

ORANGE COUNTY

PLANNING DIVISION

2017-1-B-WSFWP-1

WATER SUPPLY FACILITIES WORK PLAN

2010 - 2030 COMPREHENSIVE PLAN

**BOARD OF COUNTY
COMMISSIONERS**

MAY 9, 2017

ADOPTION PUBLIC HEARING

PREPARED BY:

ORANGE COUNTY COMMUNITY, ENVIRONMENTAL
AND DEVELOPMENT SERVICES

PLANNING DIVISION
COMPREHENSIVE PLANNING SECTION





DATE: May 9, 2017
TO: Mayor Teresa Jacobs
-AND-
Board of County Commissioners (BCC)
FROM: Alberto A. Vargas, MArch., Manager Planning Division
THROUGH: Jon V. Weiss, P.E., Director
Community, Environmental, and Development Services Department
SUBJECT: Adoption Public Hearing – 2017-1 Regular Cycle Comprehensive Plan
Amendment – Water Supply Facilities Work Plan (WSFWP)

Please find attached a binder containing the staff report and associated back-up materials for the proposed 2017-1 Regular Cycle Comprehensive Plan Amendment. The adoption public hearing for this amendment was conducted before the Planning and Zoning Commission (PZC)/Local Planning Agency (LPA) on April 20, 2017, and is scheduled before the Board of County Commissioners (BCC) on May 9, 2017. One staff-initiated text amendment to the Comprehensive Plan will be considered at the May 9 meeting.

Amendment Summary

The 2017-1 **Regular Cycle-State-Expedited** Review amendment scheduled for consideration on May 9 is a staff-initiated text amendment. The text amendment may include changes to the Goals, Objectives, and/or Policies of the Comprehensive Plan.

The 2017-1 **Regular Cycle-State-Expedited** Review Amendment was heard by the PZC/LPA at a transmittal public hearing on December 15, 2016, and by the BCC at a transmittal public hearing on January 24, 2017. This Amendment has been reviewed by the Department of Economic Opportunity (DEO), as well as other state and regional agencies. On March 14, 2017, DEO issued a comment letter, which did not contain any concerns about the amendment undergoing the State-Expedited Review process. Pursuant to 163.3184, F.S., the proposed amendment must be adopted within 180 days of the comment letter. The Regular Cycle Amendment undergoing the State-Expedited Review process 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 July 2017, 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 Greg Golgowski, AICP, Chief Planner, Comprehensive Planning Section, at (407) 836-5624 or Gregory.Golgowski@ocfl.net.

PLANNING DIVISION
ALBERTO A. VARGAS, MArch., *Planning Manager*
201 South Rosalind Avenue, 2nd Floor ■ Reply To: Post Office Box 1393 ■ Orlando FL 32802-1393
Telephone 407-836-5600 ■ FAX 407-836-5862 ■ orangecountyfl.net

AAV/sw

Enc: 2017-1 Regular Cycle Amendment – Water Supply Facilities Work Plan (WSFWP) –
BCC Adoption Binder

c: Christopher R. Testerman, AICP, Assistant County Administrator
Joel Prinsell, Deputy County Attorney
Roberta Alfonso, Assistant County Attorney
Whitney Evers, Assistant County Attorney
Tad Parker, Chief Engineer, Utilities Division
John Smogor, Planning Administrator, Planning Division
Gregory Gologowski, AICP, Chief Planner, Planning Division
Olan D. Hill, AICP, Assistant Manager, Planning Division
Read File

2017 FIRST REGULAR CYCLE WATER SUPPLY FACILITIES WORK PLAN

AMENDMENTS TO THE 2010-2030 COMPREHENSIVE PLAN BOARD OF COUNTY COMMISSIONERS ADOPTION BOOK

INTRODUCTION

This is the Board of County Commissioners (BCC) adoption public hearing book for the proposed First Regular Cycle Amendment (2017-1) to the Future Land Use Map (FLUM) and Comprehensive Plan (CP). The adoption public hearing for this amendment was conducted before the Planning and Zoning Commission (PZC)/Local Planning Agency (LPA) on April 20, 2017, and is scheduled before the BCC on May 9, 2017.

This Regular Cycle Staff-Initiated Text Amendment scheduled for BCC consideration on May 9 was heard by the PZC/LPA at a transmittal public hearing on December 15, 2016, and by the BCC at a transmittal public hearing on January 24, 2017.

Please note the following modifications to this report:

KEY TO HIGHLIGHTED CHANGES	
Highlight	When changes made
Yellow	Following the LPA adoption public hearing (by staff)

The 2017-1 **Regular Cycle-State-Expedited** Review amendment scheduled for consideration on May 9 is a staff-initiated text amendment. The text amendment may include changes to the Goals, Objectives, and/or Policies of the Comprehensive Plan.

The **Regular Cycle-State-Expedited** Review Amendment has been reviewed by the Department of Economic Opportunity (DEO), as well as other state and regional agencies. On March 14, 2017, DEO issued a comment letter, which did not contain any concerns about the amendment undergoing the State-Expedited Review process. Pursuant to 163.3184, F.S., the proposed amendment must be adopted within 180 days of the comment letter. The Regular Cycle Amendment undergoing the State-Expedited Review process 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 July 2017, 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 Greg Gologowski, AICP, Chief Planner, Comprehensive Planning Section, at (407) 836-5624 or Gregory.Gologowski@ocfl.net.

2017-1 Regular Cycle Comprehensive Plan Amendments
Staff Initiated Comprehensive Plan Map and Text Amendments

Amendment Number	Sponsor	Description of Proposed Changes to the 2010-2030 Comprehensive Plan (CP)	Project Planner	Staff Rec	LPA Rec
2017-1-B-WSFWP-1	Utilities Division	Proposed text amendments to the Conservation, Potable Water, Wastewater, and Reclaimed Water Elements incorporating changes to the Orange County ten-year Water Supply Facilities Work Plan (WSFWP), and adopting the WSFWP by reference	Nik Thalmueller	Adopt	Deny (7-0)

ABBREVIATIONS INDEX:

ABBREVIATIONS INDEX: IND-Industrial; C-Commercial; O-Office; LDR-Low Density Residential; LMDR-Low-Medium Density Residential; MDR-Medium Density Residential; HDR-High Density Residential; PD-Planned Development; CONS-Wetland/Conservation; PR/OS-Parks/Recreation/Open Space; OS-Open Space; R-Rural / Agricultural; RS-Rural Settlement; GC-Growth Center; USA-Urban Service Area; WB-Water Body; ACMU-Activity Center Mixed Use; CP-Comprehensive Plan; CIE-Capital Improvements Element; CIP-Capital Improvements Program; FLUM-Future Land Use Map; FLUE-Future Land Use Element; TRAN-Transportation Element; GOPS-Goals, Objectives, and Policies; OBJ - Objective; WSFWP-Water Supply Facilities Work Plan Update; SR-State Road; AC-Acres

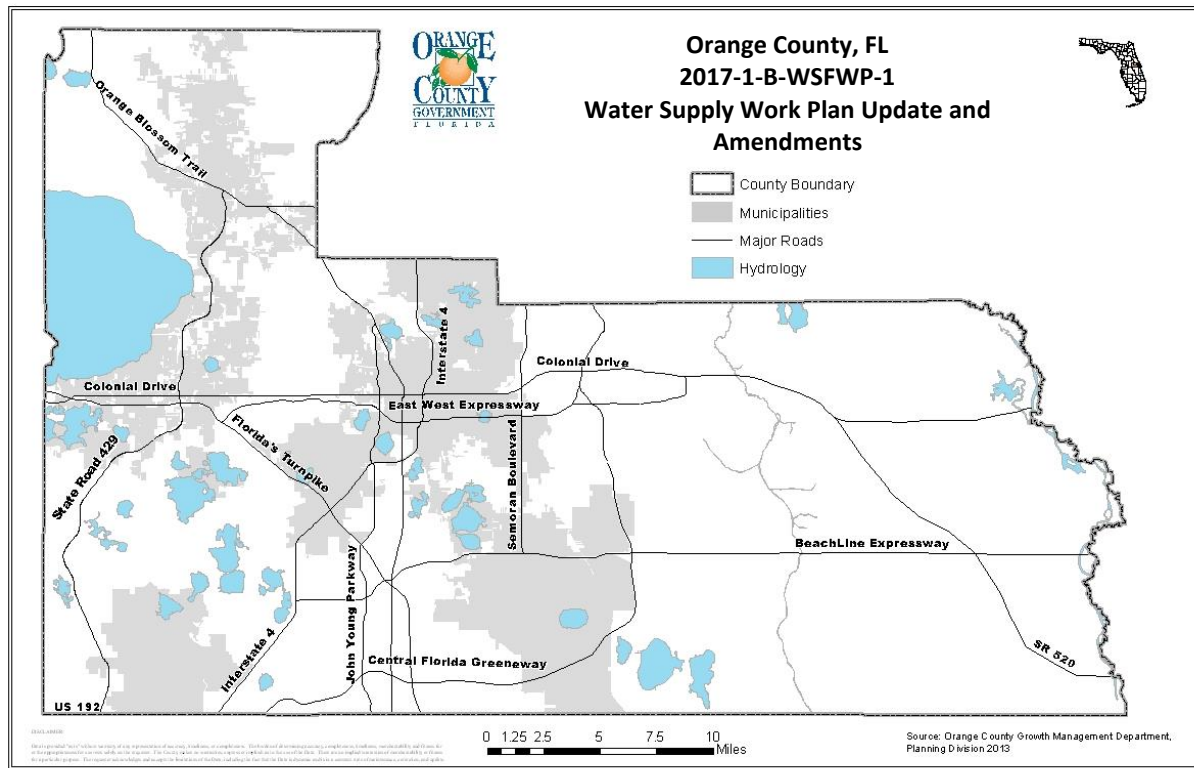
TABLE OF CONTENTS

INTRODUCTION **Tab 1**

REGULAR CYCLE AMENDMENTS.....**Tab 2**

Staff Initiated Regular Cycle Text Amendment.....**Tab 3**

Amendment			Page
1.	2017-1-B-WSFWP-1 Water Supply Facilities Plan	Text amendments to update the 10-Year Water Supply Facilities Work Plan	1



The following meetings and hearings have been held for this proposal:

Report/Public Hearing	Outcome
✓ Staff Report	Recommend Adoption
✓ LPA Transmittal	December 15, 2016 Recommend Transmittal (7-0)
✓ BCC Transmittal	January 24, 2017 Transmit (7-0)
✓ Agency Comments	April 2017
✓ LPA Adoption	April 20, 2017 Deny (7-0)
BCC Adoption	May 9, 2017

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: C1.11.11, PW1.1.1, PW1.2.5, PW1.2.11, OBJ PW3.1, PW3.1.1, PW3.1.6, PW3.1.7, PW3.1.8

Staff Recommendation

Make a finding of consistency with the Comprehensive Plan, determine that the Orange County Water Supply Facilities Work Plan Fiscal Year 2017/2018 to 2027/2028 and related text amendments are in compliance, and **ADOPT** Amendment **2017-1-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 long-range Water Supply Facilities Work Plan (Work Plan) identifying needed water supply facilities 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. In order to accommodate this Work Plan, several elements of the Comprehensive Policy Plan require amending. The elements affected are the Future Land Use, Potable Water, Wastewater, Aquifer Recharge, Conservation, Intergovernmental Coordination, and Capital Improvements.

The current 10-Year Water Supply Facilities Work Plan was last adopted by the Board of County Commissioners and covers the FY 2008 - FY 2018 period. 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. The 10-Year Water Supply Facilities Work Plan must identify alternative and traditional water supply development projects, and conservation and reuse activities needed to meet the projected future water demands. As of November 2015, 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 Central Florida Water Initiative Regional Water Supply Plan (CFWI RWSP) that includes the Orange County area. Therefore, Orange County must update the 10-Year Water Supply Facilities Work Plan. The CFWI RWSP contains an assessment of projected water demands and potential sources of water to meet these demands through 2035. It is intended to address the water supply related issues of the region and provide a framework to meet the water needs of the CFWI RWSP Area through 2035.

This amendment includes various text revisions to the Future Land Use, Potable Water, Wastewater, Conservation, Aquifer Recharge, Capital Improvements, and Intergovernmental Coordination elements' Goals, Objectives and Policies (GOPs) in support of the Work Plan.

B. Policy Amendments

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

C1.11.11 Orange County will continue to implement the water conservation efforts identified in the Work Plan. These efforts include:

- Continued staffing of the County's water conservation program and extensive public education program;
- Continued enforcement of ordinances and policies that limit irrigation days and hours, encourage Florida Friendly landscaping, require the use of ultra-low volume fixtures, and require rain sensor devices;
- Continued water conservation practices, such as participation in Florida Friendly Landscape workshops, water use audits, toilet retrofit program, showerhead exchange program, efficient irrigation nozzle replacement program, distribution system leak program, presentation and events, and participation in public awareness campaigns;
- Continued use of a tiered inclined block water conservation rate structure, including rate increases;
- Further assessment of existing water conservation program effectiveness and development of new program initiatives; and,
- Periodic review and update of existing water conservation and landscaping ordinances to promote additional improvements in water conservation.

PW1.1.1 Orange County shall review the Master Plan every five years 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, which are required to be updated at least every five years, to identify system deficiencies and, if necessary, implement a plan for correction. The Work Plan (~~Orange County Water Supply Facilities Work Plan, 2008~~ Orange County Water Supply Facilities Work Plan, Fiscal Year 2017/2018 to 2027/2028), 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.

PW1.2.5 When central water service from Orange County Utilities is required for development, the level of service standard shall be 275 gallons per day (average daily flow) per Equivalent Residential Unit. Flow demands for commercial, industrial or other special developments differing from the flow values established by the serving utility shall be established from

existing records or by estimated projections, using the best available data. These levels of service shall also be applied for planning purposes only to review Developments of Regional Impact (DRI) and Comprehensive Plan Future Land Use Map Amendments.

~~A. Timing of Future Treatment Facility Expansion. Orange County Utilities shall ensure that sufficient water treatment facility capacity is maintained. Once the maximum daily flow (MDF) equals or exceeds 75% of a system's permitted capacity or once the sum of current MDF plus future commercial MDF equals or exceeds 90% of permitted capacity, a report shall be presented to the Florida Department of Environmental Protection (FDEP) on the need to increase capacity and, if capacity needs to be increased, the method of increase, estimated cost and timing. The capacity report shall identify recommended improvements, improvement costs and the timing of such improvements. Facilities scheduled for design and construction, as identified by the capacity report, shall be considered for inclusion into Orange County's Five Year and Ten Year Capital Improvement Program. Facilities approaching build out shall be exempt from this requirement. Facilities approaching build out are defined to be built to the ultimate capacity required to accommodate all projected growth within the system's service area. (Added 12/00, Ord. 00-25, Policy 1.2.5-r)~~

A. The LOS standard OCU has adopted for planning and engineering of its water supply facilities is based on the Florida Department of Environmental Protection's (FDEP's) capacity analysis standards. OCU evaluates the need for water supply facility expansion over a ten year planning horizon if observed maximum day water demands are equal to or greater than 75% of the total permitted maximum day operating capacity of the water supply facilities. If the observed maximum day demand exceeds 75% of the total permitted maximum day operating capacity of the water supply facility, then OCU will be required to submit a Capacity Analysis Report to the FDEP in accordance with the requirements of Section 62-555.348 of the Florida Administrative Code (FAC).

In addition, OCU has developed WSF and Water Reclamation Facility (WRF) treatment capacity percentage based expansion criteria and schedule to address the requirements of Sections 62-555.348 and 62-600.405(8) of the FAC. The expansion criteria and schedule are as follows:

- WSF: When the MDD equals or exceeds 75% of maximum day treatment capacity, submit capacity analysis report.
- WRF: When the maximum 3-month ADF exceeds 50% of the permitted treatment, submit capacity analysis report.

- WSF/WRF: When the MDD / maximum 3-month ADF meets or exceeds 80% of the permitted treatment capacity, start request for proposals for consultant services for preliminary and final design.
- WSF/WRF: When the MDD / maximum 3-month ADF meets or exceeds 85% of the permitted treatment capacity, begin final design.
- WSF/WRF: When the MDD / maximum 3-month ADF meets or exceeds 90% of the permitted treatment capacity, the expansion needs to be in construction.

PW1.2.11 When central water service from private utilities or municipalities is required for development in unincorporated Orange County, the level of service standard shall be as listed below. (Added 12/00, Ord. 00-25)

UTILITY NAME	LOS	
City of Apopka		
Residential	227 gallons per day (gpd)/capita	
Nonresidential	200 per 1,000 square feet	
City of Casselberry	140 gpd/capita	
City of Eatonville	63 gpd/capita	
City of Kissimmee	114.4 gpd/capita	
City of Maitland	350 gpd/equivalent residential connection (erc)	
City of Mount Dora	135 gpd/capita	
Town of Oakland	300 gpd/equivalent residential unit (eru)	
UTILITY NAME	LOS	
City of Ocoee	300 gpd/ERC	
Winter Park Utilities	215 gpd/capita	
City of Winter Garden	350 gpd/eru	
Orlando Utilities Commission		
Land Use	Unit	Gallons/Day

Single Family Residential	Dwelling	360
Multifamily Residential	Dwelling	259
Office	Square Foot	0.15
Commercial	Square Foot	0.13
Hotel	Rooms	187
Industrial	Square Foot	0.22
Government	Square Foot	0.15
Hospital	Square Foot	0.22
Reedy Creek Utilities		
Land Use	Unit	Gallons/Day
Residential	dwelling	350
Hotel (general)	rooms	
Luxury/Deluxe	rooms	200
First Class	rooms	250
Moderate/Economy	rooms	200
Other Resort	Unit	150
Other Resort	Unit	300
Support/Office	square foot	
Retail/Commercial	square foot	0.25
Restaurant	seat	0.3
Theme Parks (general)	guest	25
Theme Parks (water)	guest	80
Central Florida Research Park	Not available	170

East Central Florida Services Inc. ¹	Not available
Florida Water Service	Not available
Lake Ola Homeowners	Not available
Park Manor Utilities	300 gpd/eru
Southern States Utilities	200 gpd/eru
Taft Water Association	140 gpd/capita
Utilities Inc. of Florida (Wedgfield Utilities Inc.)	615 gpd/eru
Zellwood Water Users	Not available
¹ This system serves the Deseret Ranch's pasture and citrus grove irrigation system and homes on ranch property. NOTE: Orange County Planning Division has distributed surveys to all private and public providers throughout the County in order for the above information to be updated.	

UTILITY NAME	LOS
City of Apopka	177 gallons per day (gpd)/capita
City of Casselberry	100 gpd/capita
City of Eatonville	100 GPD/ capita
City of Kissimmee	96 gpd/capita residential
	120 gpd per room hotel/motel
	0.1 gpd per gross square foot of floor area commercial
	10 gpd per student public or private schools
UTILITY NAME	LOS
City of Maitland	350 gpd/equivalent residential connection (erc)
City of Mount Dora	135 gpd/capita
Town of Oakland	119 gpd/capita
City of Ocoee	300 gpd/ERC
Winter Park Utilities	150 gpd/capita average usage
City of Winter Garden	350 gpd/eru
Orlando Utilities Commission	325 g/dwelling unit/day without reclaimed or 160 g/du/d with reclaimed
Land Use	
Single Family Residential	325 g/du/day without reclaimed or 160 g/du/d with reclaimed

<u>Multifamily Residential</u>	200 g/du/day
<u>Office</u>	0.15 g/sqft/ day
<u>Commercial</u>	0.13 g/sqft/ day
<u>Hotel</u>	187 g/room/ day
<u>Industrial</u>	0.22 g/sqft/ day
<u>Government</u>	0.15 g/sqft/ day
<u>Hospital</u>	0.22 g/sqft/ day
<u>Reedy Creek Utilities</u>	Does not have an adopted LOS per RCU
<u>Central Florida Research Park</u>	Not Available
<u>East Central Florida Services Inc.</u>	Not Available
<u>Florida Water Service</u>	Not Available
<u>Lake Ola Homeowners</u>	Not Available
<u>Park Manor Utilities</u>	Not Available
<u>Southern States Utilities</u>	200 gpd/eru
<u>Taft Water Association</u>	0.44 MGD
<u>Wedgefield Utilities Inc.</u>	356 gpd/capita
<u>Zellwood Water Users</u>	Not Available
¹ This system serves the Deseret Ranch's pasture and citrus grove irrigation system and homes on ranch property. NOTE: Orange County Planning Division has distributed surveys to all private and public providers throughout the County in order for the above information to be updated.	

OBJ PW3.1 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 is developed 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 surface water for potable supply and non-potable augmentation
- Investigate additional management and supply options such as ~~aquifer storage and recovery~~, reservoir storage, and stormwater reuse
- Utilize aquifer storage and recovery for supply management

PW3.1.1 The Work Plan shall be consistent with the potable water level-of-service (LOS) standards established in Policies PW1.2.5, ~~PW1.2.5.1~~ and PW1.2.11.

PW3.1.6 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.

- ~~Western Regional WSF/Wellfield Phase III (treatment plant expansion and new Lower Floridan aquifer wells) (CIS 1532).~~
- ~~Horizon West WSF/Wellfield (new treatment plant and wells) (CIS 1506).~~
- ~~Malcolm Road WSF/Wellfield (new treatment plant and wells) (CIS 1506).~~
- ~~Southern Regional WSF/Wellfield, Phase I (new plant and wells) (CIS 1498).~~
- ~~Eastern Regional WSF, Phases IIB and III (plant and wellfield expansions) (CIS 1497).~~
- ~~East Service Area Potable Water Storage and Repump Facility (CIS 1498).~~
- ~~East Service Area South Service Area Water Transmission Main Interconnection (CIS 1450 and 1508).~~
- 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 IIB 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).

PW3.1.7 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 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.

- ~~Northwest WRF Phase III Expansion (treatment capacity increase) (CIS 1435).~~
- ~~Northwest WRF RIB System Expansion (CIS 1496).~~
- ~~Northwest WRF Reclaimed Water Project (reclaimed water storage, pumping, distribution and capacity for reuse) (CIS 1496).~~
- ~~Southwest WRF, Phases I and II (new treatment plant, outside 5 year schedule) (CIS 1507)~~
- ~~Southwest Service Area Reclaimed Water Reuse System (reuse distribution system) (CIS 1542).~~
- ~~South WRF, Phase V Expansion (treatment capacity expansion) (CIS 1555).~~
- ~~South Service Area Reclaimed Water and Reuse System Expansion (CIS 1411).~~

- ~~Eastern WRF, Phases IVC, V, and Re-Rating (treatment capacity expansions) (CIS 1538).~~
- ~~Eastern Regional Reclaimed Water Distribution System (joint project with the City of Orlando).~~
- ~~East Service Area (a.k.a. Southeastern, Eastern WRF) Reclaimed Water Reuse System (expansion of reclaimed water pumping, storage, and distribution system facilities) (CIS 1483).~~
- 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)

PW3.1.8 Development of alternative water supply projects is a critical component of the 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.

- ~~St. Johns River/Taylor Creek Reservoir Water Supply Project (new regional, cooperative surface water supply) (CIS 1550). Funding for this alternative water supply project will be shared by Orange County, the other five project utility partners, the SJRWMD, and the SFWMD.~~
- ~~Kissimmee River Basin Lake Tohopekaliga Potable Water Supply Project (new regional, cooperative surface water supply at the conceptual phase; outside 5 year schedule of capital improvements). Funding for this alternative water supply project will be shared with other central Florida potable water utility partners, with additional cooperative funding from the state (CIS 1550).~~
- ~~St. Johns River at SR 46 Water Supply Project (conceptual surface water supply project, outside Work Plan planning horizon).~~
- ~~Aquifer Storage and Recovery (ASR) Pilot Well Project, a cooperative study with the SJRWMD (CIS 1550).~~
- 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

**ORANGE COUNTY
WATER SUPPLY FACILITIES WORK PLAN
FISCAL YEAR 2017/2018 TO 2027/2028**

Prepared for:

Florida Department of Economic Opportunity

Prepared by:

**Orange County Growth Management Department
Planning Division
201 South Rosalind Avenue, 2nd Floor
Orlando, Florida 32802**

May 9, 2017

CONTENTS

LIST OF FIGURES	ii
LIST OF TABLES	iii
1 INTRODUCTION	1
1.1 Background	1
1.2 Purpose	2
2 WATER SUPPLY SUMMARY	3
2.1 Orange County Political Jurisdictions	3
2.2 Potable Water Service Providers in Unincorporated Orange County	3
2.3 Reclaimed Water Service Providers in Unincorporated Orange County	4
2.4 Demand Projections	5
2.5 Existing Capacity Analysis	6
2.6 Future Water Supply Strategy	7
2.6.1 Efficient Use of Groundwater	8
2.6.2 Expansion of Reclaimed Water Reuse	8
2.6.3 Enhancement of Aquifer Recharge	10
2.6.4 Continuation of Water Conservation Efforts	10
2.6.5 Investigation of Aquifer Storage and Recovery	13
2.6.6 Development of Alternative Water Supplies	13
2.6.7 Regional Cooperation and Interlocal Agreements	14
2.6.8 Summary of Projected Future Water Needs and Sources	16
3 CAPITAL IMPROVEMENT WORK PLAN	17
3.1 Overview	17
3.2 Orange County Utilities	17
3.3 Orlando Utilities Commission	21
3.4 Other Providers in Unincorporated Orange County	22
4 REFERENCES	23
FIGURES	
TABLES	
APPENDICES	
A Potable Water Supply Facilities Serving Unincorporated Orange County	
B Reclaimed Water Provider Facilities Serving Unincorporated Orange County	
C Orange County Utilities Water/Wastewater Schedule of Capital Improvements	

LIST OF FIGURES

- 1 Orange County Municipalities and Water Management District Boundaries
- 2 Potable Water Providers and Service Areas in Unincorporated Orange County
- 3 Reclaimed Water Service Providers and Service Areas in Unincorporated Orange County

LIST OF TABLES

- 1 Existing Water Supply Facilities for Two Main Potable Water Providers in Unincorporated Orange County
- 2 Existing Permit Allocation Summary for Potable Water Providers in Unincorporated Orange County
- 3 Existing Water Reclamation Facilities for Two Main Wastewater/Reclaimed Water Providers in Unincorporated Orange County
- 4 Potable Water Demand Projections in Unincorporated Orange County Associated with the Two Main Providers, by Water Management District
- 5 Current Potable Supply Capacity and Projected Demand Analysis for Two Main Potable Water Providers Serving Unincorporated Orange County
- 6 Current Reclaimed Supply Capacity and Projected Demand Analysis for Two Main Reclaimed Water Providers Serving Unincorporated Orange County
- 7 Orange County Utilities Capacity-Related Capital Improvement Work Plan Summary

**ORANGE COUNTY
WATER SUPPLY FACILITIES WORK PLAN
Fiscal Year 2017/2018 to 2027/2028**

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 2015, the St. Johns River Water Management District (SJRWMD), South Florida Water Management District (SFWMD) and Southwest Florida Water Management District each adopted the Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP), 2015. The CFWI RWSP 2015 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 2035, 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 potential limitations on the continued use of traditional water supplies became increasingly apparent, the Legislature enacted bills in 2002, 2004, 2005, and 2011 to more effectively address the state's water supply needs 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 regional water supply plans 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 regional water supply plan 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 regional water supply plan. 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 project(s) selected by the local government from projects identified in the updated regional water supply plan(s), or the alternative project(s) proposed by the local government [s. 163.3177(6)(c), F.S.]
- Identify the traditional and alternative water supply 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 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 element, and additional revisions to other related CPP elements (e.g., Capital Improvement, Wastewater, Conservation, Aquifer Recharge, and Intergovernmental Coordination) will be recommended for consistency with the Work Plan. Policies regarding the specific Work Plan components can be found in PW3.1.1 through PW3.2.4 within the CPP. The Work Plan is intended to be a dynamic document, updated by the County every 5 years, within 18 months after the water management district governing boards approve updated regional water supply plans [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 5-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 is home to an estimated 1.24 million residents. 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.

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)
- East Central Florida Services
- FL Gov. Utility Authority
- Mount Dora (City of)
- Orange County Research and Development Authority
- (Central Florida Research Park)
- Reedy Creek Improvement District
- Tohopekaliga Water Authority
- University of Central Florida
- Wedgefield Utilities, Inc.
- Winter Garden (City of)
- Winter Park (City of)
- Zellwood Water Users

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's county line, mainly within the City of Orlando, 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 the majority 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. Reedy Creek Energy Services (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 16 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 alternative water supply sources are currently being explored, these potable water providers currently use Floridan aquifer groundwater as their primary source of water supply. 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 (e.g., 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 16 potable water providers in Orange County.

2.3 Reclaimed Water Service Providers in Unincorporated Orange County

Twelve 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)
- Wedgefield Utilities, Inc.
- 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 the majority of wastewater/reclaimed water service in unincorporated Orange County.

One other large utility, Reedy Creek Energy Services (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 seven significant reclaimed water service providers in unincorporated Orange County listed above operate numerous water reclamation facilities, 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 water reclamation facilities 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 roughly 30 percent between 2015 and 2030 (CFWI RWSP 2015). 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 2015. The Bureau of Economic and Business Research (BEBR)

medium population projection values were taken from the CFWI RWSP 2015 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-1 and Table E-1, respectively, of the CFWI RWSP 2015 Volume 1 Appendix.

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 2015 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 the large majority 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 2030; 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 108.7 mgd in 2015 to 139.3 mgd in 2030, an estimated increase of 28 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 2020). While the table indicates that OUC will have sufficient water treatment capacity through 2030, the combined existing infrastructure treatment capacity of OCU and OUC is not quite sufficient in 2030 to meet the entire County-wide demand. This deficit must be overcome through the planning, development, and permitting of additional facilities. As noted in the table, capital improvement projects are forecasted to offset this 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 2015 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, conservation, and implementation of the water supply and water resources development projects identified in this plan."

Dozens of specific, named alternative water supply (AWS) projects at various stages of development have been identified in the CFWI RWSP 2015 documents for potential implementation by water supply providers. Appropriate water resource development strategies, management techniques, and AWS projects delineated in the CFWI RWSP 2015 have been incorporated into the development of 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 and surface water for potable supply and non-potable system augmentation
- Investigate additional options such as aquifer storage and recovery, 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 described below in greater detail.

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, and, within the next few years, OCU is in the process of interconnecting the East Service Area to its South Service Area, effectively linking the entire OCU system. These two largest potable water distribution systems in Orange County also 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. In the event that one or more water supply facilities are out of service, other facilities can 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 water reclamation facilities 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 (PAR). The City of Orlando also reuses a significant percentage of reclaimed water produced at its three water reclamation facilities. 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 of the OCU service areas. Future, planned OCU projects include significant expansion of PAR 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 PAR 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 in order 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 PAR 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 Wastewater Policy WW2.1.7 will be required to connect to central wastewater where such facilities are available (Orange County Wastewater Policy WW2.1.8)

- 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 (Wastewater Policy WW2.3.2, Aquifer Recharge Policies AR1.1.12 and 1.1.13, Potable Water Policies PW2.2.8 and PW2.2.9)
- Continue to require by ordinance connection of all new developments to the reuse system, provided that service is available (Wastewater Policy WW2.3.3, Orange County Code Section 37-657)
- 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 (Wastewater Policy WW1.3.5)
- The County will implement feasible options to use all available reclaimed water supplies for beneficial applications (Wastewater Policy WW2.3.1)
- Investigate the feasibility of using a water-conserving rate structure for reclaimed water customers (Wastewater Policy WW2.3.4)

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 20 mgd of reclaimed water to rapid infiltration basins (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 utilize 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 5 full time employees and 2 part-time interns who develop and implement education, incentive and regulatory enforcement programs. Additionally, 7 contractual staff patrol our 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 Policy PW2.2.10)
- Encourage Florida Friendly landscape (Potable Water Policy PW2.2.11 and Conservation

Policies C1.11.3 and C1.11.4)

- Require ultra-low volume fixtures (Potable Water Policy PW2.2.13)
- Require rain sensor devices, mandatory for new construction and for extensive retrofits of existing sprinkler systems (Potable Water Policy PW2.2.11)
- 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 in regards to landscaping, water reclamation, and fixtures. Within these categories, Orange County operates the following conservation program:

- *Water Watch* water restriction program patrols handing out educational notices and enforcing codes
- *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 vouchers up to \$100 per toilet to replace existing high-flow toilets with ultra-low-flow toilet models; installed 2,200 since original toilet retrofit program inception in 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 Policy PW1.7.2.1)
- *Presentations and Events* at the mall, home owners 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, Florida Water Resource Conference, and the Florida Statewide Conservation Commission

In May 2008 Orange County adopted an updated, more stringent water conservation ordinance (Ordinance 2008-08 and 2010-02; Orange County Code Sections 37-601 through 37-611). Although the previous water conservation ordinance restricted landscape irrigation in Orange County to only two days per week with no irrigation allowed between 10 AM and 4 PM, the

revised ordinance defines the precise days of the week based on house address, providing for easier enforcement. The ordinance applies to all water users, even if they irrigate from a well or a pond. Certain uses, such as micro-spray irrigation, irrigation of new landscape, 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 Policies PW1.7.1 and PW1.7.2) and implement water conservation and shortage regulations including the specific restrictions of the SJRWMD and SFWMD during declared water shortages (Potable Water Policy PW2.2.12). The County maintains a five-tier inclined block rate structure that promotes water conservation. As of Fiscal Year 2015/2016, rates start out at \$1.07 per thousand gallons for the 0-3,000 gallon block and climb to \$11.69 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.

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 demands have decreased over 14 percent since 2004, far exceeding the City of Orlando's objective of reducing total per capita potable water demand by 7 percent between 2004 and 2015. At the same time, connections increased by nearly 10,500. OUC's gross per capita demand was reduced from 225 gallons per person per day in 2004 to 193 gallons per person per day in 2015. 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

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 completed a study of ASR feasibility assisted in the installation of an ASR well in the eastern part of the County (under capital improvement schedule [CIS] Project Number 1550) (Potable Water Policy PW3.1.8). Following the pilot testing period, the County was granted an operational permit (May 2016) for the storage of approximately 2 mgd, AADF of potable water, up to approximately 800 million gallons of total storage.

2.6.6 Development of Alternative Water Supplies

As discussed, the CFWI RWSP 2015 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 permit conditions, OCU is 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 (2026). To meet these permit requirements, OCU and OUC are currently in mediation with the City of Cocoa, Tohopekaliga Water Authority (TWA), East Central Florida Services, Inc., and SJRWMD to resolve competing CUP applications for withdrawals from the new St. Johns River/Taylor Creek Reservoir 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, 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 alternative water supply from this project. Many project delays have arisen, and the project is still in the planning stage. The permit will expire in 2027, and allocation will be contingent on renewal.

OCU is also partnering with the City of St. Cloud, the Tohopekaliga Water Authority, Polk County, and Reedy Creek Improvement District (collectively called the STOPR Group) in the development of 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 AADF 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 2023.

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 between all parties.

It has become apparent that this type of regional cooperation can be critical to the success of a project. OCU's SFWMD WUP 48-00134-W renewal process resulted in the formation of the STOPR Group mentioned above, which collaborated to complete their WUP applications to the SFWMD. 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 are working on on-going 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. The Intergovernmental Coordination Element has been significantly expanded as part of the CPP amendment process resulting from the County's 2007 Evaluation and Appraisal Report.

With regard to potable water, wastewater, and reclaimed water service, Orange County maintains the following main types of agreements, and continually reviews/seeks opportunities to update or create new agreements:

- *Territorial agreements*, defining utility service areas (Potable Water Policy PW1.6.1; 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 Policies PW1.2.12 and PW3.2.3; 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. (Supported by Potable Water Policy PW3.2.4 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, the University of Central Florida, 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, Tohopekaliga Water Authority, Orange County, Polk County, and Reedy Creek Improvement District 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.

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 Policy PW3.3.3)

- 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, in order 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 Policies PW1.2.12, PW3.2.3, PW3.3.1, PW3.3.2, and multiple policies under Objective PW2.2; Wastewater Policies WW3.2.1, WW3.2.3 and WW3.3.1; 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 Policies PW3.2.1 and PW3.2.3)

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 2030, 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 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 5-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 5-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. The majority of 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 capital improvement program 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 as a result 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 capital improvement program and in the County’s 5-year Capital Improvement Schedule (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 regional water supply plans.

The current 5-year CIS includes detailed project funding data for the Fiscal Year (FY) 2017 through FY 2021 period. Beyond the 5-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 (FY17) demonstrating planned project funding. The RWSP Volume II Appendix lists 150 additional proposed water supply project options (WSPOs) across the CFWI region. A few of these will be mentioned in this section. The County plans to allocate over \$750 million toward relevant water-related utilities capital improvement projects over the next five years. Although not yet committed, funding for the following 5 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 located 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 2017 through FY 2021 (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 SSA-ESA 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 23.4 mgd, AADF and wellfield capacity by approximately 8.0 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 1.8 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).
- 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 2022, 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 2017, 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)

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 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 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 (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.

3.3 Orlando Utilities Commission

As **Table 5** and **Table 6** indicate, OUC has sufficient supply to meet demands through 2030. In order to plan for demands in 2035 and beyond, 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 Orange County Utilities to utilize reclaimed water to meet a portion of the non-potable demands in OUC's service area
- Continue to work with regional partners to develop the SJR/TCR Project

OUC will continue to partner following alternative water supply (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.

- *St. Johns River/Taylor Creek Reservoir Water Supply Project.* Currently, OCU and OUC are formally mediating with the City of Cocoa, Tohopekaliga Water Authority (TWA), East Central Florida Services, Inc., and SJRWMD to resolve competing CUP applications for withdrawals from the new St. Johns River/Taylor Creek Reservoir 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, state or federal government. OUC has committed to receive at least 5 mgd, of new alternative water supply from this project. OUC has \$2 million budgeted in its 2017 5-year capital plan to pay for OUC's portion of permitting and initial design costs for the SJR/TCR Project.
- *Eastern Regional Reclaimed Water Distribution System.* 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 Water Reclamation Facility 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 in constructing the ERRWDS). And has paid the City over \$16.9 million dollars to complete plant improvements, construct reuse mains, booster pump stations, and a supplemental well. The remaining portion of the project, the Lake Nona storage and repump station, has been put on hold until it is needed when reuse demands increase. OUC has \$1.7 million budgeted in the 2017 5-year capital plan for its share of the costs to complete construction of the storage and repump station. ERRWDS transports reclaimed water from the Iron Bridge Regional Water Reclamation Facility to OUC's service area in Baldwin Park, the 436 corridor, and the southeast service area which includes the Orlando International Airport and Lake Nona. Completion of this system also 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 of their customer demands. Having more reclaimed water available to the OUC service area allows OUC to conserve potable groundwater to protect the environment and help meet future demands.
- *Project Renew.* As required by Condition #29 of the Consumptive Use Permit 3159 (CUP) issued by SJRWMD in 2014, OUC is required to implement a regional reuse program. The original project planned to provide 9.2 mgd of reclaimed water from the City of Orlando's Iron Bridge Water Reclamation Facility to Northwest Orange County to offset adverse impacts from OUC's pumping at the full CUP allocation of 109.2 mgd. Phase I of Project RENEW must provide at least 3 MGD of reclaimed water and must be

completed no later than October 8, 2020. Phase II of the project must provide the entire 9.2 MGD of reuse and must be completed no later than October 8, 2022. OUC has an agreement with the City of Orlando to provide reclaimed water for Project RENEW. OUC also has an agreement with the City of Apopka for accepting reclaimed water from Project RENEW.

The project will be re-evaluated in order 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 MFL prevention and recovery strategy. Updated engineering studies, which identify the chosen alternative for Project RENEW, must be submitted within 2 years after adoption of the MFL Prevention/Recovery Strategy for South Lake, Orange and Seminole Counties by the SJRWMD Governing Board. OUC has \$7.5 million budgeted in its 2017 5-year capital plan to complete the design and start construction of Project RENEW.

Other OUC potable water system capital improvement projects include:

- *Ozone Generator Replacement Program*, \$17.5 million in five year capital plan (2017-2021)
- *Other Water Production Costs*, \$15.7 million in five year capital plan (2017-2021)
- *Other Water Delivery Projects*, \$32.9 million in five year capital plan ((2017-2021)

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.

4 References

Barnes, Ferland and Associates, Inc., et. al. 2007. *Water Conservation Program Evaluation, Phase 2 Report*. Orlando, FL.

Carollo Engineers. 26 April, 2016. *Consulting Engineer's Report for Orange County Water and Wastewater Utility Revenue Bonds, Series 2016. Appendix E*. Winter Park, FL.

CFWI. 2015. *Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP): Volume I – Planning Document*. <http://cfwiwater.com>.

CFWI. 2015. *Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP): Volume IA – Appendices*. <http://cfwiwater.com>.

CFWI. 2015. *CFWI RWSP 2035 Water Resources Protection and Water Supply Strategies: Volume II – Solutions Strategies*. <http://cfwiwater.com>.

CFWI. 2015. *CFWI RWSP 2035 Water Resources Protection and Water Supply Strategies: Volume IIA – Appendices*. <http://cfwiwater.com>.

Liquid Solutions Group, LLC, and Parsons Brinckerhoff, Inc. 19 April 2016. *Orange County Utilities CUP No. 3317 Condition 42 10-Year Compliance Report*. Attachment 2: Water Conservation Program Information. Orlando, FL.

Orange County Planning Division. 30 March, 2015. *Comprehensive Plan 2010-2030: Goals, Objectives & Policies*. Orange County Government, Orlando, FL.

Orange County Planning Division. 2008. *Orange County Water Supply Facilities Work Plan, Fiscal Year 2007/2008 to 2017/2018*. Orange County Government, Orlando, FL.

FIGURES

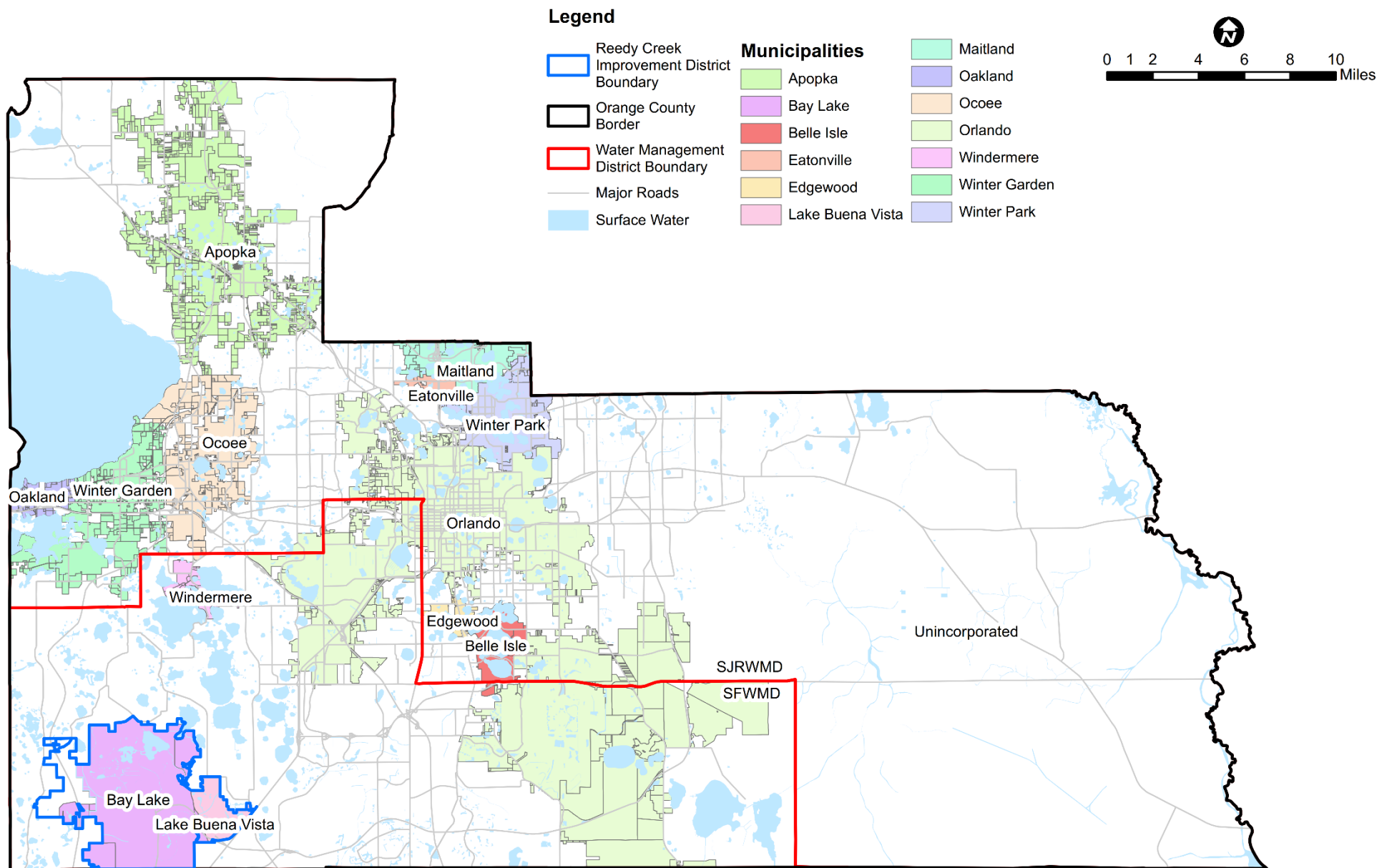


Figure 1: Orange County Municipalities and Water Management District Boundaries

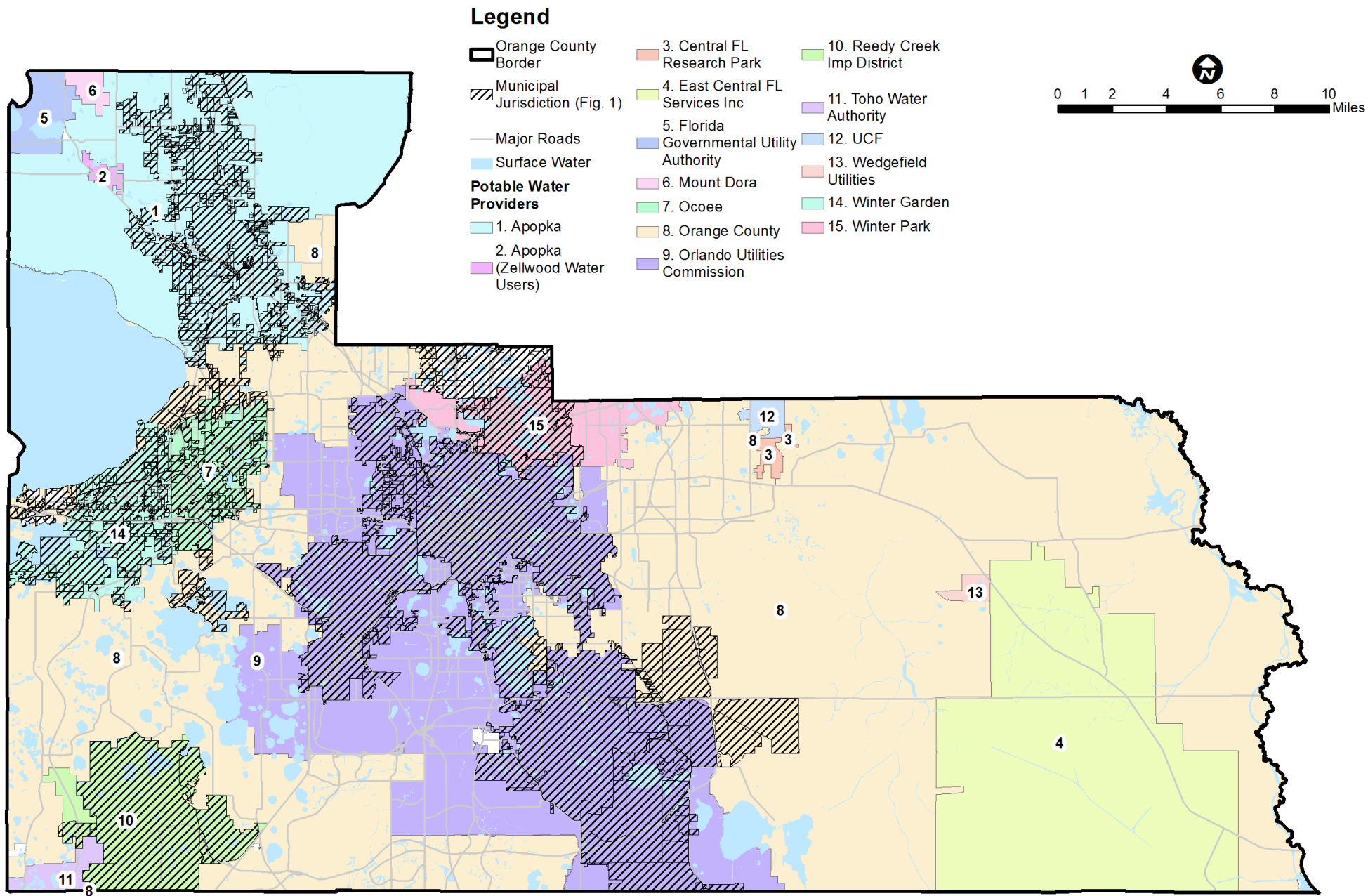


Figure 2: Potable Water Providers and Service Area Unincorporated Orange County

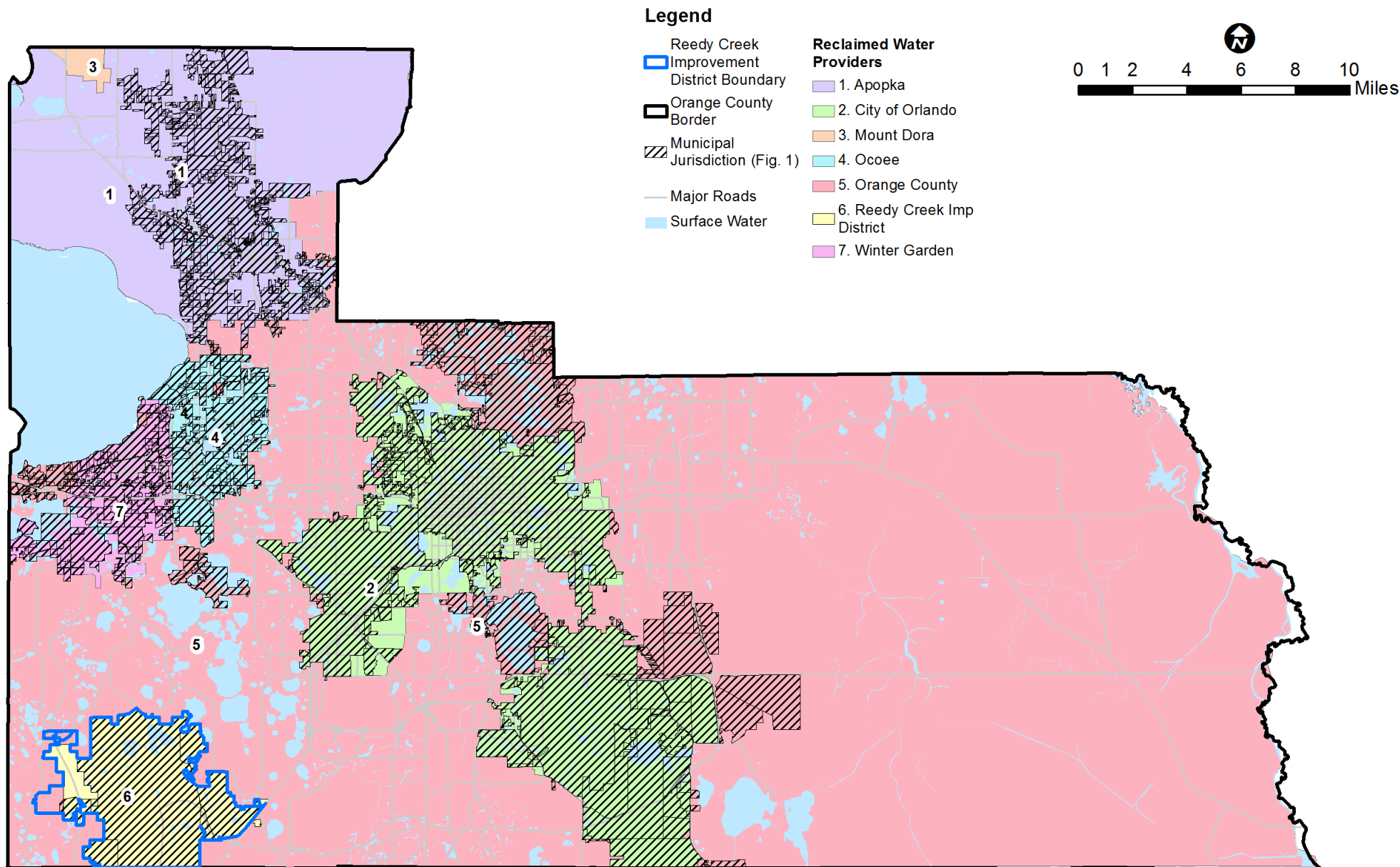


Figure 3: Reclaimed Water Service Providers and Service Areas in Unincorporated Orange County

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	4.5
Lake John Shores WSF	Upper Floridan	0.09	0.04	0.014	0.04
Oak Meadows WSF	Lower Floridan	5.3	2.9	7.7	3.9
Western Regional WSF	Lower Floridan	34.6	17.3	25.8	12.9
Total Existing Capacity - West/Southwest Service Area		55.2	27.8	46.1	23.3
Cypress Walk WSF	Upper Floridan	3.5	2.0	3.5	2.1
Hunters Creek WSF	Upper Floridan	10.1	5.9	6.4	3.8
Orangewood WSF	Upper Floridan	8.5	5.8	6.5	3.8
Southern Regional WSF	Lower Floridan	30.2	17.8	30.0	17.6
Southern Remote ⁽²⁾	Upper Floridan	5.2	3.1	0.0	0.0
Vistana Water WSF	Upper Floridan	8.6	5.1	4.8	2.8
Total Existing Capacity - South Service Area		66.1	38.9	51.2	30.1
Eastern Regional WSF	Upper Floridan	60.5	35.6	50.0	29.4
Econ WSF ⁽³⁾	Upper Floridan	10.1	8.5	0.0	0.0
Total Existing Capacity - East Service Area		70.6	44.1	50.0	29.4
Total Existing Capacity - OCU		191.9	110.8	147.3	82.6
ORLANDO UTILITIES COMMISSION (OUC)					
Pine Hills WSF	Lower Floridan	26.2	18.7	25.0	17.9
Kirkman WSF	Lower Floridan	17.3	12.4	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		180.6	129.0	169.7	121.2
OCU AND OUC COMBINED TOTAL CAPACITY		372.5	239.8	316.9	203.8

(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
Orange County Utilities	SJRWMD	3317	2006-2026	55.7	55.7	55.7
Orange County Utilities	SFWMD	48-00134-W	2007-2027	32.4	32.4	32.4
Orange County Utilities	SFWMD	48-00059-W	2002-2022	3.0	3.0	3.0
Orange County Utilities	SFWMD ⁽²⁾	49-02051-W	2011-2041	11.3	11.3	11.3
Orlando Utilities Commission	SJRWMD ⁽³⁾	3159	2004-2023	109.2	109.2	109.2
City of Apopka	SJRWMD	3217	2011-2031	16.0	16.0	16.0
FL Gov Utility Authority	SJRWMD	51073	2014-2034	0.13	0.13	0.13
East Central Florida Services	SJRWMD	3426	2014-2034	11.6	11.6	11.6
City of Mount Dora	SJRWMD	50147	2011-2031	5.9	5.9	5.9
City of Ocoee	SJRWMD	3216	2010-2026	4.88	4.88	4.88
Orange County Res & Dev Authority	SJRWMD	3300	2007-2027	1.32	1.32	1.32
Tohopekaliga Water Authority	SFWMD	49-00103-W	2007-2027	43.1	43.1	43.1
University of Central Florida	SJRWMD	3202	2014-2034	0.82	0.82	0.82
Wedgfield Utilities Inc.	SJRWMD	3302	2013-2033	0.46	0.48	0.50
City of Winter Garden	SJRWMD	3368	2005-2025	6.3	6.3	6.3
City of Winter Park	SJRWMD	7624	2005-2025	12.4	12.7	12.7
Zellwood Water Users	SJRWMD	3301	2004-2023	0.12	0.12	0.12
Total All Current Permits				314.6	314.9	314.9

(1) The maximum allocation included in the current permit is assumed to be renewed for permits expiring prior to 2020, 2025, or 2030.

(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.

(4) Although the portion of Southlake Utilities service area in Orange County is in the SFWMD, the withdrawal facilities are all located in Lake County and the allocation is permitted by the SJRWMD.

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)	2015 Average Daily Reclaimed Water Flow (mgd, AADF) ⁽³⁾	2030 Projected Reclaimed Water Flow (mgd, AADF) ⁽²⁾
ORANGE COUNTY UTILITIES (OCU)				
South WRF	43.0 ⁽¹⁾	70.8	35.8	39.3
Eastern WRF	19.0 ⁽¹⁾	33.5	18.6	27.6
Northwest WRF	10.3	12.5	5.8	6.2
Southwest WRF ⁽⁵⁾	NA	NA	0.0	2.7
Total - OCU	72.3	116.8	60.2	75.7
CITY OF ORLANDO				
Iron Bridge and Water Conserv I WRFs	47.5	66.5	26.3	32.8
Water Conserv II WRF	21.0	61.5	14.2	16.3
Total - Orlando⁽⁴⁾	68.5	128.0	40.5	49.1
OCU AND ORLANDO COMBINED TOTAL CAPACITY	140.8	244.8	100.7	124.8

(1) Does not include each plant's Phase V improvements which are ongoing.

(2) Adapted from CFWI Table E-1, Volume I Appendix projections for 2015 and 2035

(3) Actual flow data

(4) In addition to serving OUC customers, the City of Orlando serves reclaimed water to areas outside the OUC service area in portions of Seminole County and Orange County.

(5) Future facility

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⁾			
	2015	2020	2025	2030
ORANGE COUNTY UTILITIES				
OCU - (CUP 3317) SJRWMD	56.6	64.0	70.2	70.6
OCU - SFWMD Portion	21.5	23.4	24.6	31.4
Total Demand - OCU	78.1	87.4	94.9	101.9
ORLANDO UTILITIES COMMISSION				
OUC - (CUP 3159) SJRWMD	16.9	19.4	21.0	22.3
OUC - SFWMD Portion	16.9	19.4	21.0	22.3
Total Demand - OUC	33.8	38.8	42.0	44.5
OCU and OUC Combined Totals	111.87	126.2	136.9	146.4

(1) Adapted from the CFWI RWSP 2015, Appendix IA, Table A-2.

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	<u>Demand, Permit Allocation, or Capacity (mgd, AADF)</u>			
	2015 Baseline	2020	2025	2030
ORANGE COUNTY UTILITIES (OCU)				
Potable Water Demand - in Unincorporated Orange County	72.5	81.0	87.5	93.7
Potable Water Demand - Total Service Area ⁽¹⁾	78.1	87.4	94.9	101.9
Current Permit Allocation ⁽²⁾	102.4	102.4	102.4	102.4
Current Wellfield (Source) Capacity	110.8	110.8	110.8	110.8
Current Treatment Capacity	82.6	82.6	82.6	82.6
Additional Source Capacity (CIP Improvements) ⁽³⁾	0.0	8.0	17.0	27.0
Additional Treatment Capacity (CIP Improvements) ⁽³⁾	0.0	16.4	32.4	42.4
Permitted Surplus (Deficit)	-	15.0	7.5	0.5
Wellfield/Source Capacity Surplus (Deficit)	33.4	32.1	33.6	36.6
Treatment Capacity Surplus (Deficit)	4.7	11.8	20.3	23.3
ORLANDO UTILITIES COMMISSION (OUC)				
Potable Water Demand - Unincorporated Orange County ⁽⁴⁾	33.8	38.8	42.0	44.5
Potable Water Demand - Total Service Area ⁽¹⁾	82.4	94.6	102.4	108.6
Current Permit Allocation ⁽⁵⁾	105.0	109.2	109.2	109.2
Current Wellfield (Source) Capacity	129.0	129.0	129.0	129.0
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)	-	14.6	6.8	0.6
Wellfield/Source Capacity Surplus (Deficit)	46.6	34.4	26.6	25.4
Treatment Capacity Surplus (Deficit)	38.8	26.6	18.8	17.6
OCU AND OUC COMBINED TOTAL POTABLE WATER SUPPLY CAPACITY ANALYSIS				
Potable Water Demand - in Unincorporated Orange County	108.7	119.8	129.5	138.2
Potable Water Demand - Total Service Area	166.4	182.0	197.3	210.5
Current Permit Allocation	207.4	211.6	211.6	211.6
Current Wellfield (Source) Capacity	239.8	239.8	239.8	239.8
Current Treatment Capacity	203.8	203.8	203.8	203.8
Additional Source Capacity (CIP Improvements) ⁽⁶⁾	0.0	8.0	17.0	32.0
Additional Treatment Capacity (CIP Improvements) ⁽⁶⁾	0.0	16.4	32.4	47.4
Permitted Surplus (Deficit)	-	29.6	14.3	1.1
Wellfield/Source Capacity Surplus (Deficit)	73.4	65.8	59.5	61.3
Treatment Capacity Surplus (Deficit)	37.4	38.2	38.9	40.7

(1) Projections taken from Table A-1 of 2015 Final CFWI RWSP, Volume IA. 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.

(2) OCU's CUP & WUP expire in 2026 & 2027, respectively. 2030 allocation is assumed to remain the same as end of permit allocations.

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

(4) Assumes 41% of OUC demand is in unincorporated Orange County based on the proportion of City population to total OUC population in 2015.

(5) OUC CUP expires in 2023. Allocation for 2025 and 2030 is assumed to remain the same as end of permit allocation.

(6) Includes OUC's planned 5.0 mgd, AADF share of St. Johns River/Taylor Creek Reservoir 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	<u>Demand, Permit Allocation, or Capacity (mgd, AADF)</u>			
	2015 Baseline	2020	2025	2030
ORANGE COUNTY UTILITIES (OCU)				
Public Access Reuse Demand ⁽¹⁾	38.6	44.1	48.5	52.8
Minimum Wetland Hydration and Required RIB Flow ⁽¹⁾	1.4	1.4	1.4	1.4
Reclaimed Water Demand - Total Service Area ⁽¹⁾	40.0	45.5	49.9	54.2
Current Permitted Treatment Capacity ⁽²⁾	72.3	72.3	72.3	72.3
Current Permitted Reuse System Capacity ⁽²⁾	116.8	116.8	116.8	116.8
Reclaimed Water Supply Available ⁽³⁾	60.2	65.4	70.5	75.7
Additional Treatment Capacity (CIP Improvements) ⁽⁴⁾	-	18.0	24.0	29.0
Additional Reuse System Capacity (CIP Improvements) ⁽⁴⁾	-	11.5	11.5	11.5
Treatment Capacity Surplus (Deficit)	32.3	44.8	46.4	47.1
Reuse System Capacity Surplus (Deficit)	76.8	82.8	78.4	74.1
Available Reclaimed Supply Surplus (Deficit)	20.2	19.9	20.6	21.5
CITY OF ORLANDO				
Public Access Reuse Demand ⁽⁵⁾	16.2	19.5	22.3	22.5
Minimum Wetland and RIB Flow Targets ⁽⁵⁾	16.0	16.0	16.0	16.0
Reclaimed Water Demand - Total Service Area ⁽⁵⁾	32.2	35.5	38.3	38.5
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
Additional Reuse System Capacity (CIP Improvements)	-	0.0	0.0	0.0
Treatment Capacity Surplus (Deficit)	36.3	33.0	30.2	30.0
Reuse System Capacity Surplus (Deficit)	95.8	92.5	89.7	89.5
Available Reclaimed Supply Surplus (Deficit)	8.3	7.9	7.9	10.6
OCU AND CITY OF ORLANDO COMBINED TOTAL RECLAIMED WATER CAPACITY ANALYSIS				
Reclaimed Water Demand - Total Service Area	72.2	81.0	88.2	92.7
Current Permitted Treatment Capacity	140.8	140.8	140.8	140.8
Current Permitted Reuse System Capacity	244.8	244.8	244.8	244.8
Reclaimed Water Supply Available	100.7	108.8	116.7	124.8
Additional Treatment Capacity (CIP Improvements)	0.0	18.0	24.0	29.0
Additional Reuse System Capacity (CIP Improvements)	0.0	11.5	11.5	11.5
Treatment Capacity Surplus (Deficit)	68.6	77.8	76.6	77.1
Reuse System Capacity Surplus (Deficit)	172.6	175.3	168.1	163.6
Available Reclaimed Supply Surplus (Deficit)	28.5	27.8	28.5	32.1

(1) OCU projection estimates.

(2) Refer to Table 3.

(3) Adapted from CFWI Table E-1, Volume I Appendix projections for 2015 and 2035.

(4) Refer to Table 7.

(5) 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)															
	2015 Baseline	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
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	110.8	110.8	112.6	114.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8	118.8
Existing Wellfields ⁽²⁾	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8	110.8
Oak Meadows Well OM-5 (WSA) (CIS 1532)			1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Western Regional WSF 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
Malcolm Road Wellfield, Phase I (SWSA) (CIS 1506)					4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total WSF Treatment Capacity	82.6	82.6	82.6	82.6	99.0	99.0	99.0	99.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0
Existing Water Supply Facilities ⁽²⁾	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6	82.6
Eastern Regional WSF, Phase IIIB (ESA) (CIS 1554)					12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4
Malcolm Road WSF, Phase I (SWSA) (CIS 1506)					4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Western Regional WSF, Phase IIIB (WSA) (CIS 1532)								7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
RECLAIMED WATER SUPPLY PROJECT CAPACITY																
Total WRF Treatment Capacity	72.3	72.3	72.3	77.3	90.3	90.3	90.3	91.3	91.3	91.3	96.3	96.3	101.3	101.3	101.3	101.3
Existing Water Reclamation Facilities ⁽³⁾	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3	72.3
Eastern WRF, Phase V (ESA) (CIS 1538)				5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
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
Northwest WRF, Phase IIIB (CIS 1435)								1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Southwest WRF, Phase I (SWSA) (CIS 1507)											5.0	5.0	5.0	5.0	5.0	5.0
Eastern WRF, Phase VI (ESA) (CIS 1538)												5.0	5.0	5.0	5.0	5.0
Total Reuse System Capacity	116.8	116.8	119.3	119.3	119.3	128.3	128.3	128.3	128.3	128.3	128.3	128.3	128.3	128.3	128.3	128.3
Existing Reuse Systems ⁽³⁾	116.8	116.8	116.8	116.8	116.8	116.8	116.8	116.8	116.8	116.8	116.8	116.8	116.8	116.8	116.8	116.8
NWRF RWM Extension to Apopka (WSA) (CIS 1435) ⁽⁴⁾			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
East/SE RW Reuse System 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	9.0
ALTERNATIVE WATER SUPPLY PROJECT CAPACITY																
Total AWS Source/Treatment Capacity	0.0	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
Cypress Lake Wellfield (STOPR) (CIS 1550-08) ⁽⁵⁾									9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
SJR/TCR Surface Water Supply (ESA) (CIS 1550)																10.0

(1) Refer to Table 2.

(2) Refer to Table 1.

(3) Refer to Table 3.

(4) Until constructed and permitted, capacity values shown for reuse distribution system projects are best estimates.

(5) Orange County's allocation is approximately 9 mgd, AADF finished water, once completed 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	Tohopekaliga Water Authority
Orlando Utilities Commission	
Apopka (City of)	
East Central Florida Services	University of Central Florida
FL Gov. Utility Authority	Wedgfield Utilities, Inc.
Mount Dora (City of)	Winter Garden (City of)
Ocoee (City of)	Winter Park (City of)
Orange County Research and Development Authority	Zellwood Water Users
(Central Florida Research Park)	

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 and the Orlando Utilities Commission, which are the two largest providers and represent nearly all of 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 RCID) is a significant water supplier, but provides less than 0.2 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 of these potable water providers currently use the Floridan aquifer as their primary source of water supply.

ORANGE COUNTY UTILITIES (OCU)

Facilities

The Orange County Utilities (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 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 11 water treatment facilities, four of which are located in the SJRWMD and 7 in the SFWMD. Potable water is currently supplied to these treatment facilities by 49 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 2015 was approximately 58.4 million gallons per day (mgd) across over 141,000 accounts, serving the needs of nearly 575,000 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

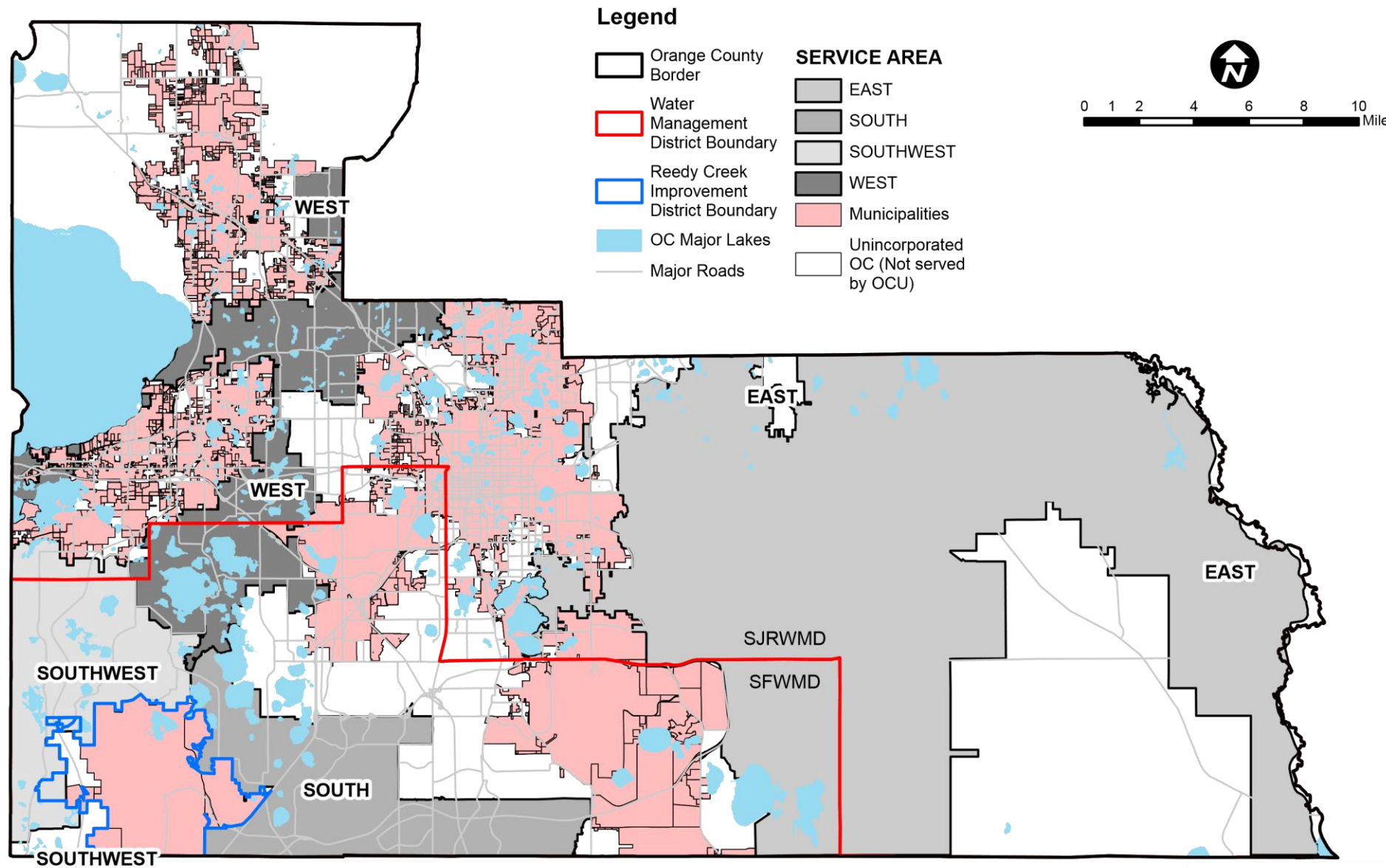
Eastern Regional WSF
Western Regional WSF
Oak Meadows WSF
Lake John Shores WSF

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, 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.

Currently, the Southwest Service Area is served by the CR 535 WSF, interconnects to other OCU service areas, or by wholesale agreement with the Tohopekaliga Water Authority. The Malcolm Road wellfield and WSF (permitted by the SJRWMD) is also planned to serve this area.



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 13, 2026

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(2006-2026)</i>		
Eastern Regional, Econ, and Bonneville ⁽¹⁾	East	35.2
Western Regional, Oak Meadows, Malcolm Rd ⁽²⁾	West / Southwest	22.5
Lake John Shores	West	0.01
Subtotal CUP # 3317 (Maximum combined allocation) ⁽³⁾		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 ⁽⁴⁾	STOPR	11.25
Subtotal WUP # 49-02051-W		11.25

WSF	Service Area	Groundwater Allocation (mgd, AADF through permit expiration)
SFWMD WUP # 48-00059-W (2002-2022)		
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) Malcolm Road WSF is a future facility in the Southwest Service Area.
 (3) CUP No. 3317 total allocation is less than the sum of the individual maximum annual allocations per service area.
 (4) 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, 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 RIB Project and 0.4 mgd, AADF of aquifer recharge from the Northwest WRF RIB Expansion Project (*Condition 28*)

Develop the St. Johns River/Taylor Creek Reservoir 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 must 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 St. Johns River/Taylor Creek Reservoir 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. (*Condition 25*)

The County also has to submit documents similar to 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:

- Orlando Utilities Commission (OUC)
- City of Apopka
- City of Cocoa
- Econ Utilities (Wedgfield Utilities / Utilities, Inc.)
- City of Maitland
- City of Mount Dora
- City of Ocoee
- Reedy Creek Improvement District
- Southlake Utilities
- Tohopekaliga Water Authority (City of Kissimmee)
- University of Central Florida
- City of Winter Garden
- City of Winter Park

OCU has a number of 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
Tohopekaliga Water Authority	Tohopekaliga Water Authority can provide interim or wholesale water service to OCU in portions of the Southwest Service Area
City of Winter Garden	Winter Garden can provide wholesale water service to the Magnolia Woods and Partlow Acres subdivisions in the West Service Area
Orlando Utilities Commission (OUC)	OUC can provide wholesale or interim water service to the Corrine Terrace, Daetwyler Shores (through 2019) and Lake Conway areas of the OCU East and South Service Areas, numerous special service connections to customers inside OCU's territorial boundary that are not supplied by OCU, and emergency interconnects
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
City of Ocoee	Ocoee has an emergency interconnect agreement, and Ocoee Pines is served through a wholesale agreement with OCU.
Reedy Creek Energy Services	RCES can provide wholesale water service to Flamingo Crossings and Northeast Resort Parcel
Seminole County	Emergency potable water interconnect agreements for Maitland/Bear Lake
Utilities, Inc. of Florida	OCU can provide wholesale water service to David Shores

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, executed in 2007 between the City of St. Cloud, Tohopekaliga Water Authority, Orange County, Polk County, and Reedy Creek Improvement District for collaboration in implementing water resource monitoring and compliance requirements of their jointly issued water use permits from the SFWMD

ORLANDO UTILITIES COMMISSION (OUC)

Facilities

Orlando Utilities Commission (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.

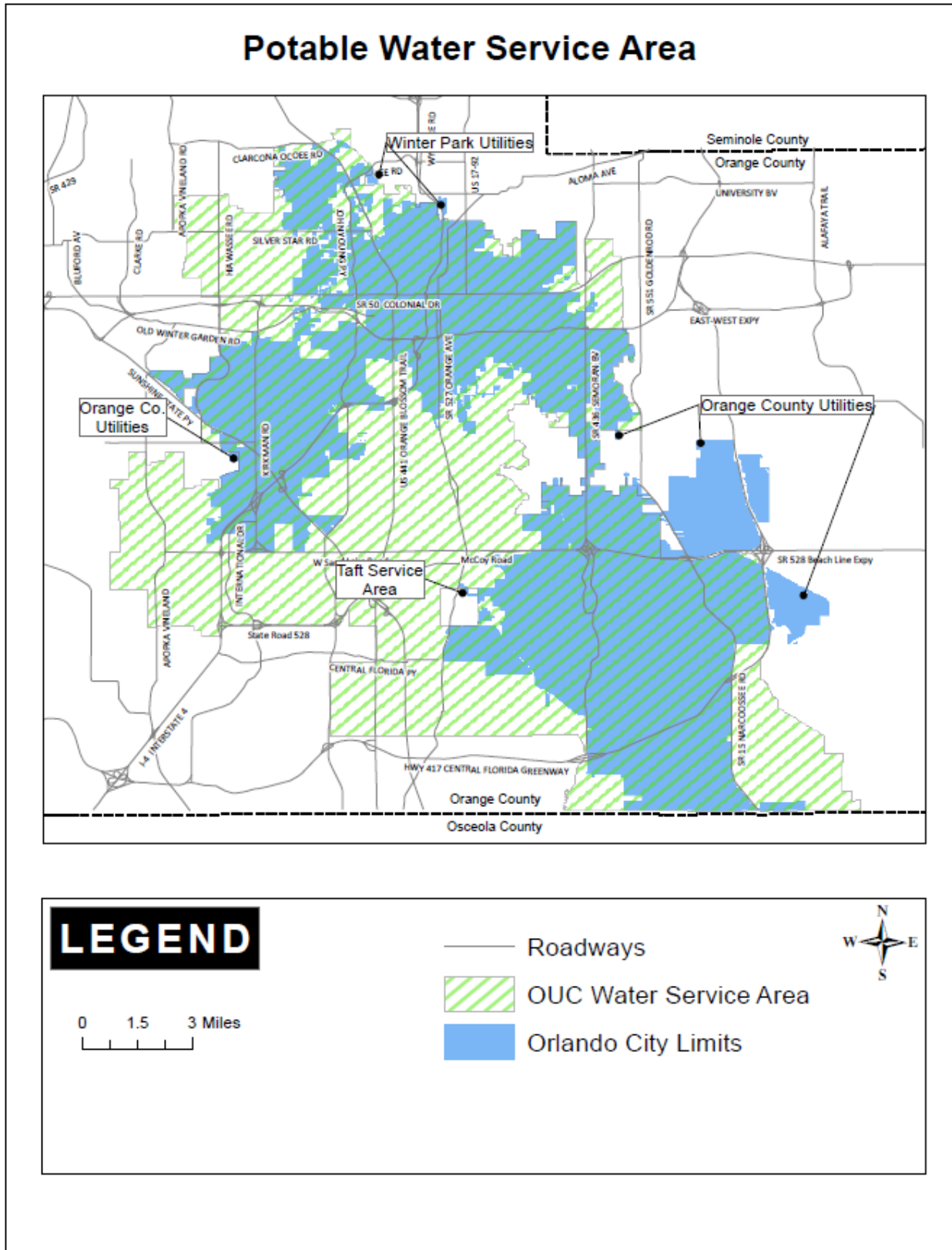


Figure A.2. Orlando Utilities Commission Potable Water Service Area

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 in order 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 Orange County Utilities 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.

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 of 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 ERP permits to OUC, and to enforce OUC's CUP throughout the 20 year duration of the permit. OUC's permit allocates 109.2 mgd of groundwater from the Lower Floridan Aquifer in 2023. In addition to the 109.2 mgd system-wide limitation on groundwater withdrawals, the CUP limits withdrawals at each individual water supply/treatment 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. It requires that OUC develop at least 5 MGD of water from an alternative supply source, such as Taylor Creek Reservoir, the St. Johns River, or other sources acceptable to the SJRWMD. The agreement anticipates that OUC will pursue alternative water supply development jointly with Orange County, which has a similar obligation under the

agreement. OUC also agreed that it would not challenge permits that Orange County has pending with both SJRWMD and SFWMD. The second agreement was signed by OUC and Lake County. Under this agreement, OUC agrees to give Lake County an option to participate in any alternative water supply development project it pursues. This will assure Lake County a place “at the table” as alternative water supply development is discussed in Central Florida in the future.

The 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 on all sides by the Orange County Utilities 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 68 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. This area of unincorporated Orange County, however, is not densely populated and has only a minor amount of growth projected within the planning horizon.

The City owns five Water Treatment Plants (WTPs) including two WTPs that were purchased from Orange County. An additional water treatment plant (Southwest) is planned for the future. The wells associated with these treatment plants are located in northwest Orange County. The drinking water source taps the Lower Floridan Aquifer.

The current water distribution system, not including on-site piping at the treatment plants, consists of pipes ranging in diameter from 3 to 36-inches, fire hydrants, and isolation valves. There are currently no elevated storage facilities serving the distribution system. There are a total of six ground storage tanks within the City serving the distribution system.

Permits

The City has a single Consumptive Use permit from the SJRWMD for its potable water supply system. CUP #3217 is dated September 13, 2011 with a maximum ADF of 16.0 mgd in 2011. The maximum Annual Use is 5840.0 million gallons in Year 2011 and the permit expires September 12, 2031.

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's service area.

EAST CENTRAL FLORIDA SERVICES

Detailed facility information was not provided for this entity. Therefore, certain assumptions of existing facilities were made based on the previous Work Plan and other publically available data.

Facilities

This private water provider serves the water needs of a large cattle ranch (Deseret Ranches of Florida) in Brevard, Orange and Osceola Counties approximately 218,144 acres in size. The ranch has existed for a number of 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 days 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).

There are currently 224 existing wells throughout the property and two additional wells were constructed at the church camp. The majority of the wells taps the Upper Floridan aquifer, with wells into the Surficial aquifer for household use.

Permits

CUP # 3426 issued on February 12, 2014; Maximum annual groundwater withdrawal of 8,140 mgy(22.32 mgd) for irrigation of pasture, 33.48 mgy (.09 mgd) for watering 7,647 livestock, 279.19 mgy (0.765 mgd) for dewatering at two borrow pits (through February 14, 2017), 140.84 mgy (0.39 mgd) surface water withdrawal from L-73 canal for citrus irrigation and freeze protection; Average daily 16.41 mgy (0.04 mgd) for household use; 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

Florida Governmental Utility Authority (FGUA), a private utility, owns and operates the Tangerine WTP – a category V, class C treatment facility in northwest Orange County. FGUA provides service to approximately 320 customer accounts (840 users). The Tangerine Water System includes 2 supply wells and a .02 million gallon hydropneumatic tank. The wells have a total design capacity of .85 mgd. Water is pumped from the wells, treated by hypochlorination, and stored in the tank for use.

Permits

CUP # 51073 dated 2014, maximum annual withdrawals for all uses within the site Tangerine Park must not exceed 46.36 million gallons (0.127 mgd). Permit expires February 25, 2034.

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 water supply and distribution system that provides service to most areas of the City and some unincorporated areas of Lake County. The City also has an 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 the city limits, particularly within the Orange County portion of the service area where the 20-year projection calls for approximately 10,300 units to be completed.

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 19,000 acres. 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 at the newly completed WTP#2. Both are located in Lake County. The two wells at the Dora Pines water treatment plant were plugged and abandoned per the new consumptive use permit. The Dora Pines plant is no longer an active water treatment plant. The lower Floridan

well in Orange County was cancelled as part of the consumptive use permit negotiations and two new wells were drilled in Lake County at WTP#2.

The 2015 population of the service area was estimated at 21,611, and the 2030 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 71 percent of the current potable water use is under the residential use classification (single-family and multifamily). Approximately 12 percent of the water use is by commercial use consisting primarily of potable water supply for small businesses, professional offices, churches, and restaurants, 12 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

CUP # 50147: Permit issued on August 9, 2011; average daily 5.9 mgd; maximum annual 2,146.93 million gallons for an estimated population of 31,909 in 2030; expires 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

Detailed facility information was not provided for this City. Therefore, certain assumptions of existing facilities were made based on the previous Work Plan and other publically available data.

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 is currently developing utility infrastructure to serve Northwest Ocoee. This area falls within unincorporated Orange County of the City's Joint Planning Area. However, only part of the northwest sector falls within the City's utility service boundary area.

The City of Ocoee currently provides potable water service from two existing water treatment plants 1) Forest Oaks Plant and 2) the South Plant. The water source for the existing treatment plants is groundwater from the Floridan Aquifer.

The Forest Oaks Plant has 4 existing wells for public supply: three from the Lower Floridan and one from the Upper Floridan. The plant contains 2 storage tanks with a combined capacity of 1.07 MGD.

The South Plant in the southern portion of the service area has two 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 Plant contains 2 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. The plants can process up to 9.5 mgd of water during peak months, if necessary.

Permits

The City of Ocoee CUP # 3216 is dated November 17, 2010. The maximum ground water withdrawals shall not exceed 4.88 mgd AADF (1,781.2 mgy) from the present time through permit expiration, for a projected population of 36,580 in 2026. The permit expires on November 15, 2026.

The City of Ocoee is in the process of renewing its Consumptive Use Permit (new CUP # 3216). The application was submitted to the SJRWMD on December 6, 2006 and request for additional information issued by the district on January 3, 2007.

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 (CFRP) is located approximately 10 miles east of downtown Orlando and south from the adjacent University of Central Florida (UCF) in Orange County. The CFRP is a relatively large high-technology center occupied by industrial complexes, research facilities, commercial businesses, a 199-room hotel and a 24-unit condominium. The total property area (service area) consists of 744 acres. As of August 2016, there were 59 buildings constructed within the park which provide approximately 3.9 million square feet of total building area.

The Orange County Research and Development Authority owns a 1.34-acre water treatment plant located within the property boundaries of the CFRP. 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

CUP # 3300: Permit issued on August 7, 2007, 479.98 million gallons per year (1.315 mgd, AADF) of groundwater to supply a 744 acre research park with an estimated population of 31,588, 69.72 mgy (0.191 mgd AADF) of surface water and/or reclaimed water for landscape irrigation and 128 mgy (0.351 mgd) of groundwater as emergency back-up for UCF; 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 in order to meet an emergency situation. The use is metered and the District granted an annual allocation of 128 million gallons per year (mgd) (0.351 mgd, AADF) for emergency backup use in the current permit.

TOHOPEKALIGA WATER AUTHORITY (TWA)

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. TWA currently serves 93,000 water, 87,000 wastewater and 14,000 reclaimed water customers in Kissimmee, Poinciana, Polk County 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 15 water plants and 8 wastewater plants while maintaining 1,304 miles of water mains, 1199 miles of wastewater mains, 326 miles of reclaimed water mains, and 394 wastewater pump stations. TWA treats and distributes approximately 34 million gallons of potable water and reclaims 23 million gallons of wastewater each day.

Under the special act, the service area of the TWA includes the City of Kissimmee and unincorporated areas of Osceola County, with the exception of Reedy Creek Improvement District and the City of St. Cloud.

TWA water facilities include 15 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. Water is distributed through 1,304 miles of water mains. Raw water supply wells currently pump an average of 34 million gallons per day to the 15 water treatment plants located throughout the service area.

The utility is projected in the RWSP to serve approximately 211,671 persons in the year 2020 across its service area. With the 2007 renewal modification of its SFWMD permit, TWA will continue potable water withdrawals from the Upper Floridan Aquifer via 37 existing withdrawal facilities and six additional withdrawal facilities. The December 2013 modified permit, combining the Poinciana WUP, lists 72 existing wells and 17 proposed wells.

Recognizing the need to develop alternative water supplies, 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

In 2007, TWA obtained renewal of its Water Use Permit. The permit renewal was processed and negotiated concurrently with permit renewals with four other utilities: St. Cloud, Orange County, Polk County and Reedy Creek Improvement District (known as STOPR Utilities). A 20 year permit was issued which restrict groundwater withdrawals after 2013 to the projected demands for that year. Water for additional demand after 2013 must be provided by alternative water supplies. The permit conditions established the requirement for the development of an extensive monitoring network and program that covers the service area of the STOPR Utilities. The STOPR group negotiated an interlocal agreement to establish this relationship.

TWA modified and renewed Water Use Permit 49-00103-W for public water supply for their service area. In addition, this permit canceled and superseded previous Water Use Permit 49-00002-W (Buenaventura Lakes service area) and 49-0069-W (Poinciana Water System). These Water Use Permits are combined under Water Use Permit 49-00103-W issued by SFWMD in June 2007, which allocates 35.6 mgd (annual average) of groundwater to TWA. As mentioned in the prior section, the permit was renewed in 2013, with a new total allocation of 42.8 mgd. The permit expires in June 2027. As a condition of the current WUP, TWA is required to:

Describe an alternative water supply (AWS) project that provides water by March 31, 2018. This commitment must be met by developing 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

The STOPR Utilities [the City of St. Cloud, TWA, Orange County Utilities, Polk County Utilities (PCU), and Reedy Creek Improvement District (RCID)] with permit applications pending before SFWMD proposing groundwater withdrawals from the Upper Floridan Aquifer were notified by letter dated November 3, 2006 that a preliminary determination that their applications were considered competing.

Recognizing their shared interests, in December 2006, the STOPR Utilities executed an Interlocal Agreement Relating to Participation in Regional Cooperation to Pursue Water Use Permits in the SFWMD. In the STOPR Utilities' 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 STOPR Utilities' 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 Utilities' withdrawals.

UNIVERSITY OF CENTRAL FLORIDA (UCF)

Detailed facility information was not provided for this entity. Therefore, certain assumptions of existing facilities were made based on the previous Work Plan and other publically available data.

Facilities

The University of Central Florida (UCF) is located in northeastern Orange County, approximately 13 miles east of downtown Orlando. UCF has a student population of more than 63,000 and faculty of 11,000.

Four production wells supply the potable water demands of the University. The four wells provide all the potable water needs to the campus, with the exception of 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 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/cooling, and one inactive well.

Permits

UCF holds CUP # 3202 This permit was issued on May 15, 2014 for an average of 0.82 million gallons per day or maximum 256.5 million gallons per year for commercial/industrial/institutional use, 23.8 mgd for back-up irrigation, and 20.0 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 Wastewater Treatment Facility provide reclaimed water to UCF for irrigation.

WEDGEFIELD UTILITIES (PLURIS WEDGEFIELD)

Facilities

Wedgfield Utilities, Inc. provides potable and wastewater services for the Wedgfield development service area that encompasses approximately 735 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 Wedgefield and has not been in use. At the time the well was completed, Wedgefield was not the owner of the well/property. Wedgefield is now investigating the use of this well and if potential pumping quantities and water quality are suitable for potable use.

Permits

The City has a single Consumptive Use permit from the SJRWMD for its potable water supply system. CUP # 3302 is dated July 10, 2013 with an allocation of average 0.42 million gallons per day, maximum 153.67 million gallons per year in 2013, increasing annually to 0.50 million gallons per day, or 185.42 million gallons in 2033. The permit expires on July 9, 2033.

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 Wedgefield Utilities, Inc) that recognized the service territory established by the Florida Public Service Commission.

CITY OF WINTER GARDEN

Facilities

The City of Winter Garden is located 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 (10) square miles with direct access to Lake Apopka. The Florida Turnpike and State Road 50 both run through the City's limits. 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/or extended on several occasions since its purchase in the mid-1940s. There are three water treatment plants that provide potable water to the distribution system. Historically, the land in the City and surrounding areas was utilized mostly for citrus and farming. However, land use trends in the past ten to twenty years have shifted toward residential and commercial development.

In July 1996, the City submitted an application to renew its existing Consumptive Use Permit (CUP) with a request to increase their allocations from 981.8 million gallons per year (mgy) in 1996 to 1,314.00 mgy in 2006 to serve a growing population. In 2004, the City revised their application requesting 3,752.21 mgy to serve a population of 41,849 people in 2025.

The City currently operates three potable water treatment plants (WTP) - the Palmetto Street WTP constructed in 2002, the Fuller's Cross Road WTP constructed in 1992 and renovated in 2002, and the Stoneybrook WTP constructed in 2004. The water system did include an additional WTP on Boyd Street, but this plant was decommissioned. Water pumped from the Boyd Street well is now piped to the Palmetto Street WTP. The Palmetto Street and Fuller's Cross Road

WTPs obtain water from wells (Wells No. 1 through 4) completed in the Upper Floridan aquifer. The Stoneybrooke WTP obtains water from a well (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 treatment plants, which provide treatment through aeration and chlorine disinfection, have a combined permitted capacity of 13,020 mgd. The finished water is pumped into storage facilities located at each of the treatment plants and then into the distribution system.

All residential and commercial/industrial service connections in this service area are metered. There are separate irrigation meters on some residential accounts and most commercial accounts. City owned urban landscape irrigation is separately metered, but the use is included in the commercial/industrial classification.

The City of Winter Garden has almost doubled in size since 1996 with a current population of 40,814 people in 2016. Historically, the majority of residential development has occurred north of S.R. 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 has holds one Consumptive Use Permit from SJRWMD. CUP #3368 was issued on August 12, 2015 and allocates a maximum 2,310.45 million gallons per year (6.33 mgd). This permit expires on June 7, 2025.

Agreements

The City of Winter Garden had an agreement for the purchase of wholesale potable water from the County for a portion of the City's southeast service area. The agreement also allowed 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 into 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. The agreement allows the parties to retain existing customers. The agreement also allows the City to provide utility service to some portions of the Town of Oakland. The agreement also addresses system interconnections and transfer of customers and distribution service facilities.

CITY OF WINTER PARK

Detailed facility information was not provided for this City. Therefore, certain assumptions of existing facilities were made based on the previous Work Plan and other publically available data.

Facilities

The City of Winter Park's Water Treatment Division owns and 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 of the current and future active wells will obtain water from the Lower Floridan Aquifer.

The projected 2023 population of the service area is estimated at 73,766. The service area is predominately residential and approximately 70 percent of the current potable water use is under the residential use classification (single-family and multifamily). Approximately 22 percent of the water use is by commercial use classification consisting primarily of potable water supply for small businesses, professional offices, churches, and restaurants, 2 percent of the water use is classified as urban landscape use, which includes City parks, schools, City Hall and median irrigation and 6 percent is utility uses and unaccounted for losses.

Permits

CUP # 7624: Permit issued on October 11, 2005, Average 12.7 million gallons per day (mgd), Maximum annual 4635.5 million gallons for an estimated population of 73,949 in 2025, Permit expires on October 12, 2025.

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 in the event that 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.

ZELLWOOD WATER USERS

Facilities

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

The water supply system consists of Wells 1 (Jones Well) and 2 (King well), raw water mains, water treatment facilities, storage facilities, and pumps and piping for distributing treated potable water. In the past, per capita usage in this service area was higher than normally allocated for similar communities. Through improved water conservation practices, such as repair and placement of leaking water mains, institution of conservation encouraging water rate structure, and performance of individual water audits, as well as better record keeping, the per capita water use has been much lower in recent years.

Reclaimed water is not available at this time and is not projected to become available in the Zellwood Water Users service area since all houses and businesses in the area use septic systems for wastewater treatment and disposal.

Permits

CUP# 3301: Permit issued on March 2, 2004, Average 0.243 mgd, Maximum annual 88.8 million gallons for an estimated population of 1,826 in 2024, Permit expires on March 2, 2024. CUP# 3301 10 Year Compliance Report: February 27, 2014 changed Maximum annual to 45.25 million gallons. Permit will expire on December 12, 2023.

Agreements

This private utility is regulated by the St. Johns River Water Management District, which establishes its territorial boundary. There are no agreements between this utility and Orange County.

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)
Wedgefield Utilities, Inc.
Winter Garden (City of)

Orange County Utilities and the City of Orlando are the largest reclaimed water service providers within unincorporated Orange County. Summaries of the existing water reclamation facility 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 Orange County Utilities and the City of Orlando.

The suppliers operate numerous water reclamation facilities, which are described in more detail below. This appendix was prepared in August 2016 and reflects status as of this date in time.

ORANGE COUNTY UTILITIES (OCU)

Treatment Facilities

Orange County Utilities (OCU) is the largest wastewater utility and reclaimed water provider in unincorporated Orange County. The Water Reclamation Division of OCU provides wastewater collection and treatment service to over 140,000 connections in unincorporated Orange County and portions of several municipalities through the operation and maintenance of wastewater collection systems, water reclamation facilities, and reuse distribution systems.

OCU owns and operates three active regional water reclamation facilities (WRFs): the Northwest WRF, the South WRF, and the Eastern WRF. The Southwest Water Reclamation Facility is currently under development and will accommodate future growth in the County's Southwest service area. This plant is still in the pre-design phase with an expected completion date of 2025.

The OCU service area surrounding these facilities includes approximately 1,600 miles of sewer mains, 300 miles of reclaimed water lines, 680 OCU-maintained pump stations, and 3 reclaimed water pump stations. The total annual average wastewater volume treated at OCU facilities in

2015 was estimated at 60 mgd. Following treatment, all 60 mgd of the reclaimed water produced in 2015 was used for beneficial reuse. The existing County wastewater/reclaimed water service areas are depicted in **Figure B.1**.

Reuse Facilities

OCU beneficially reuses 100 percent of its reclaimed water from the Eastern, South, and Northwest WRFs. OCU reuses reclaimed water for aquifer recharge through RIBs, public access irrigation, and lake augmentation; for industrial uses such as 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 (FDEP). For each water reclamation facility, the County documents the planned end use of the reclaimed water produced. Each issued permit lists both treatment capacity and reclaimed water management system (reuse) capacity, as summarized in **Table B.1** below.

In 2015, OCU used 8,259 MG of reclaimed water to irrigate golf courses, residences, citrus groves, and commercial businesses. The County recharged approximately 47 mgd into the aquifer through wetlands, RIBs, and augmentation of lakes; and provides up to 14.7 mgd of cooling water to the Curtis H. Stanton energy facility. The distribution of Orange County reclaimed water reuse flows in 2015, summarized by type of use, is depicted in **Figure B.2** below.

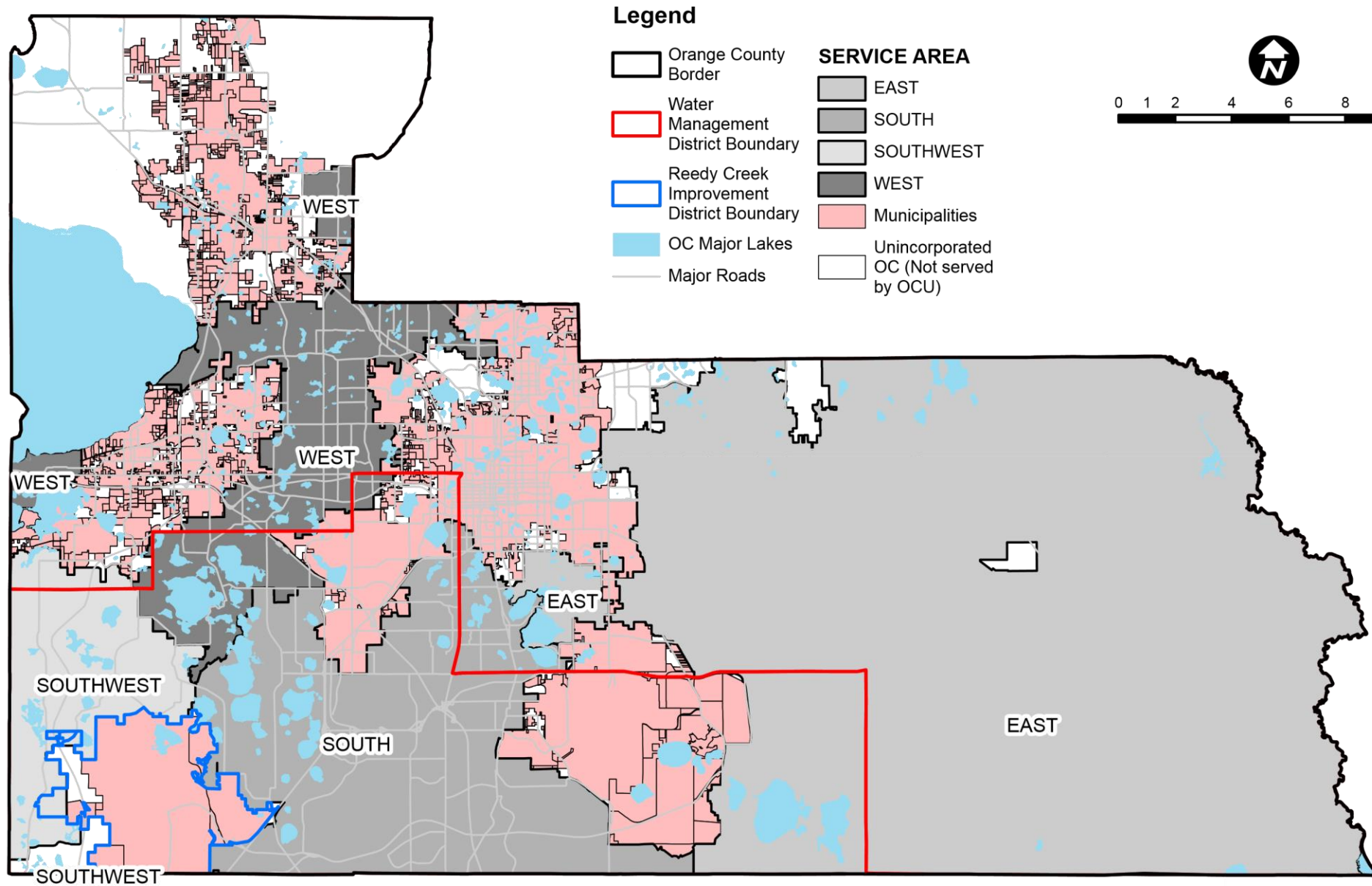
Table B.1. Orange County Utilities Reclaimed Water Permitted Capacity and Flows

Water Reclamation Facility	Current Permitted Treatment Capacity (mgd, AADF)	Permitted Reuse Capacity (mgd, AADF)	2015 Average Daily Reclaimed Water Flow (mgd, AADF)	Projected 2030 Average Daily Reclaimed Water Flow (mgd, AADF)
South	56.0 ⁽²⁾	70.8	35.8	44.6
Eastern	24.0 ⁽²⁾	33.5	18.6	31.3
Northwest	10.3	12.5	5.8	7.0
Southwest ⁽¹⁾	NA	NA	0.0	3.1
Totals	90.3	116.8	60.2	86.0

(1) The Southwest WRF is a planned future facility, with an anticipated Phase I capacity of 5 mgd, and an additional 5 mgd following in Phase II.

(2) Capacity following Phase V improvements in 2018.

NA = Not applicable.



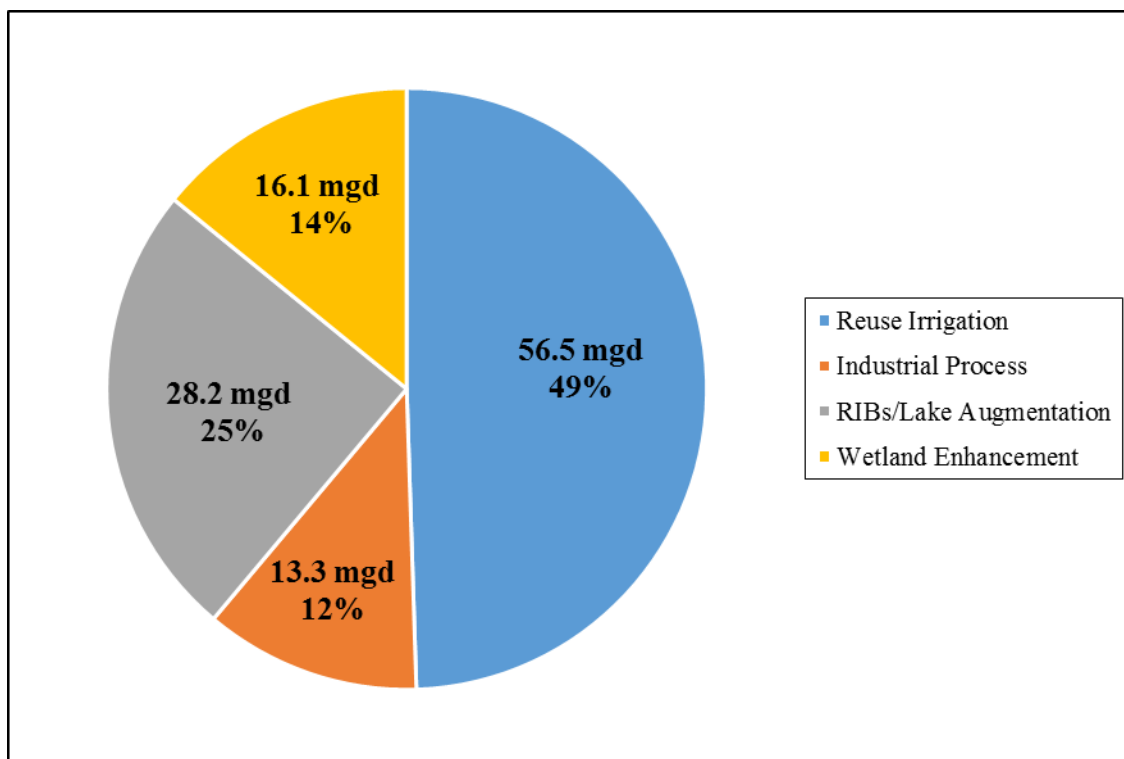


Figure B.2A. Orange County Utilities Reclaimed Permitted Allocation Summary

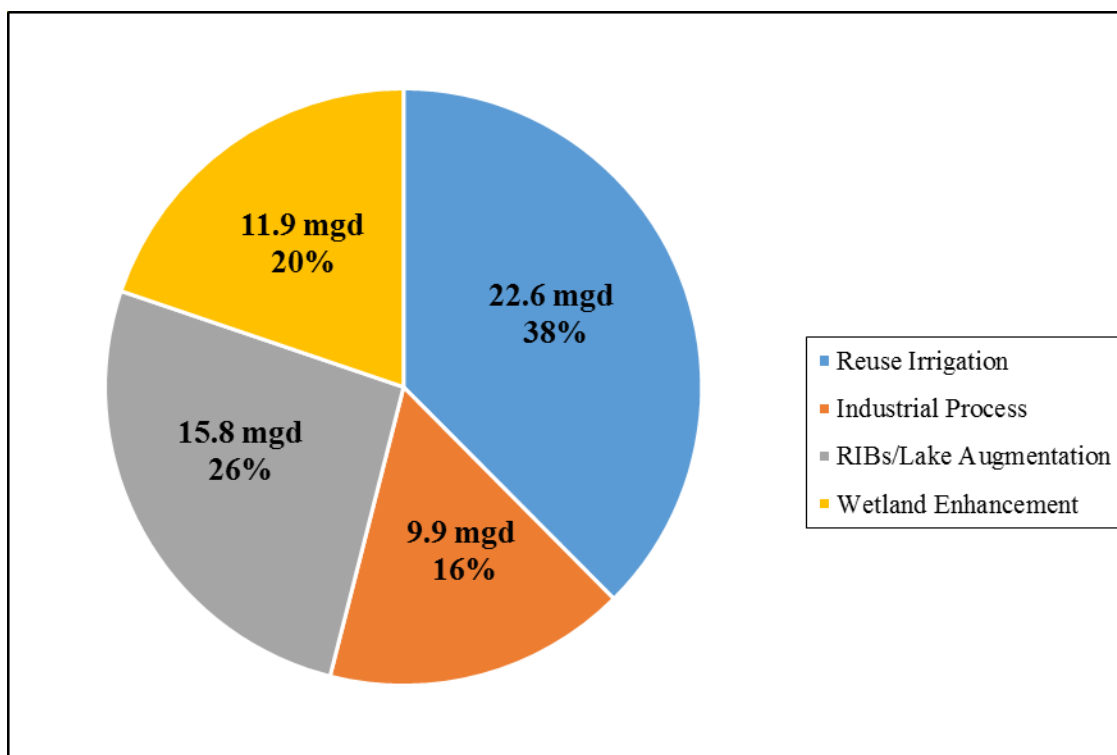


Figure B.2B. Orange County Utilities Reclaimed Water Reuse Distribution Summary, 2015

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 or reclaimed water service between OCU and other utility providers

Regional cooperative agreements, for mutually beneficial reuse initiatives, such as regional interconnection of 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 a number of service interconnects with other utility wastewater and reclaimed water systems. A number of 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
Tohopekaliga Water Authority	OCU has multiple wholesale agreements that allow for up to 1.25 mgd, AADF to be treated at Tohopekaliga Water Authority facilities, and two possible working agreements for another 0.3 mgd of reclaimed water provided by TWA
Reedy Creek Energy Services	OCU has a wholesale agreement that allows them to purchase unrestricted quantities of reclaimed water for the Southwest Service from the Reedy Creek Improvement District (RCID) facility
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 a wholesale agreement to provide reclaimed water to the North Wholesale Area.
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 Winter Garden	OCU as part of Conserv II with the City of Orlando, has an agreement to provide up to 2.038 mgd 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
City of Orlando	OCU has an agreement with the City to treat a portion of OCU's wastewater at Iron Bridge Regional WRF, and provide reclaimed to Horizon West Villages from Water Conserv II, and a wholesale agreement to provide the City with reclaimed water
Orlando Utilities Commission	OCU is required to provide up to 14.7 mgd to CSEC (13 mgd from EWRF, 1.7 mgd landfill stormwater)
Seminole County	OCU has two agreements to accept wastewater from Seminole County residential areas

In addition to the territorial and wholesale service agreements discussed above, Orange County currently 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, joint owners of this largest reuse project of its kind (agricultural irrigation) in the world, in place since 1984.
- *Curtis H. Stanton Energy Center Reclaimed Water Service Agreement*, for OCU to provide up to 13 mgd 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
- *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, the University of Central Florida, 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.

CITY OF ORLANDO

Treatment Facilities

The City of Orlando currently operates three water reclamation facilities (Iron Bridge, Water Conserv I, and Water Conserv II WRFs) 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 provides reclaimed water to several County areas in the Water Conserv I service area, especially along Narcoossee Road and Weatherbee Road. The water is supplied to the County for their utilities to distribute to their users. The County handles the billing for their customers.

Reuse Facilities

In partnership with OUC, the City of Orlando is working to provide reclaimed water for Project RENEW. As required by Condition #29 of the Consumptive Use Permit 3159 (CUP) issued by SJRWMD in 2014, OUC is required to implement a regional reuse program. The original project planned to provide 9.2 mgd of reclaimed water from the City of Orlando's Iron Bridge Water Reclamation Facility to Northwest Orange County to offset adverse impacts from OUC's pumping at the full CUP allocation of 109.2 mgd. Phase I of Project RENEW must provide at least 3 MGD of reclaimed water and must be completed no later than October 8, 2020. Phase II of the project must provide the entire 9.2 MGD of reuse and must be completed no later than October 8, 2022. OUC has an agreement with the City of Orlando to provide reclaimed water for Project RENEW. OUC also has an agreement with the City of Apopka for accepting reclaimed water from Project RENEW.

The project will be re-evaluated in order 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 MFL prevention and recovery strategy. Updated engineering studies, which identify the chosen alternative for Project RENEW, must be submitted within 2 years after adoption of the MFL Prevention/Recovery Strategy for South Lake, Orange and Seminole Counties by the SJRWMD Governing Board. OUC has \$7.5 million budgeted in its 2017 5-year capital plan to complete the design and start construction of Project RENEW.

The Eastern Regional Reclaimed Water Distribution System provides up to 19 mgd of reclaimed water to golf courses and residential area. The system was placed into operation in 2010 and transports reclaimed water from the Iron Bridge Water Reclamation Facility and Orange County's EWRF to the southeastern area around Lake Nona.

CITY OF APOPKA

Treatment Facilities

The Apopka Water Reclamation Facility is the City's primary regional plant, which provides advanced secondary treatment along with high level disinfection to produce reclaimed water that is suitable for use on public access areas like golf courses and home lawns. The Apopka WRF is permitted for a capacity of 4.5 mgd and the City has applied for a permit modification to expand the capacity to 8 mgd. The WRF has three wells that the City uses to supplement the supply of reclaimed water. The WRF has 6 million gallons of covered storage tank capacity and 25 million gallons of storage pond capacity.

The City has other storage facilities including the Rock Springs Ridge Golf Course with 20 million gallons of storage pond capacity and has constructed a storage pond with 120 million gallons of capacity at its Northwest Recreation Center. A second storage pond has been constructed at its Northwest Recreation Center with 22.8 million gallons of storage capacity and a third pond is currently under construction, which will add another 68 million gallons of storage capacity, bringing the total storage pond capacity at the Northwest Recreation Center to 210.8 million gallons. These storage ponds will receive a combination of reclaimed water and storm water runoff.

Reuse Facilities

The City of Apopka furnishes reclaimed water to users through its Project ARROW (Apopka Regional Reuse Of Water). The Apopka WRF is currently the only source of reclaimed water for the City's system. The City has a reclaimed water pump station at the Apopka WRF and a re-pump station in the northern part of its service area.

The North Shore Reclaimed Water Facility is located in the southwestern part of the City's service area. Originally conceived as a pump station, the City assessed the feasibility of using Lake Apopka as a supplemental water source for reclaimed water. The City is permitted to withdraw up to 5 MGD from the lake. The surface water treatment plant and the reclaimed water pump station has been constructed on the same site.

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).

Also, OCU will be connecting to the Marden Rd. reclaimed water main and providing 1 mgd the first year, 2 mgd the second year, and 3 mgd the following years. The OCU reclaimed water is expected to start in January 2017.

CITY OF MOUNT DORA

Treatment Facilities

There are two wastewater treatment plants (WWTP), identified as WWTP #1 and #2. The newest wastewater treatment plant, plant #2, is also known as the James P. Snell plant, is currently on-line and is receiving and treating wastewater from approximately 2,200 homes. The plant has been designed as a 100% reuse facility with a capacity of 1.25 million gallons per day and is intended to treat wastewater flows from the east and southeast portions of the service area, including the planned developments in the Orange County portion of the service area.

Reuse Facilities

The City currently operates a reclaimed system delivering an estimated 1.648 mgd to various locations that include mostly residential connections. The City currently sends approximately 0.162 mgd of wastewater effluent to a sprayfield. The wastewater plants use 0.135 mgd for irrigation demand.

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 1 million gallons per day through 2016, 0.66 mgd from 2017 to 2021, and 0.205 mgd from 2022 to 2031. Currently the well is supplementing the reclaimed system with 0.33 mgd.

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 comprise of various storage pond cells, along with future storm water 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, and the City plans to have at least one cell online within the next few years.

CITY OF OCOEE

Detailed facility information was not provided for this City. Therefore, certain assumptions of existing facilities were made based on the previous Work Plan and other publically available data.

Treatment Facilities

The City of Ocoee operates one wastewater treatment plant. The plant is designed to treat 3.0 mgd and had a 2015 average effluent of 1.56 mgd.

Reuse Facilities

In an effort to off-set potable water needs and aquifer withdrawals, the City of Ocoee utilizes reclaimed water for irrigation purposes. Reclaimed water is currently available to the City from four different sources: 1) City of Ocoee's Wastewater Treatment Facility (WWTF); 2) Conserv II 3) the City of Winter Garden, and 4) Orange County's NWRP.

The City of Ocoee is permitted reuse from their WWTF for irrigation of Forest Lakes Golf Course. The City of Winter Garden also diverts reclaimed water to the Forest Lakes Golf Course. In addition the City has an agreement with Orange County's Conserv II to provide wholesale reclaimed supply for irrigation to all incorporated areas of the City. The agreement states that after 2007, an average of 2.118 mgd of reclaimed water will be available to the City. The combined reclaimed water available from all three sources is approximately 3.87 mgd.

The City has one development project the Ocoee Reuse System Expansion Project that will provide an additional 0.35 mgd of reuse from the City WWTP. The project was anticipated to be complete in 2007.

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. TWA currently serves 93,000 water, 87,000 wastewater and 14,000 reclaimed water customers in Kissimmee, Poinciana, Polk County and unincorporated areas of Osceola and Orange County.

TWA owns and operates 15 water plants and 8 wastewater plants while maintaining 1,304 miles of water mains, 1199 miles of wastewater mains, 326 miles of reclaimed water mains and 394 wastewater pump stations. TWA treats and distributes approximately 34 million gallons of potable water and reclaims 23 million gallons of wastewater each day.

Reuse Facilities

TWA wastewater facilities include 8 water reclamation plants, sewage collection facilities and wastewater effluent disposal facilities. TWA Water Reclamation Facilities (WRF) each operate independently for set geographic areas throughout the service area. Wastewater is delivered to the WRF through a network of 1199 miles of collection and transmission pipes with 394 wastewater pump stations and 326 miles of reclaimed water distribution mains. The treated reclaimed water produced by the WRF is used for irrigation and the remainder routed to the system rapid infiltration basins to recharge the groundwater. The waste solids (bio-solids) are processed to kill pathogens and then spread over agricultural lands as fertilizers.

TWA has committed to development of alternative water supply (AWS) projects, in addition to continued use of reclaimed water, to supplement current and future groundwater withdrawals authorized in this permit. These alternative water supply projects are important because of the identified limitation on groundwater availability beyond present day demands and the fact that the TWA reclaimed water supplies are not adequate to meet all of their projected water demands.

WEDGEFIELD UTILITIES (PLURIS WEDGEFIELD)

Wedgefield Utilities owns and operates a wastewater treatment plant that is currently generating a daily average 0.235 million gallons per day of reclaimed water. All of the reclaimed water produced is currently used to irrigate approximately 120 acres of golf course turf. As a condition of SJRWMD permit, the utility is required to submit a yearly reuse report, which describes the activities that have occurred during the previous year to further implement the reuse of reclaimed water as the wastewater flow increases.

CITY OF WINTER GARDEN

Treatment Facilities

The City of Winter Garden owns and operates one wastewater treatment facility – Crest Avenue WWTP, which has a current permitted capacity of 4.0 mgd. The plant has completed the addition an Equalization basin to increase the plant capacity to 4.75 mgd, but the permitted capacity according to current permit is 4.0 mgd. The facility disposal percolation pond site is limited to an annual average of 1.75 mgd. The WWTP has existing tertiary filters and the ability to provide high-level disinfection. The effluent consistently meets or exceeds “Public Access” reuse water quality. In 2015, the average influent daily flow at the WWTP was 2.87 mgd and the reclaimed water flow was 1.54 mgd. The facility employs a method of effluent disposal which discharges treated wastewater to five (5) percolation ponds equipped with an underdrain system. The effluent collected in the underdrain flows by gravity through approximately one mile of wetlands before final discharge into Lake Apopka.

Reuse Facilities

The City of Winter Garden owns and operates 2 reuse facilities located on Fullers Cross Road which feeds part of the North East service area of the City and on Daniels Road which feeds part of the Southern Service area of the City. The City also purchases reuse from Conserve II to feed part of the Southern service area.

Under an agreement with the City of Ocoee, the City of Winter Garden now sends up to 1.0 mgd of reclaimed water for use at the Forest Lake Golf Course.

The City of Winter Garden has also entered into an agreement with the City of Orlando and Orange County Utilities 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.

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 (FY17). This is an extensive list of projects planned and implemented, budgeted over the next 5 years. As this Appendix serves as a reference, not all of the projects in this excerpt have been listed elsewhere in the document.

Division: Water Reclamation**Expenditures****by Category**

	FY 2014-15 Actual	FY 2015-16 Budget as of 3/31/16	FY 2016-17 Proposed Budget	Percent Change
Personal Services	\$ 7,887,822	\$ 8,515,315	\$ 8,689,005	2.0 %
Operating Expenditures	21,270,126	22,682,998	22,121,217	(2.5)%
Capital Outlay	222,873	731,455	782,816	7.0 %
Total Operating	\$ 29,380,820	\$ 31,929,768	\$ 31,593,038	(1.1)%
Total	\$ 29,380,820	\$ 31,929,768	\$ 31,593,038	(1.1)%
Authorized Positions	113	114	117	2.6 %

Division: Water Utilities**Expenditures****by Category**

	FY 2014-15 Actual	FY 2015-16 Budget as of 3/31/16	FY 2016-17 Proposed Budget	Percent Change
Personal Services	\$ 6,042,596	\$ 8,596,304	\$ 8,987,348	4.5 %
Operating Expenditures	14,058,677	16,658,411	15,409,152	(7.5)%
Capital Outlay	650,304	797,818	732,161	(8.2)%
Total Operating	\$ 20,751,576	\$ 26,052,533	\$ 25,128,661	(3.5)%
Grant	\$ 15,000	\$ 15,000	\$ 0	(100.0)%
Total Non-Operating	\$ 15,000	\$ 15,000	\$ 0	(100.0)%
Total	\$ 20,766,576	\$ 26,067,533	\$ 25,128,661	(3.6)%
Authorized Positions	115	118	120	1.7 %

**PROPOSED CIP - BY DEPARTMENT / DIVISION
FY 2016/17 - FY 2020/21 BUDGET**

Orange County

APPROVED

			PRIOR EXPENDITURES	BUDGET FY 15-16	PROPOSED BUDGET FY 16-17	PROPOSED BUDGET FY 17-18	PROPOSED BUDGET FY 18-19	PROPOSED BUDGET FY 19-20	PROPOSED BUDGET FY 20-21	PROPOSED BUDGET FUTURE	TOTAL PROJECT COST
ORG	FUND	PROJECT NAME									
Utilities											
Other											
1409											
	4420	Customer Info & Billing System	42,523,848	4,376,658	2,652,788	1,721,321	1,721,321	4,226,037	1,721,321	0	58,943,294
		Org Subtotal	42,523,848	4,376,658	2,652,788	1,721,321	1,721,321	4,226,037	1,721,321	0	58,943,294
1410											
	4420	Presidents Drive Ops Center	19,350,758	2,358,940	800,000	0	0	0	0	0	22,509,698
		Org Subtotal	19,350,758	2,358,940	800,000	0	0	0	0	0	22,509,698
1499											
	4420	MIS Network/Work Order Sys	24,835,089	2,270,072	2,325,000	3,473,000	2,473,000	2,477,036	1,462,381	0	39,315,578
		Org Subtotal	24,835,089	2,270,072	2,325,000	3,473,000	2,473,000	2,477,036	1,462,381	0	39,315,578
1535											
	4420	GIS Migration	17,841,600	974,929	177,938	151,238	68,438	68,625	10,500	0	19,293,268
		Org Subtotal	17,841,600	974,929	177,938	151,238	68,438	68,625	10,500	0	19,293,268
1549											
	4420	Developer Projects	954,015	20,000	20,000	5,000	0	0	0	0	999,015
		Org Subtotal	954,015	20,000	20,000	5,000	0	0	0	0	999,015
1551											
	4420	Developer Built Projects	852,046	100,000	70,000	20,000	0	0	0	0	1,042,046
		Org Subtotal	852,046	100,000	70,000	20,000	0	0	0	0	1,042,046
1552											
	4420	Developer Built Projects	773,457	270,000	70,000	20,000	0	0	0	0	1,133,457
		Org Subtotal	773,457	270,000	70,000	20,000	0	0	0	0	1,133,457
1556											
	4420	Utilities Security Imp	174,885	525,411	325,000	300,000	300,000	300,411	150,000	0	2,075,707
		Org Subtotal	174,885	525,411	325,000	300,000	300,000	300,411	150,000	0	2,075,707
1560											
	4420	Developer Built Projects	347,399	250,000	150,000	100,000	50,000	25,000	0	0	922,399
		Org Subtotal	347,399	250,000	150,000	100,000	50,000	25,000	0	0	922,399

Utilities

**PROPOSED CIP - BY DEPARTMENT / DIVISION
FY 2016/17 - FY 2020/21 BUDGET**

Orange County

APPROVED			PRIOR EXPENDITURES	BUDGET FY 15-	PROPOSED	PROPOSED	PROPOSED	PROPOSED	PROPOSED	PROPOSED	TOTAL
ORG	FUND	PROJECT NAME	16	16	18	17-	18-	19-	20	21	PROJECT COST
1561											
	4420	Developer Built Projects	20,080	350,000	400,000	400,000	400,000	400,000	400,000	2,000,000	4,370,080
		Org Subtotal	20,080	350,000	400,000	400,000	400,000	400,000	400,000	2,000,000	4,370,080
		DIVISION SUBTOTAL	107,673,177	11,496,010	6,990,726	6,190,559	5,012,759	7,497,109	3,744,202	2,000,000	150,604,542
Solid	Waste										
1061											
	4410	Porter Modifications	1,114,939	657,003	1,129,664	4,013,333	2,220,000	0	0	0	9,134,939
		Org Subtotal	1,114,939	657,003	1,129,664	4,013,333	2,220,000	0	0	0	9,134,939
1065											
	4410	McLeod Rd TS Improvements	3,066,697	1,203,723	5,917,808	10,000,000	4,082,192	0	0	0	24,270,420
		Org Subtotal	3,066,697	1,203,723	5,917,808	10,000,000	4,082,192	0	0	0	24,270,420
Utilities											
1069											
	4410	Ldfill-Admin Bldg	1,366,683	241,036	309,524	190,476	0	0	0	0	2,107,719
		Org Subtotal	1,366,683	241,036	309,524	190,476	0	0	0	0	2,107,719
1081											
	4410	Cell AK Long-Term Care	0	150,411	150,000	150,000	149,589	0	0	0	600,000
		Org Subtotal	0	150,411	150,000	150,000	149,589	0	0	0	600,000
1083											
	4410	NW Transfer Station	2,536,456	80,440	397,643	5,488,584	7,097,222	1,536,111	0	0	17,136,456
		Org Subtotal	2,536,456	80,440	397,643	5,488,584	7,097,222	1,536,111	0	0	17,136,456
1086											
	4410	Cell 7B/8 Closure & LT Care	22,705,505	445,896	805,000	305,000	305,000	305,836	305,000	0	25,177,237
		Org Subtotal	22,705,505	445,896	805,000	305,000	305,000	305,836	305,000	0	25,177,237
1099											
	4410	Closure & LT Care Class III #1	15,663,816	180,493	180,000	180,000	180,000	180,493	180,000	0	16,744,802
		Org Subtotal	15,663,816	180,493	180,000	180,000	180,000	180,493	180,000	0	16,744,802
1103											
	4410	Landfill Cell 10	30,658,992	225,000	0	0	0	0	0	0	30,883,992
		Org Subtotal	30,658,992	225,000	0	0	0	0	0	0	30,883,992

**PROPOSED CIP - BY DEPARTMENT / DIVISION
FY 2016/17 - FY 2020/21 BUDGET**

ORG	FUND	PROJECT NAME	PRIOR EXPENDITURES	APPROVED BUDGET FY 15-16	PROPOSED BUDGET FY 16-17	PROPOSED BUDGET FY 17-18	PROPOSED BUDGET FY 18-19	PROPOSED BUDGET FY 19-20	PROPOSED BUDGET FY 20-21	PROPOSED BUDGET FUTURE	TOTAL PROJECT COST
1106	4410	Class 3 Waste Disposal Cell 2	3,545,866	299,183	765,000	299,795	299,795	300,616	299,795	0	5,810,050
		Org Subtotal	3,545,866	299,183	765,000	299,795	299,795	300,616	299,795	0	5,810,050
1107	4410	Landfill Cell 11	300,000	579,200	1,000,000	1,000,000	2,036,800	7,433,920	13,782,400	16,727,680	42,860,000
		Org Subtotal	300,000	579,200	1,000,000	1,000,000	2,036,800	7,433,920	13,782,400	16,727,680	42,860,000
1109	4410	Closure & LT Care Landfill Cells 9-12	6,363,117	11,255,629	1,761,125	791,644	1,215,833	5,487,272	3,903,991	0	30,778,611
		Org Subtotal	6,363,117	11,255,629	1,761,125	791,644	1,215,833	5,487,272	3,903,991	0	30,778,611
		DIVISION SUBTOTAL	87,322,070	15,318,014	12,415,764	22,418,832	17,586,431	15,244,248	18,471,186	16,727,680	205,504,225
Water											
1448	4420	Wtr Dist Mods CW	15,235,654	1,272,111	1,339,797	238,631	0	0	0	0	18,086,193
		Org Subtotal	15,235,654	1,272,111	1,339,797	238,631	0	0	0	0	18,086,193
1450	4420	Eastern Water Trans Imp	18,311,806	5,355,233	4,674,540	338,511	0	0	0	0	28,680,090
		Org Subtotal	18,311,806	5,355,233	4,674,540	338,511	0	0	0	0	28,680,090
1453	4420	Transp Reloc Wtr CW	24,284,529	2,646,285	0	0	0	0	0	0	26,930,814
		Org Subtotal	24,284,529	2,646,285	0	0	0	0	0	0	26,930,814
1463	4420	Western Water Trans Imp	7,879,247	115,000	0	0	0	8,138	11,862	252,000	8,266,247
		Org Subtotal	7,879,247	115,000	0	0	0	8,138	11,862	252,000	8,266,247
1474	4420	New Meter Installation	20,678,559	2,193,806	2,187,812	2,187,812	2,187,812	2,193,806	2,187,812	0	33,817,419
		Org Subtotal	20,678,559	2,193,806	2,187,812	2,187,812	2,187,812	2,193,806	2,187,812	0	33,817,419
1482	4420	Transportation Related Water	22,966,344	4,840,067	3,193,224	1,445,820	2,928,302	2,494,224	1,187,463	835,010	39,890,454
		Org Subtotal	22,966,344	4,840,067	3,193,224	1,445,820	2,928,302	2,494,224	1,187,463	835,010	39,890,454

**PROPOSED CIP - BY DEPARTMENT / DIVISION
FY 2016/17 - FY 2020/21 BUDGET**

Orange County

APPROVED			PRIOR EXPENDITURES	BUDGET FY 15-16	PROPOSED BUDGET FY 16-17	PROPOSED BUDGET FY 17-18	PROPOSED BUDGET FY 18-19	PROPOSED BUDGET FY 19-20	PROPOSED BUDGET FY 20-21	PROPOSED BUDGET FUTURE	TOTAL PROJECT COST
ORG	FUND	PROJECT NAME									
1498											
	4420	Southern Reg Wellfield & Wtr Pl	60,146,588	3,124,971	4,130,546	286,806	955,556	3,622,500	6,387,500	2,590,000	81,244,467
		Org Subtotal	60,146,588	3,124,971	4,130,546	286,806	955,556	3,622,500	6,387,500	2,590,000	81,244,467
1506											
	4420	Horizons West Transmission Sys	14,843,777	1,004,060	1,058,317	502,325	770,833		0	0	18,179,312
		Org Subtotal	14,843,777	1,004,060	1,058,317	502,325	770,833		0	0	18,179,312
1508											
	4420	South Water Transmission Imp	21,508,538	3,516,828	1,026,177	5,841,244	5,761,084	4,812,313	4,799,164	2,498,195	49,763,543
	5847	South Water Transmission Imp	8,375,317	1,493,694	0	0	0	0	0	0	9,869,011
		Org Subtotal	29,883,855	5,010,522	1,026,177	5,841,244	5,761,084	4,812,313	4,799,164	2,498,195	59,632,554
1532											
	4420	W Reg Water Treat Fac Ph III	13,577,449	2,595,637	3,454,028	1,086,806	29,167		0	5,000	22,493,087
	5846	W Reg Water Treat Fac Ph III	3,700,681	67,720	0	0	0	0	0	0	3,768,401
		Org Subtotal	17,278,130	2,663,357	3,454,028	1,086,806	29,167		0	5,000	26,261,488
1533											
	4420	Water Renewal & Replacements	1,797,332	1,009,436	2,711,345	200,549	200,549	201,099	200,549		6,320,859
		Org Subtotal	1,797,332	1,009,436	2,711,345	200,549	200,549	201,099	200,549		6,320,859
1540											
	4420	Park Manor Water Systems Imp	3,664,689	5,000	0	0	0	0	0	0	3,669,689
		Org Subtotal	3,664,689	5,000	0	0	0	0	0	0	3,669,689
1544											
	4420	Water SCADA & Secuirty Imp	5,042,191	87,840	87,600	87,600	87,600	87,840	87,600		5,568,271
		Org Subtotal	5,042,191	87,840	87,600	87,600	87,600	87,840	87,600		5,568,271
1545											
	4420	Private Well Retrofit Program	143,648	5,011	0	0	0	0	0	0	148,659
		Org Subtotal	143,648	5,011	0	0	0	0	0	0	148,659
1550											
	4420	Alternate Regional Water Supply	4,935,581	182,553	280,925	309,518	309,518	298,109	114,388	14,000,000	20,430,592
		Org Subtotal	4,935,581	182,553	280,925	309,518	309,518	298,109	114,388	14,000,000	20,430,592

**PROPOSED CIP - BY DEPARTMENT / DIVISION
FY 2016/17 - FY 2020/21 BUDGET**

Orange County

APPROVED			PRIOR EXPENDITURES	BUDGET FY 15-	PROPOSED	PROPOSED	PROPOSED	PROPOSED	PROPOSED	PROPOSED	TOTAL
ORG	FUND	PROJECT NAME	16	16	18	19	20	21	21	BUDGET FUTURE	PROJECT COST
1553											
	4420	Water Distribution Mods 2	5,260,491	2,097,860	2,996,221	3,029,167	1,825,000	690,000		0	15,898,739
		Org Subtotal	5,260,491	2,097,860	2,996,221	3,029,167	1,825,000	690,000		0	15,898,739
1554											
	4420	Eastern Regional Wsf Phase 3	18,310,448	4,330,244	3,439,473	4,775,417	4,775,417	2,865,250		0	38,496,249
		Org Subtotal	18,310,448	4,330,244	3,439,473	4,775,417	4,775,417	2,865,250		0	38,496,249
1557											
	4420	Southwest Water Supply Facility	2,576,026	2,224,592	1,910,537	5,020,000	7,300,000	7,320,000	360,000		26,711,155
		Org Subtotal	2,576,026	2,224,592	1,910,537	5,020,000	7,300,000	7,320,000	360,000	0	26,711,155
1558											
	4420	Eastern Operations Building	124,631	915,570	2,067,692	2,617,385	4,464,231	4,476,462	4,341,923		19,007,894
		Org Subtotal	124,631	915,570	2,067,692	2,617,385	4,464,231	4,476,462	4,341,923	0	19,007,894
		DIVISION SUBTOTAL	273,363,527	39,083,518	34,558,234	27,967,591	31,595,069	29,069,741	19,683,261	21,920,205	477,241,146
Utilities											
Water Reclamation											
1411											
	4420	South Svc Area Effluent Reuse	46,600,476	1,381,246	2,299,357	2,834,045	2,934,817	3,143,437	1,295,274	431,722	60,920,374
	5844	South Svc Area Effluent Reuse	2,235,319	2,254,211	0	0	0	0	0	0	4,489,530
	8199	South Svc Area Effluent Reuse	2,508,604	159,387	0	0	0	0	0	0	2,667,991
		Org Subtotal	51,344,399	3,794,844	2,299,357	2,834,045	2,934,817	3,143,437	1,295,274	431,722	68,077,895
1416											
	4420	Pump Station Monitors CW	4,180,350	2,045,731	6,339,739	6,062,895	5,517,800	35,101	34,883		24,216,499
		Org Subtotal	4,180,350	2,045,731	6,339,739	6,062,895	5,517,800	35,101	34,883	0	24,216,499
1427											
	4420	Collect Rehab CW	20,144,900	2,980,938	2,423,628	2,091,993	1,241,000	469,200		0	29,351,659
		Org Subtotal	20,144,900	2,980,938	2,423,628	2,091,993	1,241,000	469,200	0	0	29,351,659
1428											
	4420	Pumping Rehab/Replace	30,012,414	160,614	0	0	0	0	0		30,173,028
	5843	Pumping Rehab/Replace	3,616,040	226,537	0	0	0	0	0		3,842,577
		Org Subtotal	33,628,454	387,151	0	0	0	0	0	0	34,015,605

**PROPOSED CIP - BY DEPARTMENT / DIVISION
FY 2016/17 - FY 2020/21 BUDGET**

<i>ORG</i>	<i>FUND</i>	<i>PROJECT NAME</i>	<i>PRIOR EXPENDITURES</i>	<i>APPROVED BUDGET FY 15-16</i>	<i>PROPOSED BUDGET FY 16-17</i>	<i>PROPOSED BUDGET FY 17-18</i>	<i>PROPOSED BUDGET FY 18-19</i>	<i>PROPOSED BUDGET FY 19-20</i>	<i>PROPOSED BUDGET FY 20-21</i>	<i>PROPOSED BUDGET FUTURE</i>	<i>TOTAL PROJECT COST</i>
1432											
	4420	Transp Reloc WW CW	17,421,784	2,022,749	303,018	396,421	71,682	0	0	0	20,215,654
		Org Subtotal	17,421,784	2,022,749	303,018	396,421	71,682	0	0	0	20,215,654
1435											
	4420	NW Subreg PH III	39,505,032	2,671,350	5,394,457	5,038,992	2,522,565	23,611	75,000	0	55,231,007
	8187	NW Subreg PH III	0	700,000	0	0	0	0	0	0	700,000
		Org Subtotal	39,505,032	3,371,350	5,394,457	5,038,992	2,522,565	23,611	75,000	0	55,931,007
1445											
	4420	SW Orange Effluent Disposal	18,946,454	1,018,561	6,143,524	6,293,198	5,996,531	4,409,325	23,804	0	42,831,397
		Org Subtotal	18,946,454	1,018,561	6,143,524	6,293,198	5,996,531	4,409,325	23,804	0	42,831,397
1469											
	4420	Iron Bridge Interlocal Agreement	10,424,244	168,343	444,314	380,188	380,188	381,230	121,858	0	12,300,365
		Org Subtotal	10,424,244	168,343	444,314	380,188	380,188	381,230	121,858	0	12,300,365
1483											
	4420	Eastern Wastewater Reuse	29,817,743	5,153,524	2,990,279	4,034,076	6,420,269	4,368,734	3,589,584	1,868,551	58,242,760
		Org Subtotal	29,817,743	5,153,524	2,990,279	4,034,076	6,420,269	4,368,734	3,589,584	1,868,551	58,242,760
1496											
	4420	Northwest Svc Area Reuse	24,438,075	290,000	0	0	0	0	0	0	24,728,075
		Org Subtotal	24,438,075	290,000	0	0	0	0	0	0	24,728,075
1500											
	4420	Collections Rehab	4,983,731	7,153,392	5,583,734	7,478,072	5,592,681	16,358,751	13,969,071	3,807,680	64,927,112
		Org Subtotal	4,983,731	7,153,392	5,583,734	7,478,072	5,592,681	16,358,751	13,969,071	3,807,680	64,927,112
1502											
	4420	Pumping Rehab II	37,209,367	1,133,540	816,004	809,136	557,662	518,338	489,360	402,056	41,935,463
	5843	Pumping Rehab II	2,499,945	31,057	0	0	0	0	0	0	2,531,002
		Org Subtotal	39,709,312	1,164,597	816,004	809,136	557,662	518,338	489,360	402,056	44,466,465
1503											
	4420	Pumping Rehab III	9,264,701	6,336,886	5,612,920	6,109,297	3,732,645	3,561,414	5,673,379	3,810,627	44,101,869
		Org Subtotal	9,264,701	6,336,886	5,612,920	6,109,297	3,732,645	3,561,414	5,673,379	3,810,627	44,101,869

**PROPOSED CIP - BY DEPARTMENT / DIVISION
FY 2016/17 - FY 2020/21 BUDGET**

Orange County

Utilities

13 - 17

APPROVED			PRIOR EXPENDITURES		PROPOSED	PROPOSED	PROPOSED	PROPOSED	PROPOSED	PROPOSED	TOTAL
ORG	FUND	PROJECT NAME	16	BUDGET FY 15-16	BUDGET FY 16-17	BUDGET FY 17-18	BUDGET FY 18-19	BUDGET FY 19-20	BUDGET FY 20-21	BUDGET FUTURE	PROJECT COST
1504											
	4420	Trans Related Wastewater	20,501,626	4,441,939	6,604,698	910,324	1,149,161	1,592,071	791,120	1,583,547	37,574,486
		Org Subtotal	20,501,626	4,441,939	6,604,698	910,324	1,149,161	1,592,071	791,120	1,583,547	37,574,486
1505											
	4420	Septic Tank Retrofit	14,784,572	59,898	564,923	758,077	758,077	618,923		0	17,544,470
	8153	Septic Tank Retrofit	25,559	324,442	0	0	0	0	0	0	350,001
		Org Subtotal	14,810,131	384,340	564,923	758,077	758,077	618,923	0	0	17,894,471
1507											
	4420	Horizons West Wastewater Sys	8,190,335	2,962,007	3,439,411	2,728,512	2,062,383	12,619,174	22,543,473	45,252,308	99,797,603
		Org Subtotal	8,190,335	2,962,007	3,439,411	2,728,512	2,062,383	12,619,174	22,543,473	45,252,308	99,797,603
1509											
	4420	Southern Wastewater Collect	17,176,991	475,756	568,171	538,333	167,187	472,115	807,176	785,584	20,991,313
		Org Subtotal	17,176,991	475,756	568,171	538,333	167,187	472,115	807,176	785,584	20,991,313
1510											
	4420	Eastern Wastewater Collect	16,612,000	2,796,244	1,346,543	342,176	0	1,500,000	0	123,543	22,720,506
		Org Subtotal	16,612,000	2,796,244	1,346,543	342,176	0	1,500,000	0	123,543	22,720,506
1511											
	4420	Northwest Wastewater Collect	4,784,803	530,663	1,480,694	873,506	0	40,692	59,308	1,108,000	8,877,666
		Org Subtotal	4,784,803	530,663	1,480,694	873,506	0	40,692	59,308	1,108,000	8,877,666
1536											
	4420	Capital Reuse Meter Install	3,314,664	605,254	603,600	603,600	603,600	602,056	19,890	0	6,352,664
		Org Subtotal	3,314,664	605,254	603,600	603,600	603,600	602,056	19,890	0	6,352,664
1538											
	4420	Easter Wtr Reclamation Exp	47,499,596	4,299,586	4,599,474	4,162,504	2,607,722	3,777,240	13,345,727	23,823,055	104,114,904
	5848	Easter Wtr Reclamation Exp	2,413,154	62,265,796	0	0	0	0	0	0	64,678,950
		Org Subtotal	49,912,750	66,565,382	4,599,474	4,162,504	2,607,722	3,777,240	13,345,727	23,823,055	168,793,854
1539											
	4420	Force Main Rehab	11,673,760	2,079,355	2,676,698	8,707,842	9,182,222	7,015,974	6,996,805	0	48,332,656
	8199	Force Main Rehab	3,728,744	285,394	0	0	0	0	0	0	4,014,138
		Org Subtotal	15,402,504	2,364,749	2,676,698	8,707,842	9,182,222	7,015,974	6,996,805	0	52,346,794

PROPOSED CIP - BY DEPARTMENT / DIVISION
FY 2016/17 - FY 2020/21 BUDGET

ORG	FUND	PROJECT NAME	PRIOR EXPENDITURES	APPROVED BUDGET FY 15-16	PROPOSED BUDGET FY 16-17	PROPOSED BUDGET FY 17-18	PROPOSED BUDGET FY 18-19	PROPOSED BUDGET FY 19-20	PROPOSED BUDGET FY 20-21	PROPOSED BUDGET FUTURE	TOTAL PROJECT COST
1541											
	4420	Park Manor Wastewater Sys	3,820,560	5,000	0	0	0	0	0	0	3,825,560
		Org Subtotal	3,820,560	5,000	0	0	0	0	0	0	3,825,560
1542											
	4420	Southwest Svc Area Reuse	4,521,769	1,329,535	1,000,419	224,019	371,701	35,069	0	0	7,482,512
		Org Subtotal	4,521,769	1,329,535	1,000,419	224,019	371,701	35,069	0	0	7,482,512
1555											
	4420	South WRF Ph V	16,509,681	20,888,154	31,624,899	27,579,857	15,021,562	4,575,000	15,602,500	38,322,500	170,124,153
		Org Subtotal	16,509,681	20,888,154	31,624,899	27,579,857	15,021,562	4,575,000	15,602,500	38,322,500	170,124,153
1559											
	4420	Pumping Rehab IV	882,333	3,113,107	4,645,571	9,056,771	13,746,934	12,014,608	13,513,597	8,404,133	65,377,054
		Org Subtotal	882,333	3,113,107	4,645,571	9,056,771	13,746,934	12,014,608	13,513,597	8,404,133	65,377,054
1570											
	4420	WW Pumping Rehab Phase V	0	100	0	0	0	0	0	0	100
		Org Subtotal	0	100	0	0	0	0	0	0	100
1571											
	4420	Gravity Main Improvements	0	1,760,000	608,333	608,333	608,333	588,333	0	0	4,173,332
		Org Subtotal	0	1,760,000	608,333	608,333	608,333	588,333	0	0	4,173,332
1572											
	4420	Pump Station Improvements	0	2,080,851	1,565,137	1,804,945	1,804,945	1,790,110	0	0	9,045,988
		Org Subtotal	0	2,080,851	1,565,137	1,804,945	1,804,945	1,790,110	0	0	9,045,988
1573											
	4420	Reclaimed Main Improvements	0	586,667	608,333	608,333	608,333	588,333	0	0	2,999,999
		Org Subtotal	0	586,667	608,333	608,333	608,333	588,333	0	0	2,999,999
1574											
	4420	Force Main Improvements	0	1,124,444	1,165,972	1,165,972	1,165,972	1,127,639	0	0	5,749,999
		Org Subtotal	0	1,124,444	1,165,972	1,165,972	1,165,972	1,127,639	0	0	5,749,999
1575											
	4420	Water Main Improvements	0	586,667	608,333	608,333	608,333	588,333	0	0	2,999,999
		Org Subtotal	0	586,667	608,333	608,333	608,333	588,333	0	0	2,999,999

PROPOSED CIP - BY DEPARTMENT / DIVISION

FY 2016/17 -

2021 BUDGET

ORG	FUND	PROJECT NAME	PRIOR EXPENDITURES	APPROVED BUDGET FY 15-16	PROPOSED BUDGET FY 16-17	PROPOSED BUDGET FY 17-18	PROPOSED BUDGET FY 18-19	PROPOSED BUDGET FY 19-20	PROPOSED BUDGET FY 20-21	PROPOSED BUDGET FUTURE	TOTAL PROJECT COST
		DIVISION SUBTOTAL	480,249,325	148,488,925	102,062,183	85,434,305	82,814,811	98,951,809	129,723,306	1,230,534,414	
		DEPARTMENT TOTAL	948,608,099	214,386,467	156,026,907	139,628,564	134,625,909	140,850,458	170,371,191	2,063,884,327	
GRAND TOTAL			948,608,099	214,386,467	156,026,907	139,628,564	134,625,909	140,850,458	170,371,191	2,063,884,327	

ORDINANCE NO. 2017-____

AN ORDINANCE PERTAINING TO COMPREHENSIVE PLANNING IN ORANGE COUNTY, FLORIDA; AMENDING THE ORANGE COUNTY COMPREHENSIVE PLAN, COMMONLY KNOWN AS THE "2010-2030 COMPREHENSIVE PLAN," AS AMENDED, BY ADOPTING AMENDMENTS PURSUANT TO SECTION 163.3184(3), FLORIDA STATUTES, FOR THE 2017 CALENDAR YEAR (FIRST CYCLE); AND PROVIDING EFFECTIVE DATES.

BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF ORANGE COUNTY:

Section 1. Legislative Findings, Purpose, and Intent.

a. Part II of Chapter 163, Florida Statutes, sets forth procedures and requirements for a local government in the State of Florida to adopt a comprehensive plan and amendments to a comprehensive plan;

b. Orange County has complied with the applicable procedures and requirements of Part II of Chapter 163, Florida Statutes, for amending Orange County's 2010-2030 Comprehensive Plan ("Comprehensive Plan");

c. On December 15, 2016, the Orange County Local Planning Agency ("LPA") held a public hearing on the transmittal of the proposed amendments to the Comprehensive Plan as described in this ordinance;

d. On January 24, 2017, the Board of County Commissioners ("Board") held a public hearing on the transmittal of the proposed amendments to the Comprehensive Plan as described in this ordinance;

e. On March 13, 2017, the DEO issued a letter to the County relating to the DEO's review of those proposed amendments;

f. On April 20, 2017, the LPA held a public hearing on the adoption of the proposed amendments to the Comprehensive Plan as described in this ordinance, and decided to recommend adoption; and

g. On May 9, 2017, the Board held a public hearing on adoption of the proposed amendments as described in this ordinance, and decided to adopt them.

Section 2. Authority. This ordinance is adopted in compliance with and pursuant to Part II of Chapter 163, Florida Statutes.

Section 3. Amendments to Text of Conservation Element. The Comprehensive Plan is hereby amended by amending the text of the Conservation Element to read as follows, with underlines showing new numbers and words, and strike-throughs indicating repealed numbers and words.

C1.11.11 Orange County will continue to implement the water conservation efforts identified in the Work Plan. These efforts include:

- Continued staffing of the County's water conservation program and extensive public education program;
- Continued enforcement of ordinances and policies that limit irrigation days and hours, encourage Florida Friendly landscaping, require the use of ultra-low volume fixtures, and require rain sensor devices;
- Continued water conservation practices, such as participation in Florida Friendly Landscape workshops, water use audits, toilet retrofit program, showerhead exchange program, efficient irrigation nozzle replacement program, distribution system leak program, presentation and events, and participation in public awareness campaigns;

- Continued use of a tiered inclined block water conservation rate structure, including rate increases;
- Further assessment of existing water conservation program effectiveness and development of new program initiatives; and,
- Periodic review and update of existing water conservation and landscaping ordinances to promote additional improvements in water conservation.

Section 4. Amendments to Text of Potable Water, Wastewater and Reclaimed

Water Element. The Comprehensive Plan is hereby further amended by amending the text of the Potable Water, Wastewater and Reclaimed Water Element to read as follows, with underlines showing new numbers and words, and strike-throughs indicating repealed numbers and words.

PW1.1.1 Orange County shall review the Master Plan every five years 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, which are required to be updated at least every five years, to identify system deficiencies and, if necessary, implement a plan for correction. The Work Plan (~~Orange County Water Supply Facilities Work Plan, 2008~~ Orange County Water Supply Facilities Work Plan, Fiscal Year 2017/2018 to 2027/2028), 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.

* * *

PW1.2.5 When central water service from Orange County Utilities is required for development, the level of service standard shall be 275 gallons per day (average daily flow) per Equivalent Residential Unit. Flow demands for commercial, industrial or other special developments differing from the flow values established by the serving utility shall be established from existing records or by estimated projections, using the best available data. These levels of service shall also be applied for planning purposes only to review Developments of Regional Impact (DRI) and Comprehensive Plan Future Land Use Map Amendments.

~~A. Timing of Future Treatment Facility Expansion. Orange County Utilities shall ensure that sufficient water treatment facility capacity is maintained. Once the maximum daily flow (MDF) equals or exceeds 75% of a system's permitted~~

capacity or once the sum of current MDF plus future commercial MDF equals or exceeds 90% of permitted capacity, a report shall be presented to the Florida Department of Environmental Protection (FDEP) on the need to increase capacity and, if capacity needs to be increased, the method of increase, estimated cost and timing. The capacity report shall identify recommended improvements, improvement costs and the timing of such improvements. Facilities scheduled for design and construction, as identified by the capacity report, shall be considered for inclusion into Orange County's Five Year and Ten Year Capital Improvement Program. Facilities approaching build out shall be exempt from this requirement. Facilities approaching build out are defined to be built to the ultimate capacity required to accommodate all projected growth within the system's service area. (Added 12/00, Ord. 00-25, Policy 1.2.5-r)

A. The LOS standard OCU has adopted for planning and engineering of its water supply facilities is based on the Florida Department of Environmental Protection's (FDEP's) capacity analysis standards. OCU evaluates the need for water supply facility expansion over a ten year planning horizon if observed maximum day water demands are equal to or greater than 75% of the total permitted maximum day operating capacity of the water supply facilities. If the observed maximum day demand exceeds 75% of the total permitted maximum day operating capacity of the water supply facility, then OCU will be required to submit a Capacity Analysis Report to the FDEP in accordance with the requirements of Section 62-555.348 of the Florida Administrative Code (FAC).

In addition, OCU has developed WSF and Water Reclamation Facility (WRF) treatment capacity percentage based expansion criteria and schedule to address the requirements of Sections 62-555.348 and 62-600.405(8) of the FAC. The expansion criteria and schedule are as follows:

- WSF: When the MDD equals or exceeds 75% of maximum day treatment capacity, submit capacity analysis report.
- WRF: When the maximum 3-month ADF exceeds 50% of the permitted treatment, submit capacity analysis report.
- WSF/WRF: When the MDD / maximum 3-month ADF meets or exceeds 80% of the permitted treatment capacity, start request for proposals for consultant services for preliminary and final design.
- WSF/WRF: When the MDD / maximum 3-month ADF meets or exceeds 85% of the permitted treatment capacity, begin final design.

- 124 • WSF/WRF: When the MDD / maximum 3-month ADF meets or exceeds
125 90% of the permitted treatment capacity, the expansion needs to be in
126 construction.
127 * * *

127 * * *

128 PW1.2.11 When central water service from private utilities or municipalities is required for
129 development in unincorporated Orange County, the level of service standard shall
130 be as listed below.

UTILITY NAME	LOS	
City of Apopka		
Residential	227 gallons per day (gpd)/capita	
Nonresidential	200 per 1,000 square feet	
City of Casselberry	140 gpd/capita	
City of Eatonville	63 gpd/capita	
City of Kissimmee	114.4 gpd/capita	
City of Maitland	350 gpd/equivalent residential connection (erc)	
City of Mount Dora	135 gpd/capita	
Town of Oakland	300 gpd/equivalent residential unit (eru)	
UTILITY NAME	LOS	
City of Ocoee	300 gpd/ERC	
Winter Park Utilities	215 gpd/capita	
City of Winter Garden	350 gpd/eru	
Orlando Utilities Commission		
Land Use	Unit	Gallons/Day
Single Family Residential	Dwelling	360
Multifamily Residential	Dwelling	259
Office	Square Foot	0.15

Commercial	Square Foot	0.13
Hotel	Rooms	187
Industrial	Square Foot	0.22
Government	Square Foot	0.15
Hospital	Square Foot	0.22
Reedy Creek Utilities		
Land Use	Unit	Gallons/Day
Residential	dwelling	350
Hotel (general)	rooms	
Luxury/Deluxe	rooms	200
First Class	rooms	250
Moderate/Economy	rooms	200
Other Resort	Unit	150
Other Resort	Unit	300
Support/Office	square foot	
Retail/Commercial	square foot	0.25
Restaurant	seat	0.3
Theme Parks (general)	guest	25
Theme Parks (water)	guest	80
Central Florida Research Park	Not available	170
East Central Florida Services Inc. ¹	Not available	
Florida Water Service	Not available	
Lake Ola Homeowners	Not available	

Park Manor Utilities	300 gpd/eru
Southern States Utilities	200 gpd/eru
Taft Water Association	140 gpd/capita
Utilities Inc. of Florida (Wedgefield Utilities Inc.)	615 gpd/eru
Zellwood Water Users	Not available
† This system serves the Deseret Ranch's pasture and citrus grove irrigation system and homes on ranch property. NOTE: Orange County Planning Division has distributed surveys to all private and public providers throughout the County in order for the above information to be updated.	

<u>UTILITY NAME</u>	<u>LOS</u>
<u>City of Apopka</u>	<u>177 gallons per day (gpd)/capita</u>
<u>City of Casselberry</u>	<u>100 gpd/capita</u>
<u>City of Eatonville</u>	<u>100 GPD/ capita</u>
<u>City of Kissimmee</u>	<u>96 gpd/capita residential</u>
	<u>120 gpd per room hotel/motel</u>
	<u>0.1 gpd per gross square foot of floor area commercial</u>
	<u>10 gpd per student public or private schools</u>
<u>City of Maitland</u>	<u>350 gpd/equivalent residential connection (erc)</u>
<u>City of Mount Dora</u>	<u>135 gpd/capita</u>
<u>Town of Oakland</u>	<u>119 gpd/capita</u>
<u>City of Ocoee</u>	<u>300 gpd/ERC</u>
<u>Winter Park Utilities</u>	<u>150 gpd/capita average usage</u>
<u>City of Winter Garden</u>	<u>350 gpd/eru</u>
<u>Orlando Utilities Commission</u>	<u>325 g/dwelling unit/day without reclaimed or 160 g/du/d with reclaimed</u>
<u>Land Use</u>	
<u>Single Family Residential</u>	<u>325 g/du/day without reclaimed or 160 g/du/day with reclaimed</u>
<u>Multifamily Residential</u>	<u>200 g/du/day</u>
<u>Office</u>	<u>0.15 g/sqft/ day</u>
<u>Commercial</u>	<u>0.13 g/sqft/ day</u>
<u>Hotel</u>	<u>187 g/room/ day</u>
<u>Industrial</u>	<u>0.22 g/sqft/ day</u>

<u>Government</u>	<u>0.15 g/sqft/day</u>
<u>Hospital</u>	<u>0.22 g/sqft/day</u>
<u>Reedy Creek Utilities</u>	<u>Does not have an adopted LOS per RCU</u>
<u>Central Florida Research Park</u>	<u>Not Available</u>
<u>East Central Florida Services Inc.¹</u>	<u>Not Available</u>
<u>Florida Water Service</u>	<u>Not Available</u>
<u>Lake Ola Homeowners</u>	<u>Not Available</u>
<u>Southern States Utilities</u>	<u>200 gpd/eru</u>
<u>Wedgfield Utilities Inc.</u>	<u>356 gpd/capita</u>
<u>Zellwood Water Users</u>	<u>Not Available</u>
¹ This system serves the Deseret Ranch's pasture and citrus grove irrigation system and homes on ranch property. NOTE: Orange County Planning Division has distributed surveys to all private and public providers throughout the County in order for the above information to be updated.	

* * *

OBJ PW3.1 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 is developed 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 Floridian 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 surface water for potable supply and non-potable augmentation
- Investigate additional management and supply options such as ~~aquifer storage and recovery~~, reservoir storage, and stormwater reuse
- Utilize aquifer storage and recovery for supply management

POLICIES

PW3.1.1 The Work Plan shall be consistent with the potable water level-of-service (LOS) standards established in Policies PW1.2.5, ~~PW1.2.5.1~~ and PW1.2.11.

* * *

PW3.1.6 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.

- ~~Western Regional WSF/Wellfield Phase III (treatment plant expansion and new Lower Floridan aquifer wells) (CIS 1532).~~
- ~~Horizon West WSF/Wellfield (new treatment plant and wells) (CIS 1506).~~
- ~~Malcolm Road WSF/Wellfield (new treatment plant and wells) (CIS 1506).~~
- ~~Southern Regional WSF/Wellfield, Phase I (new plant and wells) (CIS 1498).~~
- ~~Eastern Regional WSF, Phases IIB and III (plant and wellfield expansions) (CIS 1497).~~
- ~~East Service Area Potable Water Storage and Repump Facility (CIS 1498).~~
- ~~East Service Area South Service Area Water Transmission Main Interconnection (CIS 1450 and 1508).~~
- 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,

- 194 already permitted) with a capacity of 2.2 mgd, AADF, to be completed by 2018.
 195 (West Service Area, CIS 1532)
- 196 • Malcolm Road WSF/Wellfield, currently in design (treatment facility) and
 197 construction (wells), includes a new treatment plant and Floridan aquifer
 198 wellfield, each with capacity of 4.0 mgd, AADF. Wells are planned for
 199 completion by 2017, and treatment plant by 2019. (Southwest Service Area, CIS
 200 1557)
 - 201 • Eastern Regional WSF Phase IIIB Expansion, with final design and construction
 202 planned for completion in September 2017 and February 2020, respectively,
 203 increases treatment capacity from 50 mgd to 62.4 mgd AADF. (East Service
 204 Area, CIS 1554-02)
 - 205 • East Service Area-South Service Area Water Transmission Main
 206 Interconnection, planned to be constructed by 2019, will increase system
 207 flexibility and reliability. (CIS 1450 and 1508)
 - 208 • I-Drive Booster Pump Station, currently in the construction phase and planned
 209 for completion in 2018, will eventually transmit water from the Cypress Lake
 210 brackish groundwater AWS project. (CIS 1498-10).
- 211 PW3.1.7 Development of Orange County's reclaimed water system is a critical component
 212 of the County's water supply strategy. Orange County's capacity-related strategy
 213 and capital improvements projects for water reclamation and reuse facilities are
 214 summarized below consistent with the Work Plan. These projects and project
 215 components, including estimated costs and funding sources, are adopted in the
 216 County's Capital Improvements Element as part of the 5-year schedule of capital
 217 improvements. Project numbers are listed as appropriate for cross reference to
 218 Index by Financial Unit in the capital improvements schedule.
- 219 • ~~Northwest WRF Phase III Expansion (treatment capacity increase) (CIS 1435).~~
 - 220 • ~~Northwest WRF RIB System Expansion (CIS 1496).~~
 - 221 • ~~Northwest WRF Reclaimed Water Project (reclaimed water storage, pumping,~~
 222 ~~distribution and capacity for reuse) (CIS 1496).~~
 - 223 • ~~Southwest WRF, Phases I and II (new treatment plant, outside 5 year schedule)~~
 224 ~~(CIS 1507)~~
 - 225 • ~~Southwest Service Area Reclaimed Water Reuse System (reuse distribution~~
 226 ~~system) (CIS 1542).~~
 - 227 • ~~South WRF, Phase V Expansion (treatment capacity expansion) (CIS 1555).~~
 - 228 • ~~South Service Area Reclaimed Water and Reuse System Expansion (CIS 1411).~~

229		• Eastern WRF, Phases IVC, V, and Re-Rating (treatment capacity expansions)
230		(CIS 1538).
231		• Eastern Regional Reclaimed Water Distribution System (joint project with the
232		City of Orlando).
233		• East Service Area (a.k.a. Southeastern, Eastern WRF) Reclaimed Water Reuse
234		System (expansion of reclaimed water pumping, storage, and distribution
235		system facilities) (CIS 1483).
236		• <u>Northwest WRF Phase IIIB Expansion, planned to be constructed by 2025, will</u>
237		<u>increase the capacity of the chlorine contact chamber, increasing the overall</u>
238		<u>treatment capacity of the facility by 1.0 mgd, AADF. (West Service Area, CIS</u>
239		<u>1435)</u>
240		• <u>Northwest WRF Reclaimed Main Extension to Apopka, planned to be</u>
241		<u>constructed by 2022, and expected to add 2.5 mgd to 3.0 mgd, AADF to the</u>
242		<u>existing capacity of the reuse system in the West Service Area. (West Service</u>
243		<u>Area, CIS 1435)</u>
244		• <u>Southwest WRF Phase I, planned to be constructed by 2025, for a total</u>
245		<u>treatment capacity of 5.0 mgd, AADF. Further phases are planned to provide</u>
246		<u>additional capacity and to receive flow diversion from the South Service Area.</u>
247		<u>(Southwest Service Area, CIS 1507)</u>
248		• <u>South WRF Phase V Expansion, planned completion of March 2019, will</u>
249		<u>increase treatment capacity by 13 mgd from 43.0 to 56.0 mgd, AADF. (South</u>
250		<u>Service Area, CIS 1555-01)</u>
251		• <u>Eastern WRF Phase V Improvements, planned for completion by May 2018,</u>
252		<u>will increase treatment capacity from 19.0 to 24.0 mgd, AADF. (East Service</u>
253		<u>Area, CIS 1538)</u>
254		• <u>Eastern WRF Phase VI Expansion, planned to be completed by 2027, will</u>
255		<u>increase treatment capacity from 24.0 to 29.0 mgd, AADF. (East Service Area,</u>
256		<u>CIS 1538)</u>
257		• <u>Southeast Reclaimed Water System Expansion Project, will be constructed</u>
258		<u>throughout the planning horizon to distribute reclaimed water to meet reuse</u>
259		<u>irrigation demands in the East Service Area, estimated to be as much as 9 mgd,</u>
260		<u>AADF by 2020. (CIS 1483, CUP #3317 Condition 26)</u>
261	PW3.1.8	Development of alternative water supply projects is a critical component of the
262		County's water supply strategy and necessary to meet future water demands.
263		Orange County's alternative water supply projects including surface water capital
264		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.

~~• St. Johns River/Taylor Creek Reservoir Water Supply Project (new regional, cooperative surface water supply) (CIS 1550). Funding for this alternative water supply project will be shared by Orange County, the other five project utility partners, the SJRWMD, and the SFWMD.~~

~~• Kissimmee River Basin Lake Tohopekaliga Potable Water Supply Project (new regional, cooperative surface water supply at the conceptual phase; outside 5 year schedule of capital improvements). Funding for this alternative water supply project will be shared with other central Florida potable water utility partners, with additional cooperative funding from the state (CIS 1550).~~

~~• St. Johns River at SR 46 Water Supply Project (conceptual surface water supply project, outside Work Plan planning horizon).~~

~~• Aquifer Storage and Recovery (ASR) Pilot Well Project, a cooperative study with the SJRWMD (CIS 1550).~~

• 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.

* * *

Section 5. Effective Dates for Ordinance and Amendments.

(a) This ordinance shall become effective as provided by general law.

(b) In accordance with Section 163.3184(3)(c)4., Florida Statutes, no plan amendment adopted under this ordinance becomes effective until 31 days after the DEO notifies the County that the plan amendment package is complete. However, if an amendment is timely challenged, the amendment shall not become effective until the DEO or the Administration Commission issues a final order determining the challenged amendment to be in compliance.

(c) No development orders, development permits, or land uses dependent on any of these amendments may be issued or commence before the amendments have become effective.

ADOPTED THIS 9th DAY OF MAY, 2017.

ORANGE COUNTY, FLORIDA
By: Board of County Commissioners

By: _____
Teresa Jacobs
Orange County Mayor

ATTEST: Phil Diamond, CPA, County Comptroller
As Clerk to the Board of County Commissioners

Deputy Clerk