. In addition, the provider will provide water to a church camp being constructed. The resident and seasonal population is expected to remain steady throughout the next 10 years (permit duration).

Permits

The most recent issuance of CUP # 3426 is dated February 9, 2018 and allows for an annual average groundwater withdrawal of 22.32 mgd from the Floridan aquifer to irrigate 6,795 acres of pasture; 0.09 mgd average of groundwater to water 7,647 head of livestock; 0.04 mgd average of groundwater from the Floridan and surficial aquifers for household use; 0.33 mgd average of surface water from the L-73 Canal for micro-spray irrigation of 230 acres of citrus; 0.13 mgd average and 0.14 mgd average of groundwater from the surficial aquifer to dewater for mining fill at the Dallas Blvd and SR 520 Borrow Pits, respectively, through January 10, 2022; and 0.06 mgd average of surface water for freeze protection of citrus. This permit expires May 9, 2032.

Agreements

The private water provider is regulated by the Public Service Commission which establishes its service area. There are no agreements with Orange County. Deseret Ranches has a well water supply agreement with the City of Cocoa.

FLORIDA GOVERNMENTAL UTILITY AUTHORITY

Facilities

The Florida Governmental Utility Authority (FGUA) is a private utility that owns and operates the Tangerine WTP – a category V, class C treatment facility in northwest Orange County located west and east of SR 441 Orange Blossom Trail. FGUA provides service to approximately 310 customers. The Tangerine Water System includes 2 supply wells and a 11,000 gallon hydropneumatic tank. Water is pumped from the wells, treated by hypochlorination, and stored in the tank for use.

Permits

CUP #51073 issued on February 24, 2014 allows for maximum annual withdrawals for all uses within the site Tangerine Park not exceeding 46.36 million gallons per year (mgy) from the Floridan aquifer (0.127 mgd). This permit expires February 25, 2034. In 2015, the Florida Governmental Authority served 2,449 customers in Orange County and used on average 0.07 mgd of groundwater for public supply.

Agreements

The private utility is regulated by the Public Service Commission which establishes its service area. There are no agreements with Orange County.

CITY OF MOUNT DORA

Facilities

The City of Mount Dora is located in north-central Lake County, approximately 8 miles north-northeast of Lake Apopka. The City owns and operates a regional water supply and distribution system that provides service to most areas of the City and adjoining part of unincorporated areas of Lake and Orange County. The City has an interlocal agreement with Orange County to provide service to an area of unincorporated Orange County. Much of the projected population growth in the City's service area is expected to occur outside of Orange County. The Orange County interlocal agreement specifically provides for service in 1,265 acres in the Northeast corner of Orange County with a maximum of 2,911 ERUs initially developed to serve the Stoneybrook Subdivision with commercial support areas.

The City owns two active water treatment plants that provide service to most developed areas of the City and some developed areas of unincorporated Lake and Orange Counties. The service area consists of approximately 12,800 acres with potential growth to 13,600 acres with the new Wolf Branch Innovation joint planning area within unincorporated Lake County. At present, the City of Mount Dora owns and operates five upper Floridan aquifer public supply wells – three wells at the City's WTP#1 and two wells WTP#2. WTP# 2 is permitted under its current CUP to construct 2 additional wells in the next 10 years. Both water facilities are located in Lake County.

The 2020 population of the service area was estimated at 21,611, and the 2040 projection is estimated at 31,909. Currently, water is primarily used for household and commercial type uses.

The service area is predominately residential and approximately 74 percent of the current potable water use is under the residential use classification (single-family and multifamily).

Approximately 10 percent of the water use is by commercial use consisting primarily of potable water supply for small businesses, professional offices, churches, and restaurants, 10 percent of the water use is for urban landscape irrigation (City parks, schools, City Hall and median irrigation) and 5 percent is utility uses and unaccounted for losses.

Permits

The City of Mount Dora has a single CUP from the SJRWMD to serve customers of its potable water supply system. The most recent issuance of CUP #50147 is dated July 27, 2021 and allows for a 5.9 mgd average daily usage of groundwater from the Upper Floridan aquifer for public supply. This permit is set to expire on August 9, 2031.

Agreements

The City of Mount Dora has several interlocal agreements with Orange County. A joint planning agreement provides for the joint review of land use and zoning and development issues. The joint planning agreement requires the County to enforce the City's design and density standards within the area. With respect to utilities, the City agreed to provide water and sewer service to the unincorporated areas within the joint planning area for a 50-year term. At the end of the 50 years, the County agreed to provide services and the City will retain the customers served by the City. A water and sewer agreement provides for water and sewer service to unincorporated areas within Orange County that are also within the joint planning area.

CITY OF OCOEE

Facilities

The City of Ocoee has established a potable water utility service boundary that includes lands within the City and in unincorporated Orange County that are also within the Joint Planning Area and within the water and sewer service boundary.

The City of Ocoee currently provides potable water service from two existing water treatment plants: the Forest Oaks WTP and the South WTP. The water source for the existing treatment plants is groundwater from the Floridan Aquifer.

The Forest Oaks WTP has four existing wells for public supply: three from the Lower Floridan and one from the Upper Floridan. The plant contains two storage tanks with a combined capacity of 1.07 mgd. The South WTP in the southern portion of the service area has three existing wells for public supply, both from the Lower Floridan. It is also proposing an additional Lower Floridan well to meet future demands. The South WTP contains two storage tanks with a combined capacity of 1.34 mgd. Water is pumped from the aquifer system, aerated, fluoridated, chlorinated, and then stored and distributed.

Permits

The City of Ocoee has a CUP from the SJRWMD for its potable water supply system. The most recent issuance of CUP #3216 is dated April 5, 2021 and allows for a 4.88 mgd annual average

usage of groundwater from the Floridan aquifer for public supply use. The permit is set to expire on November 26, 2026. In 2015, the City of Ocoee served 31,725 customers in Orange County and used on average 3.57 mgd of groundwater for public supply.

Agreements

The potable water utility service boundary was established pursuant to the Orange County/City of Ocoee Water Service Territorial Agreement dated November 14, 1988, as amended February 11, 1994. The provision of sewer service was established pursuant to the Orange County/City of Ocoee Sewer Service Territorial Agreement dated June 8, 1987, as amended February 11, 1994.

The agreements provide water and sewer service within the corporate limits of the City. The City's policy is also to provide water and sewer service to the following areas: i) within unincorporated Orange County, ii) within the Joint Planning Area, and iii) within the City sewer and water service territories per the agreement with Orange County. A petition for voluntary annexation is a condition precedent to the receipt of water and sewer service from the City.

For lands located in unincorporated Orange County outside the Joint Planning Area but inside the sewer and water service territories, landowners are not required to petition for annexation as a condition of receipt of water and sewer service. The City is not required to provide service in this area.

ORANGE COUNTY RESEARCH AND DEVELOPMENT AUTHORITY (CENTRAL FLORIDA RESEARCH PARK)

Facilities

The Central Florida Research Park is located approximately 10 miles east of downtown Orlando and south from the adjacent University of Central Florida (UCF) in Orange County. The Central Florida Research Park is a relatively large high-technology center occupied by industrial complexes, research facilities, commercial businesses, a hotel, and a condominium. The total property area (service area) consists of 1,027 acres. As of December 2020, there were 58 buildings constructed within the park.

The Orange County Research and Development Authority owns a 1.34-acre water treatment plant located within the property boundaries of the Central Florida Research Park. The water treatment plant supplies water for the park and for emergency backup to the UCF.

Water for household, landscape irrigation, water utility and essential is supplied using an existing 12-inch casing diameter well, (Well 1 GRS ID 12223) and 14-inch casing diameter well (Well 2 GRS ID 12224), which were both completed at a depth of 440 feet into the Floridan Aquifer. Well 1 was cased to a depth of 207 feet and Well 2 was cased to a depth of 210 feet. The maximum rated pumping capacity for Wells 1 and 2 is 1,550 gallons per minute (gpm), and the combined maximum rated pumping capacity is 3,100 gpm. Water usage is monitored for each well using totalizing in-line flow meters. The two wells are spaced approximately 250 to 300 feet apart near the western property limit and are approximately centered between the north and south park limits.

Permits

The Orange County Research and Development Authority has a CUP from the SJRWMD to supply the Central Florida Research Park which has an estimated 2027 population of 31,588. The permit was issued on August 7, 2007 and allows for a 1.315 mgd annual average usage of groundwater from the Floridan aquifer for public supply use including household use, landscaping irrigation, essential uses, water utility needs, and unaccounted use. In addition, the permit allows for 0.191 mgd of surface water and/or reclaimed water for landscape irrigation and 0.351 mgd of groundwater as emergency back-up use for UCF. The permit expires on August 7, 2027.

Agreements

The Orange County Research and Development Authority and UCF operate independent and separate potable water supply systems under normal circumstances. However, the water supply systems are connected with a valve that is closed under normal circumstances. The Emergency Use of Connected Water Systems agreement in the Third Addendum to the Utilities Service Contract executed October 9, 1991, between the Orange County Research and Development Authority and UCF provides that either party may open the valve and draw upon the other party's potable water sources to meet an emergency. The use is metered, and the District granted an annual allocation of 128 mgd (0.351 mgd AADF) for emergency backup use. In 2021, The Orange County Research and Development Authority requested, and Orange County agreed, to implement an emergency interconnection with the County to supply potable water to the Central Florida Research Park when the Authority is unable to provide potable water services to its customers during a bona fide short-term emergency. This emergency interconnection agreement defines the terms and conditions of providing the emergency potable water services, including rates and billing, installation and maintenance of the interconnection, and an emergency operational plan.

TOHOPEKALIGA WATER AUTHORITY (TWA)

Facilities

Established in October 2003 by a special act of the Florida legislature, the TWA is the largest provider of water, wastewater, and reclaimed water services in Osceola County. Under the special act, the service area of the TWA includes the City of Kissimmee and unincorporated areas of Osceola County, except for RCID and the City of St. Cloud. TWA currently serves over 100,000 customers in Kissimmee, Poinciana, and unincorporated areas of Osceola and Orange County. In April 2007, TWA acquired Poinciana Utilities expanding the customer base by 30 percent.

TWA owns and operates 13 water plants and 8 wastewater plants while maintaining over 1,300 miles of water mains, 1,200 miles of wastewater mains, 320 miles of reclaimed water mains, and 390 wastewater pump stations.

TWA water facilities include 13 water treatment plants consisting of wells, ground storage tanks, high service pumps and the water distribution system. TWA water facilities currently rely

exclusively on groundwater from the Upper Floridan Aquifer. Recognizing the need to develop AWS, the TWA initiated the development of a brackish water supply near Lake Cypress. Along with OCU and other partners, TWA continues to seek the development of the St. Johns River/Taylor Creek water supply project.

Permits

The TWA has a WUP from the SFWMD for its potable water supply system. The most recent issuance of WUP #49-00103-W is dated January 10, 2020 and allows for a 43.4 mgd annual average usage of groundwater from the Floridan aquifer system for public supply use. This modified WUP canceled and superseded previous WUP's 49-00002-W (Buenaventura Lakes service area) and 49-0069-W (Poinciana Water system) which are now combined under WUP 49-00103-W. The permit is set to expire on June 10, 2027. In 2015, the TWA served 256,755 customers in its service area and used on average 33.2 mgd of groundwater for public supply. The TWA's 2035 projected population is 397,897 with most growth occurring within Osceola and Polk counties.

In 2007, the TWA renewed its SFWMD WUP concurrently with permit renewals for four other utilities: St. Cloud, Orange County, Polk County, and the RCID (STOPR Group). The STOPR Group negotiated an interlocal agreement to establish this relationship, and the permit conditions required the development of an extensive monitoring network and program that covers the service area of the STOPR Group.

As a condition of the current WUP, the TWA is required to describe an AWS project that develops alternative supplies from the Cypress Lake Brackish Groundwater Wellfield and/or the Kissimmee River Chain of Lakes Surface Water Project and/or other AWS projects. In addition, as a condition of its permit, TWA must develop an additional AWS project(s) to meet projected demands within its service area through 2027 not met by the groundwater allocation and the above mentioned AWS project requirement.

Agreements

In December 2006, the STOPR Group executed an Interlocal Agreement Relating to Participation in Regional Cooperation to Pursue Water Use Permits in the SFWMD. In the agreement, the five utilities recognized the benefits of regional cooperation, defined a framework for such cooperation, including intent to jointly pursue their respective, competing consumptive use permit applications to meet 2013 water supply demands. One of the critical provisions of the agreement was the commitment to provide the SFWMD, in satisfaction of requests for additional information, with a regional transient groundwater model for cumulative impact assessment of the proposed STOPR Group's withdrawals.

The TWA also maintains two agreements with Orange County to sell wholesale potable water to the County to service Black Lake and the Hartzog Road/Horizon West area. The first agreement was signed on December 19, 2000 and allows for the sale of up to 1.2 mgd AADF for the 20 years, with two five-year auto renewals. The second agreement commenced on August 30, 2011 and allows for up to 250,000 gpd to be sold to Orange County. This agreement is in perpetuity unless given notice otherwise.

UNIVERSITY OF CENTRAL FLORIDA (UCF)

Facilities

UCF is in northeastern Orange County, approximately 13 miles east of downtown Orlando. UCF has a student population of more than 71,000 and faculty of 12,300. Four production wells supply the potable water demands of the University. The Four wells provide all the potable water needs to the campus, except for UCF Academic Villages and Wellness Center, a relatively small area that receives water from Orange County's main water line. There is also an emergency backup main valve to the adjoining Central Florida Research Park that remains in the closed position. In addition, there are seven active irrigation wells, an additional well for aquaculture, two wells for heating and cooling, and one inactive well.

Permits

UCF holds CUP #3202 issued by the SJRWMD on May 15, 2014. The permit allows for a 0.82 mgd annual average usage of groundwater from the Floridan aquifer for commercial, industrial, and institutional use; 0.065 mgd for back-up irrigation; and 0.05 mgd for aquaculture. The permit expires on May 13, 2034.

Agreements

In 1998, UCF entered into a Wastewater and Reclaimed Water Service Agreement with Seminole County and Orange County. At that time, UCF provided wastewater and reclaimed water to its property and to property within the Central Florida Research Park. The agreement allows Seminole County to provide UCF with bulk wastewater service and reclaimed water services within the UCF Service Area. In 1999, the agreement was amended to enter into an agreement with the City of Orlando to have the Iron Bridge Water Reclamation Facility provide reclaimed water to UCF for irrigation. UCF has also entered into a wholesale potable water agreement with OCU.

WEDGEFIELD UTILITIES

Facilities

Wedgfield Utilities (Pluris Wedgfield, Inc.) provides potable and wastewater services for the Wedgfield development service area that encompasses approximately 800 acres including a 120-acre golf course in eastern Orange County. Currently, the water supply system consists of one water supply/wastewater treatment plant and three Floridan aquifer wells. The wells include one 8-inch well (Well 2) and one 10-inch well (Well 3). A 12-inch well (Well 4) was drilled and completed in 1975 on property currently owned by Wedgfield and has not been in use. At the time the well was completed, Wedgfield was not the owner of the well/property. Wedgfield is now investigating the use of this well and if potential pumping quantities and water quality are suitable for potable use.

Permits

This private utility has a single CUP from the SJRWMD to serve customers of its potable water supply system. CUP #3302 was issued on July 10, 2013 and allows for the use of 185.42 mgd

(0.51 mgd) of groundwater from the Floridan aquifer for public supply, commercial/industrial, water utility, and unaccounted for types of use to serve a projected population of 4,565 in year 2033. This permit is set to expire on July 9, 2033. In 2015, Wedgefield Utilities served 4,346 customers in Orange County and used on average 0.32 mgd of groundwater.

Agreements

This is a private utility regulated by the Florida Public Service Commission. Orange County has a potable water service territorial agreement with Econ Utilities Corporation (now Pluris Wedgefield, Inc.) that recognized the service territory established by the Florida Public Service Commission.

CITY OF WINTER GARDEN

Facilities

The City of Winter Garden is in western Orange County, approximately 12 miles west of the City of Orlando on State Road 50. The City of Winter Garden occupies approximately ten square miles with direct access to Lake Apopka. The existing water and wastewater service areas encompass the entire incorporated limits of the City and several properties outside the City limits – approximately 18 square miles. Winter Garden’s water system was purchased by the City in 1946. The system has been improved and extended several times since its purchase. Historically, the land in the City and surrounding areas was utilized mostly for citrus and farming. However, land use trends in the past twenty years have shifted toward residential and commercial development.

The City currently operates three WSFs - the Palmetto Street WSF constructed in 2002, the Fuller’s Cross Road WSF constructed in 1992 and renovated in 2002, and the Stoneybrook WSF constructed in 2004. The water system did include an additional WSF on Boyd Street, but this plant was decommissioned in 2003. Water pumped from the Boyd Street well is now piped to the Palmetto Street WSF. The Palmetto Street and Fuller’s Cross Road WSFs obtain water from wells (Wells No. 1 through 4) completed in the Upper Floridan aquifer. The Stoneybrooke WSF obtains water from wells (Well No. 5 and Well No. 6) completed in the Lower Floridan aquifer. Well No. 6 was installed for redundancy and does not run in tandem with Well No. 5. The WSFs provide treatment through aeration and chlorine disinfection. The finished water is pumped into storage facilities located at each of the treatment plants and then into the distribution system.

The City of Winter Garden has almost doubled in size since 1996 with a population of 53,304 people in 2020. Historically, most of the residential development occurred north of State Road 50 and the Turnpike. The City has been experiencing a high rate of growth in its southern Service Area over the past decade as the result of development expansion into the area from the Orlando Metropolitan Area, better transportation access from the Western Beltway, and the desirable small town lifestyle.

Permits

The City of Winter Garden has a CUP from the SJRWMD for its potable water supply system. The most recent issuance of CUP #3368 is dated October 17, 2017 and allows for a 6.33 mgd

annual average usage of groundwater from the upper and lower Floridan aquifers for household, commercial/industrial, irrigation, water utility, and unaccounted for water through June 7, 2025. In 2015, the City of Winter Garden served 43,397 customers and used on average 6.70 mgd of groundwater.

Agreements

The City of Winter Garden has an agreement with Orange County to purchase wholesale potable water from the County for a portion of the City's southeast service area. The agreement also allows the City to provide potable water service to the County's Magnolia Woods service area.

In 2007, the City of Winter Garden and Orange County entered a Water, Wastewater, and Reclaimed Water Territorial Agreement. The parties agreed to a City Utility Service Area and an Adjacent Territorial Area. The Adjacent Territorial Area includes the County's service area and service areas of other municipalities and those territories of private utilities certified by the Florida Public Service Commission. The agreement generally allocates to the City all lands in the City's Utility Service Area and to the County all lands outside the City's Utility Service Area. Also, the agreement allows the parties to retain existing customers, the City to provide utility service to some portions of the Town of Oakland, and addresses system interconnections and transfer of customers and distribution service facilities.

CITY OF WINTER PARK

Facilities

The City of Winter Park's Water Treatment Division operates four interconnected water treatment facilities to provide potable water to its approximately 24,000 connections. Their 22-square mile service area encompasses the entire city limits, as well as some adjacent parts of unincorporated Orange County. The projected growth for the service area is primarily due to infill and redevelopment.

Potable water for the City of Winter Park's service area is currently provided by four water treatment plants: Swoope, Wymore, Magnolia, and Aloma. The four existing water plants combined withdraw groundwater from eight production wells. The two Wymore Plant wells, D and E have been converted for use as back-up only. Water supply for the system is provided by a total of six wells with two as back-up. All the current and future active wells will obtain water from the Lower Floridan Aquifer.

Permits

The City of Winter Park has a CUP from the SJRWMD for its potable water supply system. The most recent issuance of CUP #7624 is dated October 11, 2011 and allows for a 12.7 mgd annual average usage of groundwater from the Floridan aquifer for public supply. The permit is set to expire on October 11, 2025. In 2015, the City of Winter Garden served 65,594 customers and used on average 9.97 mgd of groundwater for public supply.

Agreements

The City of Winter Park has two agreements with Orange County. The Water and Wastewater Territorial Agreement establishes the service territory for the City which includes the incorporated area as well as certain unincorporated areas of Orange County.

In addition, Orange County entered into an agreement with the City for Emergency Potable Water Supply Interconnection which includes a letter agreement for the Wymore Road interconnection. The requested interconnection provides for an emergency source of water if an unforeseen problem with the other water treatment facilities affects the City's ability to provide adequate service to customers on the western fringe of its service area.

APPENDIX B

Reclaimed Water Provider Facilities Serving Unincorporated Orange County

An inventory of available water reclamation and reuse facilities was completed for those public and private utilities providing wastewater treatment and reclaimed water reuse service within unincorporated Orange County. This appendix presents additional information on the existing facilities and related capacities for these wastewater and reclaimed water service providers, which include the following significant utilities:

- Orange County Utilities
- Orlando (City of)
- Apopka (City of)
- Mount Dora (City of)
- Ocoee (City of)
- Tohopekaliga Water Authority
- Wedgefield Utilities
- Winter Garden (City of)

Orange County Utilities (OCU) and the City of Orlando are the largest reclaimed water service providers within unincorporated Orange County. Summaries of the existing water reclamation facilities (WRFs) and reuse capacities associated with the other utilities listed above were not always available. Therefore, the data and analysis section of the Orange County Work Plan, including **Table 3**, focuses only on OCU and the City of Orlando.

The suppliers operate numerous WRFs, which are described in more detail below. Detailed facility information was not available for providers other than OCU and the City of Orlando. Therefore, certain assumptions of existing facilities described in the following were made based on the previous Work Plan and other publicly available data. This appendix was prepared in October 2021 and reflects status as of this date in time unless noted otherwise.

ORANGE COUNTY UTILITIES (OCU)

Treatment Facilities

OCU is the largest wastewater utility and reclaimed water provider in unincorporated Orange County. As of the end of 2020, the OCU Water Reclamation Division provided wastewater collection and treatment service to over 164,000 connections in unincorporated Orange County and portions of several municipalities through the operation and maintenance of wastewater collection systems, WRFs, and reuse distribution systems.

OCU owns and operates three active regional WRFs: the Northwest WRF, the South WRF, and the Eastern WRF. The Southwest WRF is currently under construction and will accommodate future growth in the County's Southwest service area. This plant is under construction expected to be completed by 2022.

The OCU service area surrounding these facilities included approximately 2,031 miles of sewer mains, 630 miles of reclaimed water lines, 817 OCU-maintained pump stations, and 4 reclaimed water pump stations (with 3 more planned) as of the end of 2020. The total annual average wastewater volume treated at OCU facilities in 2020 was estimated at 44.2 million gallons per

day (mgd) annual average daily flow (AADF). Following treatment, all 44.2 mgd of the reclaimed water produced in 2020 was used for beneficial reuse. The County wastewater/reclaimed water service areas are shown in **Figure B.1**.

Reuse Facilities

OCU beneficially reuses 100 percent of its reclaimed water from the Eastern, South, and Northwest WRFs and will do the same with the Southwest WRF when it is completed. OCU reuses reclaimed water for aquifer recharge through rapid infiltration basins (RIBs), public access irrigation, and lake augmentation; for industrial uses through the Curtis H. Stanton Energy Center cooling water; and for wetlands enhancement. These and other reclaimed water reuse systems are permitted as part of the wastewater operational facility permits issued by the Florida Department of Environmental Protection. For each WRF, the County documents the planned end use of the reclaimed water produced. Each issued permit lists both treatment capacity and reclaimed water management (reuse) system capacity as summarized in **Table B.1** below.

In 2020, OCU used approximately 10,302 million gallons (MG) of reclaimed water to irrigate golf courses, residences, citrus groves, and commercial businesses. The County recharged approximately 5,945 MG of water into the aquifer through wetlands, RIBs, and augmentation of lakes; and provided approximately 2,564 MG of cooling water to the Curtis H. Stanton energy facility. The Orange County permitted reclaimed water system is shown in **Figure B.2A** and the distribution of reclaimed water reuse flows in 2020 summarized by type of use is shown in **Figure B.2B**.

Table B.1. Orange County Utilities Reclaimed Water Permitted Capacity and Flows

Water Reclamation Facility	Current Permitted Treatment Capacity (mgd AADF)	Current Permitted Reuse Capacity (mgd AADF)	2020 Reclaimed Water Flow (mgd AADF)	Projected 2035 Reclaimed Water Flow (mgd AADF)
South	56.0	68.1	26.0	41.3
Eastern	24.0	31.3	19.4	24.2
Northwest	11.25	16.0	6.1	9.0
Southwest ⁽¹⁾	NA	NA	0.0	4.2
Totals	91.3	115.4	51.5	78.7

(1) The Southwest WRF is a future 5 mgd facility with two planned 5 mgd increases during Phases II & III.
NA = Not applicable.

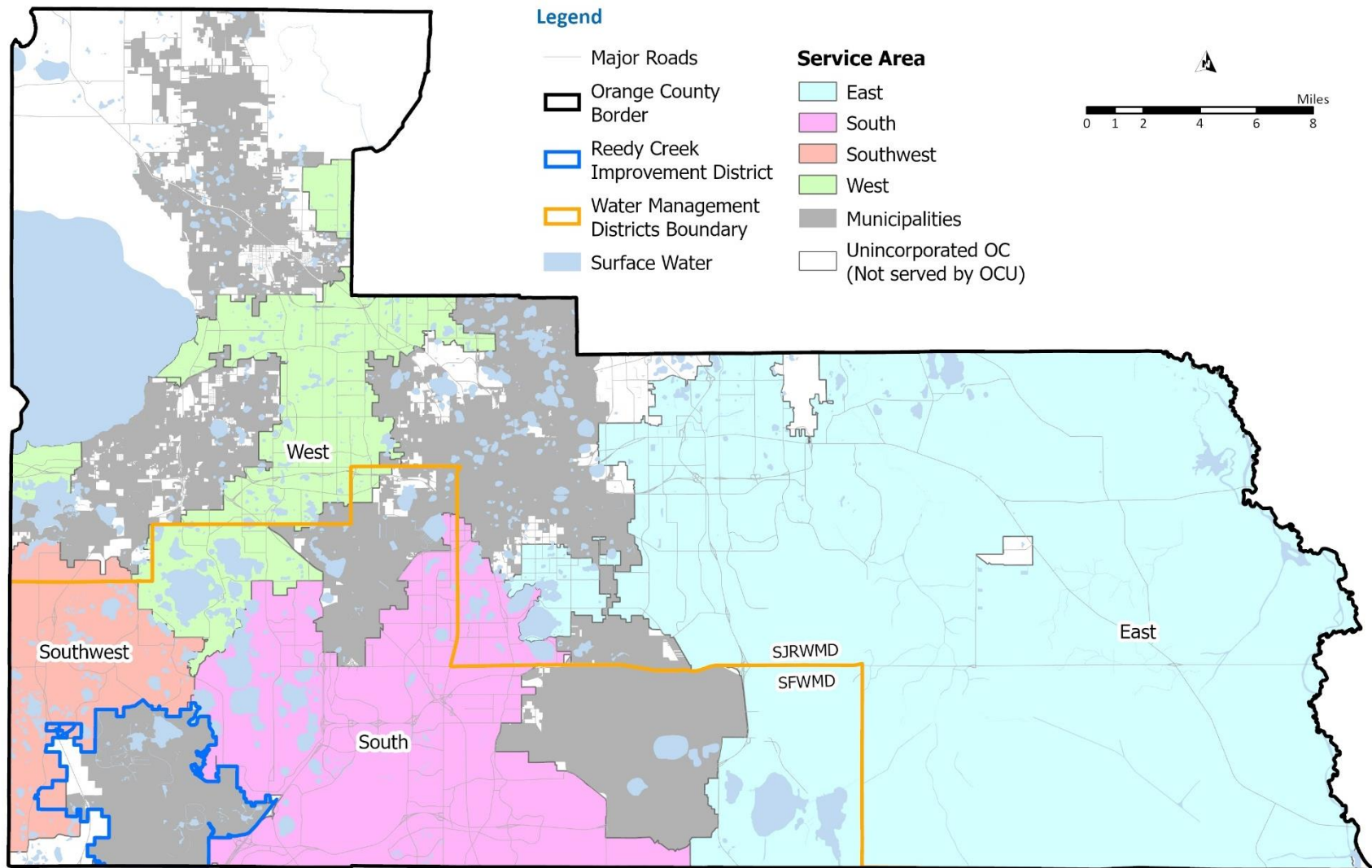


Figure B.1 Orange County Utilities Potable Wastewater Service Area Map



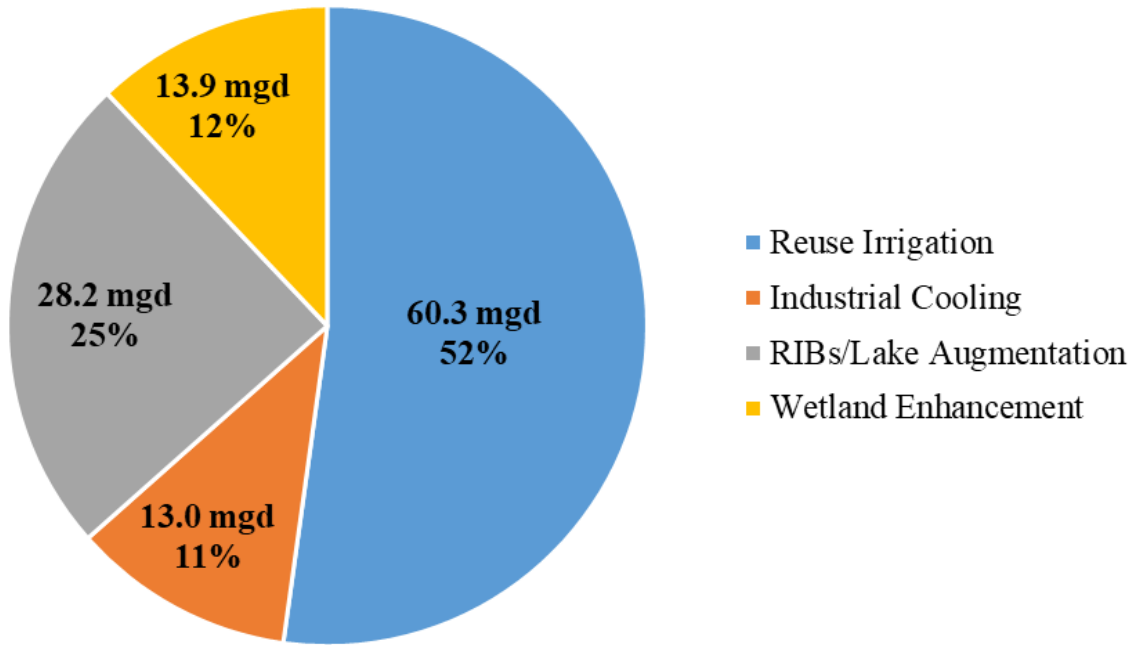


Figure B.2A. Orange County Utilities Reclaimed Permitted Allocation Summary

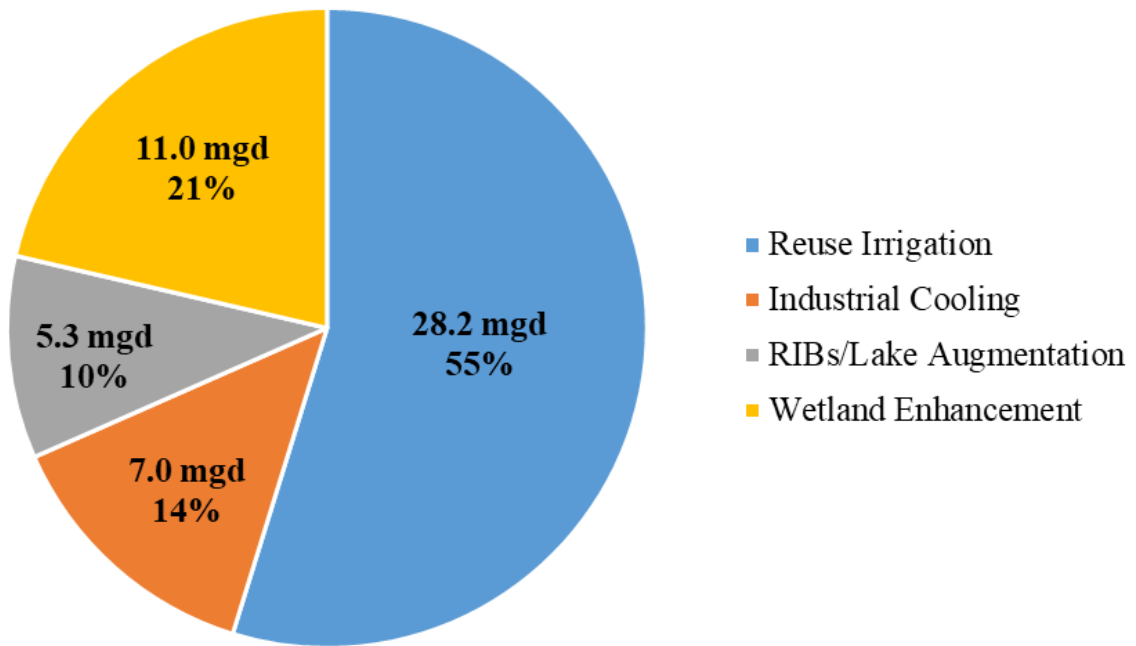


Figure B.2B. Orange County Utilities Reclaimed Water Reuse Distribution Summary, 2020

Wastewater and Reclaimed Water Agreements

OCU maintains the following three primary types of wastewater/reclaimed water agreements:

- *Territorial agreements*, defining utility service areas.
- *Wholesale service agreements*, providing for wholesale or emergency wastewater/reclaimed water service (in one or both directions) between OCU and other utility providers.
- *Regional cooperative agreements*, for mutually beneficial initiatives such as investigating alternatives, combining resources, or developing new or expanded regional sources and facilities.

Orange County's policies and initiatives regarding wastewater and reclaimed water territorial agreements are described in detail in the Intergovernmental Coordination Element. OCU maintains territorial agreements with all the other major wastewater/reclaimed water providers within Orange County and some of those in neighboring counties.

As with the potable water supply system, OCU also has several service interconnects with other utility wastewater and reclaimed water systems. Several wholesale wastewater and reclaimed water agreements are in place between the County and other entities (**Table B.2**). Furthermore, the County is continually seeking opportunities for collaboration and is currently negotiating with multiple utilities regarding potential future reclaimed water service agreements.

Table B.2. Orange County Wholesale Wastewater and Reclaimed Water Service Agreements

Entity	Capacity / Conditions
City of Apopka	OCU has an agreement to provide Apopka (part of OCU’s former North Service Area) with 2.5 mgd to 3.0 mgd of reclaimed water.
City of Ocoee	OCU (through the Water Conserv II project) has a wholesale agreement to provide reclaimed water from the South Service Area to the City of Ocoee. OCU also has wholesale agreements to provide reclaimed water to the North Wholesale Area and the Ocoee Pines development.
City of Orlando	OCU has an agreement with the City to treat a portion of OCU’s wastewater at the Iron Bridge Regional WRF and provide reclaimed water to the Horizon West Villages from Water Conserv II. OCU also has a wholesale agreement to provide the City with reclaimed water, as well as several agreements related to individual reclaimed water service connections via ERRWDS (see below).
Orlando Utilities Commission (OUC)	OCU is required to provide OUC up to 14.7 mgd to the Curtis Stanton Energy Center (13 mgd from EWRF, 1.7 mgd landfill stormwater).
Reedy Creek Improvement District (RCID)	OCU has a wholesale agreement that allows them to purchase reclaimed water for the Southwest Service Area from RCID, and for RCID to provide wholesale wastewater service to OCU through several interconnections.
Seminole County	OCU has two agreements to accept and provide wastewater from Seminole County residential areas.
Tohopekaliga Water Authority (TWA)	OCU has multiple wholesale agreements that allow for up to 1.35 mgd AADF of wastewater to be treated at TWA facilities, an agreement for OCU to provide wastewater service to the Southern Oaks development, and an agreement for TWA to provide wastewater and reclaimed water service to the Black Lake development.
City of Winter Garden	OCU, as part of Conserv II with the City of Orlando, has an agreement to provide up to 2.353 mgd of reclaimed water to Winter Garden.
City of Winter Park	OCU has multiple agreements to accept wastewater flows in a specified amount from certain residential areas in Winter Park.

In addition to the territorial and wholesale service agreements discussed above, Orange County maintains the following key regional cooperative agreements related to reclaimed water:

- *Water Conserv II Regional Reuse System Agreement*, a cooperative agreement between Orange County and the City of Orlando as joint owners of the largest agricultural irrigation reuse project in the world, in place since 1984.
- *Eastern Regional Reclaimed Water Distribution System (ERRWDS) Agreement*, an agreement for interconnected reclaimed water reuse distribution facilities at a large regional scale in east Orange County and Seminole County. Led by the City of Orlando, partners to the agreement include Orange County, Seminole County, the City of Oviedo, the University of Central Florida (UCF), and Orlando Utilities Commission (OUC). Orange County signed this agreement with the City of Orlando in 2008; it has a duration of 50 years with automatic 10-year renewals unless either party chooses to end the agreement.

CITY OF ORLANDO

Treatment Facilities

The City of Orlando currently operates three WRFs (Iron Bridge, Water Conserv I, and Water Conserv II) that treat wastewater to meet public access reclaimed water standards. The water from all three facilities is suitable for residential and commercial landscape irrigation and for other uses to offset groundwater withdrawals.

The City of Orlando provides reclaimed water to several areas of unincorporated Orange County within the Water Conserv I service area, in particular along Narcoossee Road and Weatherbee Road. Reclaimed water is supplied to Orange County for OCU to distribute to their users. OCU handles the billing for their customers.

Reuse Facilities

The City of Orlando's Eastern Regional Reclaimed Water Distribution System (ERRWDS) was designed and constructed to supply approximately 33 mgd from the City's Iron Bridge WRF to the OUC service area, Orange County, Seminole County, UCF, and Oviedo. The multi-phase project was constructed from 2006 through 2011. OUC partnered with the City to construct the ERRWDS and has helped fund plant improvements, reuse mains, booster pump stations, and a supplemental well. The system allows Orange County to use the reclaimed water pipeline and supply more customers in the OUC service area with reclaimed water. The City will also provide the County with additional reclaimed water if they cannot meet all their customer demands. OUC has \$1.7 million budgeted in the 2021 five-year capital plan for a storage and repump station which will complete the last phase of the project.

Project RENEW is a regional reuse project that is currently on hold. The project will be re-evaluated to determine the best location(s) for reclaimed water in the region that is environmentally, technologically, and economically feasible. Project RENEW may also be used to meet an adopted minimum flows and levels prevention and recovery strategy.

CITY OF APOPKA

Treatment Facilities

The City of Apopka owns and operates the Apopka WRF which is an existing 8.0 mgd AADF permitted capacity plant consisting of a preliminary treatment structure with influent screening, grit removal, odor control, flow equalization, two individual activated sludge treatment trains (anoxic/aeration), with secondary clarification, chemical feed, filtration, and chlorination. The facility includes an existing stormwater treatment system, the North Shore Reclaimed Water Treatment Facility, located on the north side of Lake Apopka with a permitted capacity of 5.0 mgd AADF. This stormwater treatment plant includes raw water screening, a slow sand-filtration system, a chlorine-contact tank, a 3.0 MG reclaimed water storage tank, and a reclaimed water pump station. In 2020, the average influent daily flow at the WRF was 2.92 mgd and the total reclaimed water flow was 7.79 mgd.

Reuse Facilities

The City of Apopka furnishes reclaimed water to users through its Project ARROW (Apopka Regional Reuse Of Water) and includes an existing 0.47 mgd AADF restricted access 51.6 acres spray field and a 19.4 mgd AADF slow-rate public access reuse system consisting of irrigation within the Reuse Service Area.

The City of Apopka may supplement its reclaimed water with stormwater from the North Shore Reclaimed Water Treatment Facility or three groundwater wells with a total capacity of 6.48 mgd. The North Shore Reclaimed Water Treatment Facility provides high-level disinfection to stormwater from the Lust Road Canal.

In addition, the Apopka public access reuse system receives public access quality reclaimed water from the Wekiva Hunt Club WRF, Altamonte Springs WRF, and the Orange County Northwest WRF, as described in the executed reuse agreements.

Project A-First is a cooperative project between the Cities of Altamonte Springs and Apopka to enhance their reclaimed water systems. One key aspect of this system consists of a reclaimed line linking the Altamonte Springs Project A-First reclaimed water system and the reclaimed water system of Apopka (ARROW).

CITY OF MOUNT DORA

Treatment Facilities

The City of Mount Dora owns and operates two wastewater treatment facilities (WWTF). The Mt Dora WWTF #1 is an existing 1.5 mgd AADF permitted capacity oxidation ditch domestic wastewater treatment plant consisting of influent screening, aeration, secondary clarification, chemical feed, filtration, and chlorination, with aerobic digestion of biosolids. In 2020, the average influent daily flow at this WWTF was 0.68 mgd.

The City of Mount Dora's newest WWTF, WWTF #2, is an existing 1.25 mgd AADF permitted capacity Modified Ludzak Ettinger oxidation ditch domestic WWTF consisting of flow equalization, influent screening, bioreactors with anoxic and aeration zones to provide nitrogen reduction, secondary clarification, chemical feed facilities, filtration, chlorination, and aerobic digestion of biosolids. In 2020, the average influent daily flow at this WWTF was 1.07 mgd.

Reuse Facilities

The WWTF #1's reuse system includes an existing 0.2 mgd AADF permitted capacity RIB system consisting of four RIBs. In addition, this facility can send up to 1.365 mgd AADF of reclaimed water to an existing slow-rate public access reuse system consisting of a Reuse Service Area and a 39 acre restricted public access spray field. The reuse system also includes a 1.558 MG lined reject storage pond and three lined wet-weather storage ponds with a total volume of 9.337 MG.

The WWTF #2's reuse system includes an existing 1.25 mgd AADF permitted capacity slow-rate public access system consisting of irrigation within the City's Reuse Service Area. The

service area and restricted access spray field are also used by the WWTF #1. The reuse system includes a 6.25 MG wet weather storage tank and a 1.25 MG reject storage tank. Substandard effluent is returned to the WRF for re-treatment. In 2020, the combined reclaimed water flow from both facilities was 1.95 mgd.

The City currently operates a reclaimed system converting 95% of influent wastewater influent wastewater to various locations that include mostly residential connections. The City currently sends approximately 5% of wastewater effluent to a sprayfield.

The City is continuing to meet the customer's irrigation needs with the help of a supplemental fresh groundwater well. The well is permitted at 0.66 mgd. The City also has an agreement with Apopka to purchase up to 1.0 mgd of reclaimed water. The reclaimed water interconnect to transmit the purchased water was completed in 2020.

The maximum reuse capacity of the two plants without the supplemental reuse well is 2.75 mgd. Currently, in Orange County, the Stoneybrooke subdivision has approximately 621 homes connected to the reclaimed system, with a maximum build out of 999 homes. The City does require dual piped distribution systems for all new subdivisions and requires that reclaimed water be used when available.

The City has a prospective alternate water project to build additional storage at the Thrill Hill site. The site, formerly a sand mine, would store roughly 120 million gallons of reclaimed water. Surplus water from the reclaim system would be sent to the site, which would be comprised of various storage pond cells, along with future stormwater from the Wekiva Parkway. Construction of the project is expected to lessen the dependency on the supplemental reuse well to keep the system stable. The project is currently in the permitting stage. Alternatively, the City is also exploring a mega reclaimed storage pond to developing thrill hill on the recently annexed landfill property. The mega reclaimed storage pond would hold excess reclaimed produced during the year from the City and Apopka for dryer times. The pond would be a minimum of 150 million gallons.

CITY OF OCOEE

Treatment Facilities

The City of Ocoee owns and operates the Ocoee WWTF which is a 3.0 mgd AADF permitted capacity conventional activated sludge domestic wastewater treatment plant consisting of influent screening, grit removal, aeration, secondary clarification, chemical feed, filtration, chlorination, and aerobic digestion of residuals followed by de-watering and drying/storage beds. In 2020, the average influent daily flow at the WWTF was 1.7 mgd. Information on reclaimed water flow for 2020 was not available.

Reuse Facilities

The City of Ocoee's reuse system includes an existing 0.35 mgd AADF permitted capacity RIB system consisting of two RIBs with a total wetted area of 10.7 acres. Also, the City of Ocoee has

an existing 3.14 mgd AADF slow-rate public access reuse system consisting of irrigation. Additionally, the City of Ocoee is permitted to supplement its irrigation reuse supply from OCU's Northwest Regional WRF or from the City of Orlando's Conserv II Facility as needed to meet irrigation demands.

TOHOPEKALIGA WATER AUTHORITY (TWA)

Treatment Facilities

Established in October 2003 by a special act of the Florida legislature, the Tohopekaliga Water Authority (TWA) is the largest provider of water, wastewater, and reclaimed water services in Osceola County. The TWA currently serves over 100,000 customers in Kissimmee, Poinciana, and unincorporated areas of Osceola and Orange County.

The TWA owns and operates 13 water plants and 8 wastewater plants while maintaining 1,452 miles of water mains, 1,290 miles of wastewater mains, 396 miles of reclaimed water mains and 444 wastewater pump stations. TWA treats and distributes approximately 37.5 mgd of potable water and reclaims 27 MG of wastewater each day.

Reuse Facilities

The TWA's 8 WRFs each operate independently for set geographic areas throughout the service area. The highly treated reclaimed water produced by the WRFs is distributed through 396 miles of reclaimed water distribution mains and used for irrigation customers or routed to the system's RIBs to recharge the groundwater. The waste solids from the treatment process, or biosolids, are processed by a third-party to kill pathogens and then spread over agricultural lands as fertilizer.

In addition to the continued use of reclaimed water, the TWA has committed to develop alternative water supply projects to supplement groundwater withdrawals, which is important because of the limitation on groundwater availability beyond present day demands and the fact that the TWA reclaimed water supplies are not adequate to meet all their projected water demands.

WEDGEFIELD UTILITIES

Treatment Facilities

Wedgfield Utilities (Pluris Wedgfield, Inc.) owns and operates the Wedgfield WWTF which is a 0.330 mgd AADF permitted capacity contact stabilization activated sludge domestic WWTF consisting of flow equalization, influent screening, contact aeration, re-aeration, secondary clarification, chemical feed facilities, two multimedia filters, and one Aqua-Disk membrane filter (0.500 mgd capacity). The facility also has twin chlorine contact tanks, a flow measuring tank, chlorine residual and turbidity analyzers and recorders, motorized diversion valves, and aerobic digestion of biosolids. Also, Wedgfield owns and operates a 0.92+ acre, 2.15 MG reject water storage pond with pump-back provisions to return reject water to the plant headworks for additional treatment and a 5+ acre, 7.18 MG lined wet weather reclaimed water storage pond. In 2020, the average influent daily flow at the WWTF was 0.222 mgd and the reclaimed water flow was 0.222 mgd.

Reuse Facilities

Wedgfield's reuse system includes existing 0.330 mgd AADF permitted capacity slow-rate public access system consisting of the Wedgfield Golf Course and three additional spray field irrigation areas around the treatment plant site. As a condition of their consumptive use permit (CUP), the utility is required to submit a reuse report every five years describing activities that have occurred to further implement the reuse of reclaimed water; the status of all reuse projects; and the total quantity of reclaimed water flows generated and the amount distributed by the permittee, the quantity of reclaimed water provided to customers or other entities for use in meeting irrigation demands, the acreage irrigated with reclaimed water, and the quantity of reclaimed water used to recharge the aquifer.

CITY OF WINTER GARDEN

Treatment Facilities

The City of Winter Garden owns and operates the Winter Garden WWTF which is a 4.75 mgd AADF design capacity advanced domestic WWTF consisting of 0.75 MG flow equalization, influent screening, grit removal, biological nutrient removal via a 5-stage Bardenpho process advanced wastewater treatment system. The facility has two aeration zones within the existing aerobic zone, chemical feed facilities for total suspended solids control, clarification, filtration, and disinfection by chlorination with thickening, aerobic digestion, and dewatering of biosolids. In 2020, the average influent daily flow at the WWTF was 3.89 mgd and the reclaimed water flow was 2.93 mgd.

Reuse Facilities

The City of Winter Garden's reuse system includes an existing 2.00 mgd AADF permitted capacity RIB system consisting of six RIBs with a total wetted area of approximately 5.54 acres within the 131 acre RIB site. The RIB site is in the Secondary Protection Zone of the Wekiva Study Area. The RIBs include an underdrain system that discharges to Lake Apopka via an existing 1.75 mgd AADF surface water discharge via a 9-foot concrete flume, thence to an unnamed ditch and through approximately one mile of wetlands and swamp to the lake. Additionally, the City of Winter Garden has a 4.75 mgd AADF permitted capacity slow-rate public access system that includes irrigation of 5,262 residences, 24 parks, and the Forest Lakes Golf Course.

The City of Winter Garden has also entered into an agreement with the City of Orlando and OCU to obtain reuse water from Water Conserv II to be used for residential and commercial landscape irrigation in the western portion of the service area. In 2019, The City received approximately 927 mgd through this connection.

APPENDIX C
Orange County Utilities
Water/Wastewater Schedule of Capital Improvements

In support of this Work Plan, an inventory of potable water, wastewater, and reclaimed water capital improvement projects is listed below. This is an excerpt from the Utilities portion of Orange County's most recent Adopted Budget (FY20). This is an extensive list of projects planned and implemented, budgeted over the next five years. As this Appendix serves as a reference, not all the projects in this excerpt have been listed elsewhere in the document.

Division: Water Utilities				
Expenditures by Category	FY 2018-19 Actual	FY 2019-20 Budget as of 3/31/20	FY 2020-21 Proposed Budget	Percent Change
Personal Services	\$ 9,888,207	\$ 10,270,610	\$ 11,231,078	9.4%
Operating Expenditures	27,059,980	29,834,958	31,808,206	6.6%
Capital Outlay	676,093	1,806,881	1,783,263	(1.3)%
Total Operating	\$ 37,624,280	\$ 41,912,449	\$ 44,822,547	6.9%
Total	\$ 37,624,280	\$ 41,912,449	\$ 44,822,547	6.9%
Authorized Positions	121	122	123	0.8%

Division: Water Reclamation Utilities				
Expenditures by Category	FY 2018-19 Actual	FY 2019-20 Budget as of 3/31/20	FY 2020-21 Proposed Budget	Percent Change
Personal Services	\$ 16,344,826	\$ 10,649,000	\$ 10,980,563	3.1%
Operating Expenditures	15,734,980	21,450,161	19,840,244	(7.5)%
Capital Outlay	683,247	967,615	752,832	(22.2)%
Total Operating	\$ 32,763,053	\$ 33,066,776	\$ 31,573,639	(4.5)%
Total	\$ 32,763,053	\$ 33,066,776	\$ 31,573,639	(4.5)%
Authorized Positions	128	130	131	0.8%

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