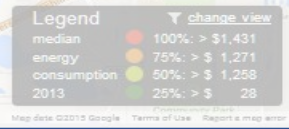
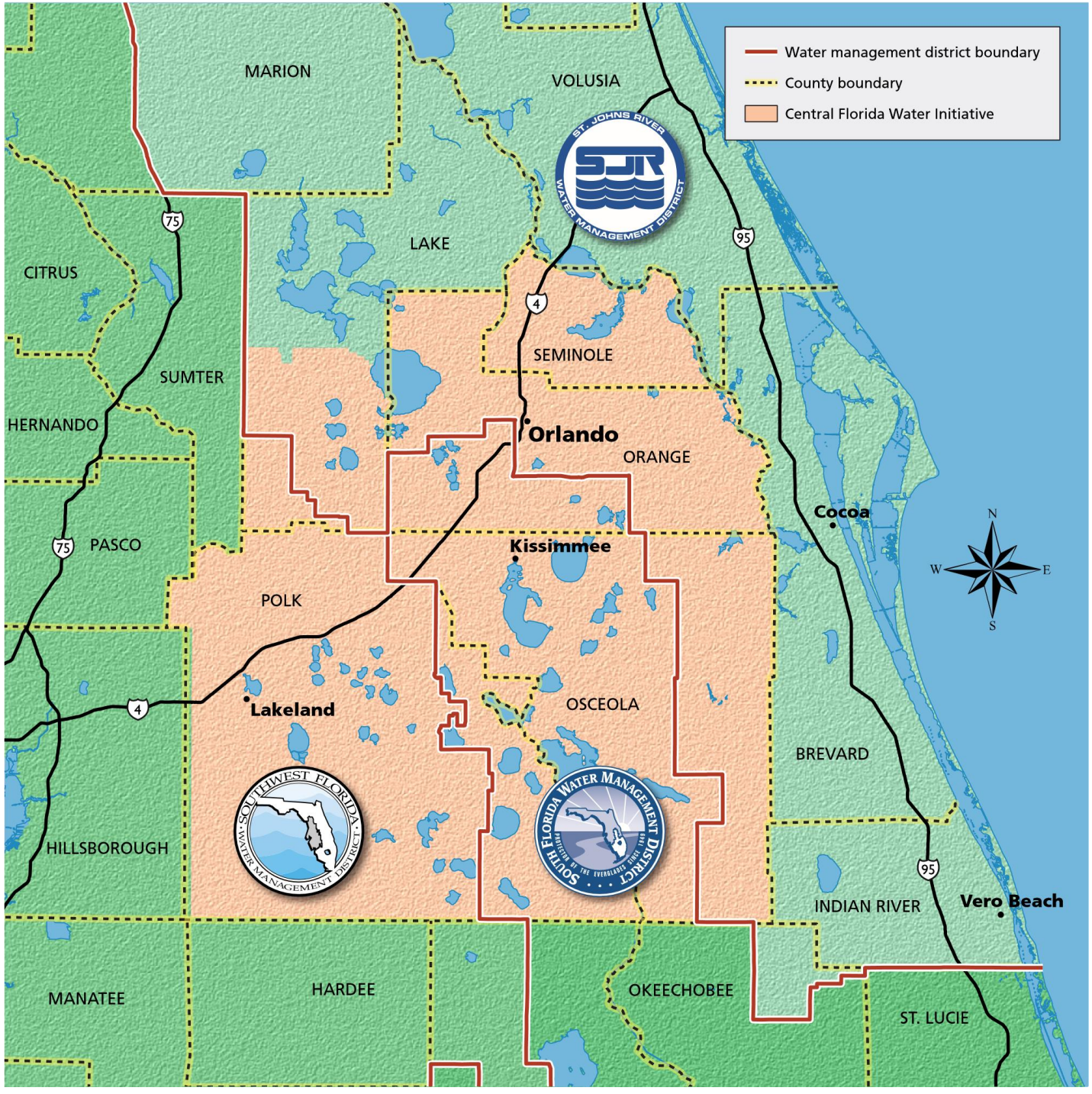
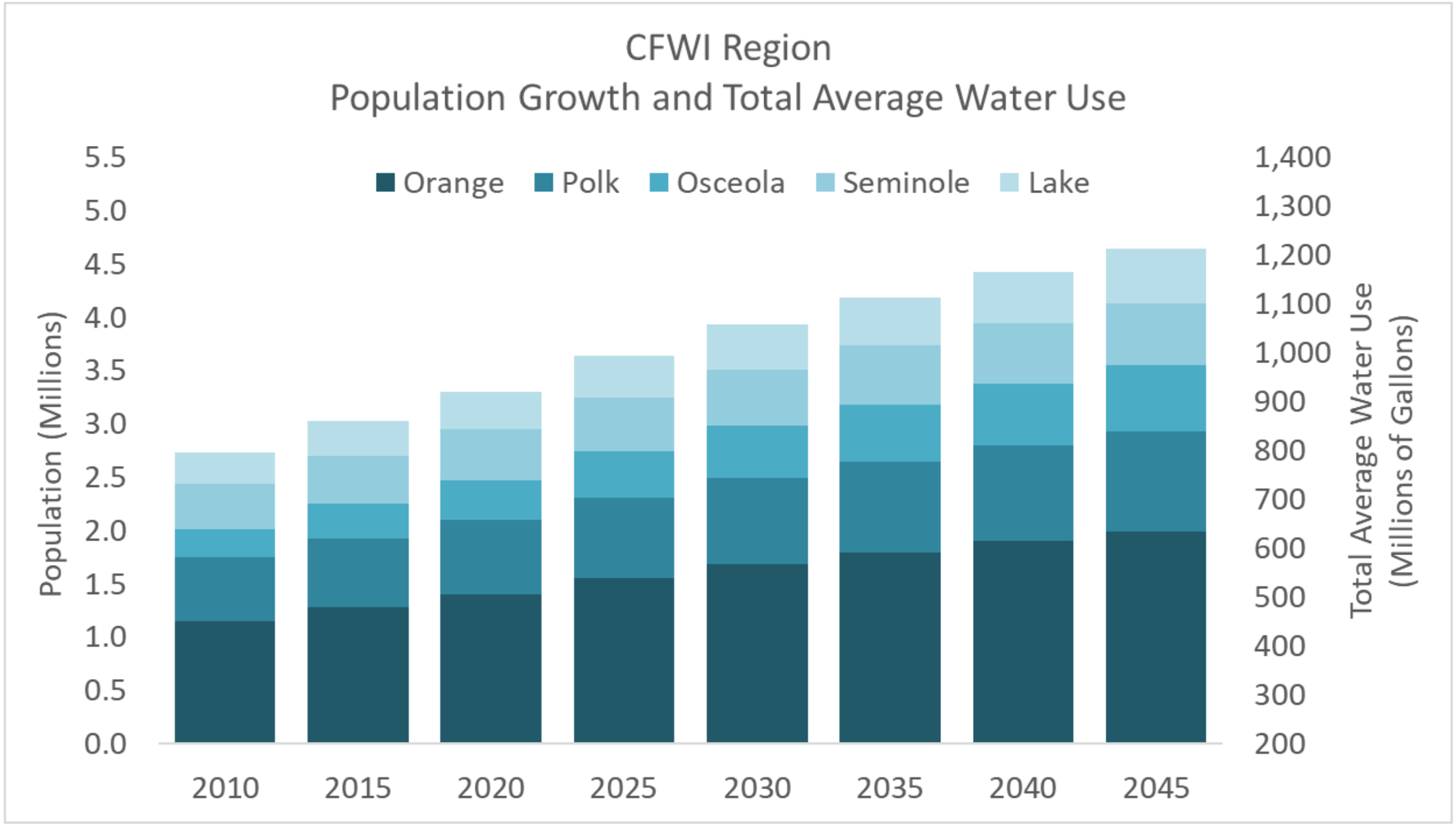
H2OSAV: A Water Conservation Program Data Hub

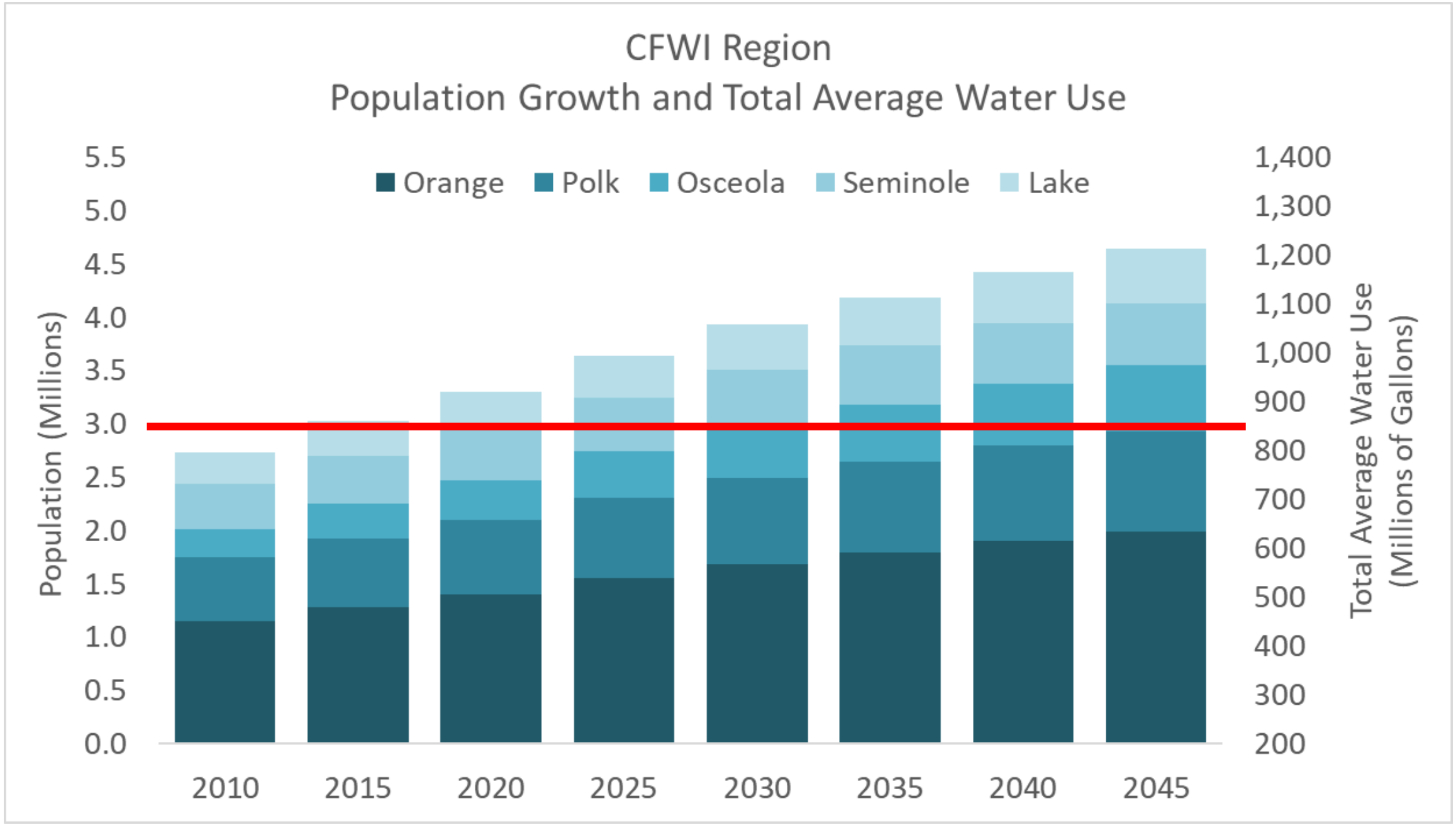
2018 Water Conservation
Expo and Vendor Fair
March 2nd, 2018
West Palm Beach, Florida

Nicholas Taylor, University of Florida - IFAS
James Fletcher, University of Florida - IFAS
Michael Sweeney, Toho Water Authority
Bradley Spatz, University of Florida - IFAS
Pierce Jones, University of Florida - IFAS




Water management district boundary
County boundary
Central Florida Water Initiative
MARION
VOLUSIA
LAKE
CITRUS
SUMTER
HERNANDO
PASCO
SEMINOLE
ORANGE
Orlando
Cocoa
Kissimmee
POLK
Lakeland
OSCEOLA
BREVARD
HILLSBOROUGH
INDIAN RIVER
Vero Beach
MANATEE
HARDEE
OKEECHOBEE
ST. LUCIE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
75
95
4
N
W
E
S


CFWI Region
Population Growth and Total Average Water Use
Orange
Polk
Osceola
Seminole
Lake
Population (Millions)
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Total Average Water Use (Millions of Gallons)
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
2010
2015
2020
2025
2030
2035
2040
2045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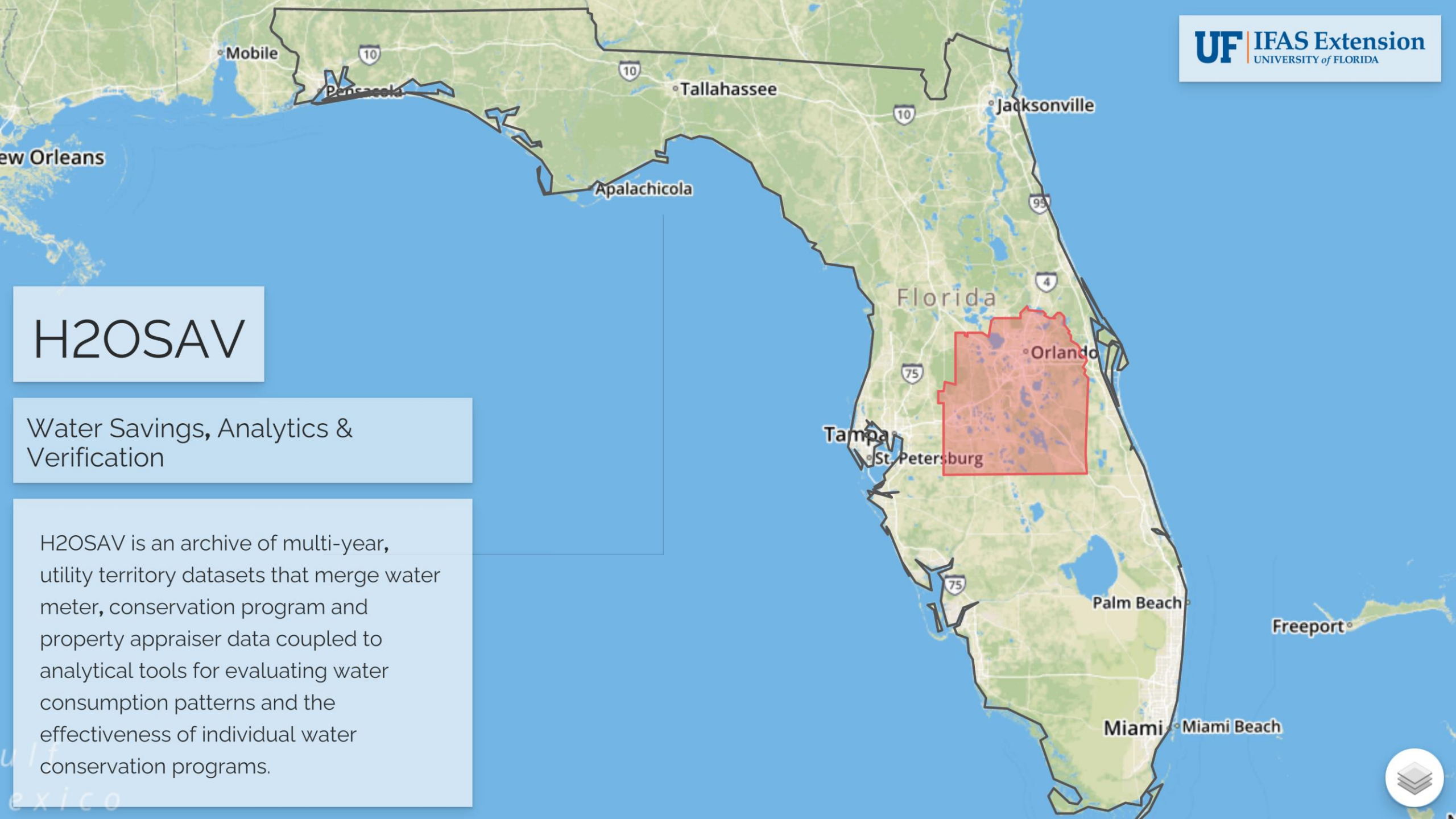
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
Total Average Water Use
(Millions of Gallons)
2010
2015
2020
2025
2030
2035
2040
2045



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H2OSAV

Water Savings, Analytics & Verification

H2OSAV is an archive of multi-year, utility territory datasets that merge water meter, conservation program and property appraiser data coupled to analytical tools for evaluating water consumption patterns and the effectiveness of individual water conservation programs.

H2OSAV - Water Savings, Analytics & Verification

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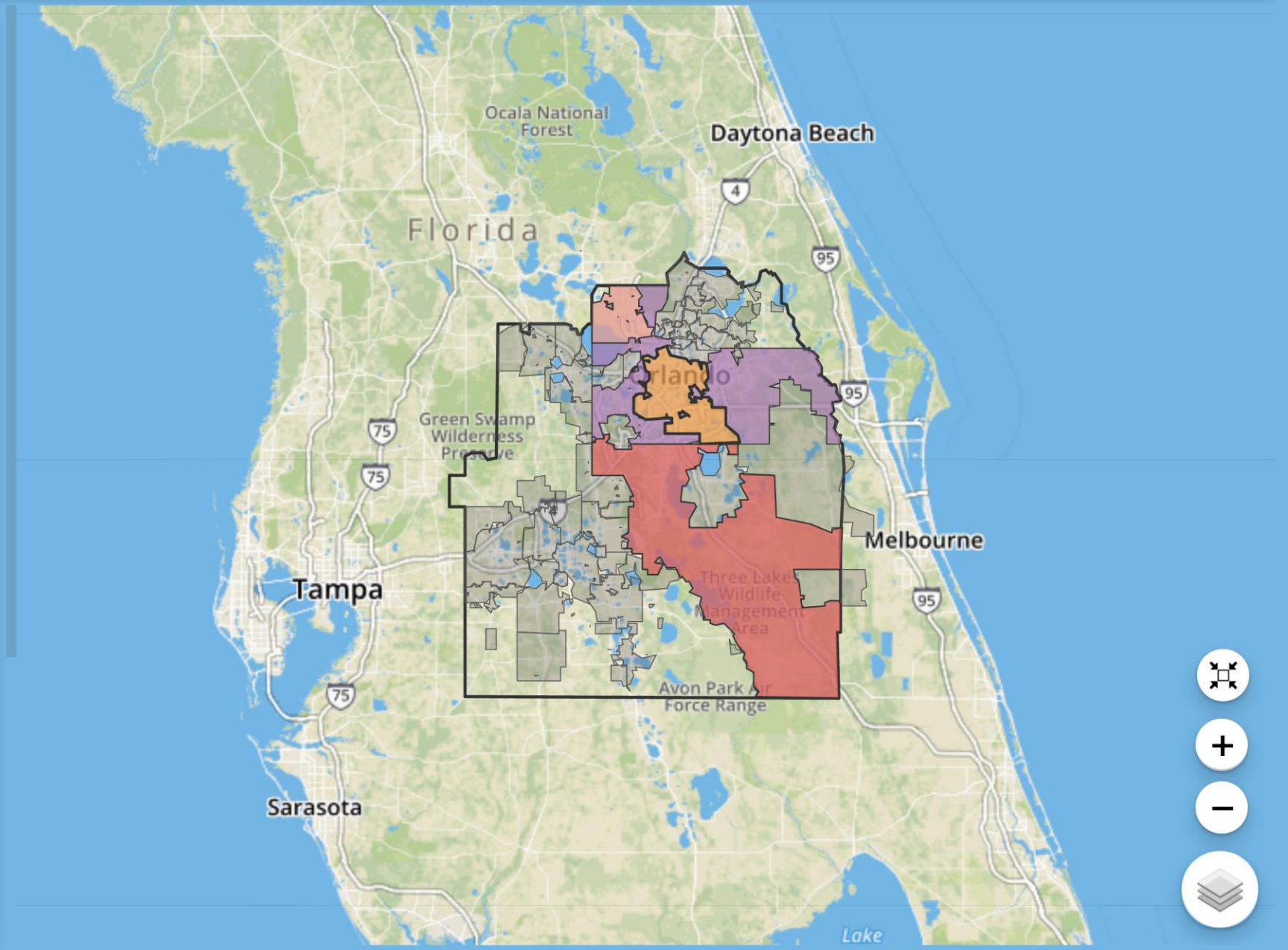
Overview

In its 2015 final Regional Water Supply Plan, the Central Florida Water Initiative (CFWI) Conservation Planning Sub-Team estimated 28 mgd of potential additional water conservation savings in the public supply sector with the caveat that the evaluation process revealed a **lack of shared knowledge about existing conservation programs and virtually no rigorous analytics on the programs' impacts**. H2OSAV targets utilities in the CFWI regional planning area in an effort to address these evaluation issues.

This beta version of H2OSAV is being developed in partnership with **Tohopekaliga Water Authority (TWA), City of Apopka (Apopka), Orlando Utilities Commission (OUC),** and **Orange County Public Utilities (OCPU)**. In combination these utilities cover 37% of the CFWI region and in 2015 accounted for 45% of its water demand.



H2OSAV - Water Savings, Analytics & Verification

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Overview

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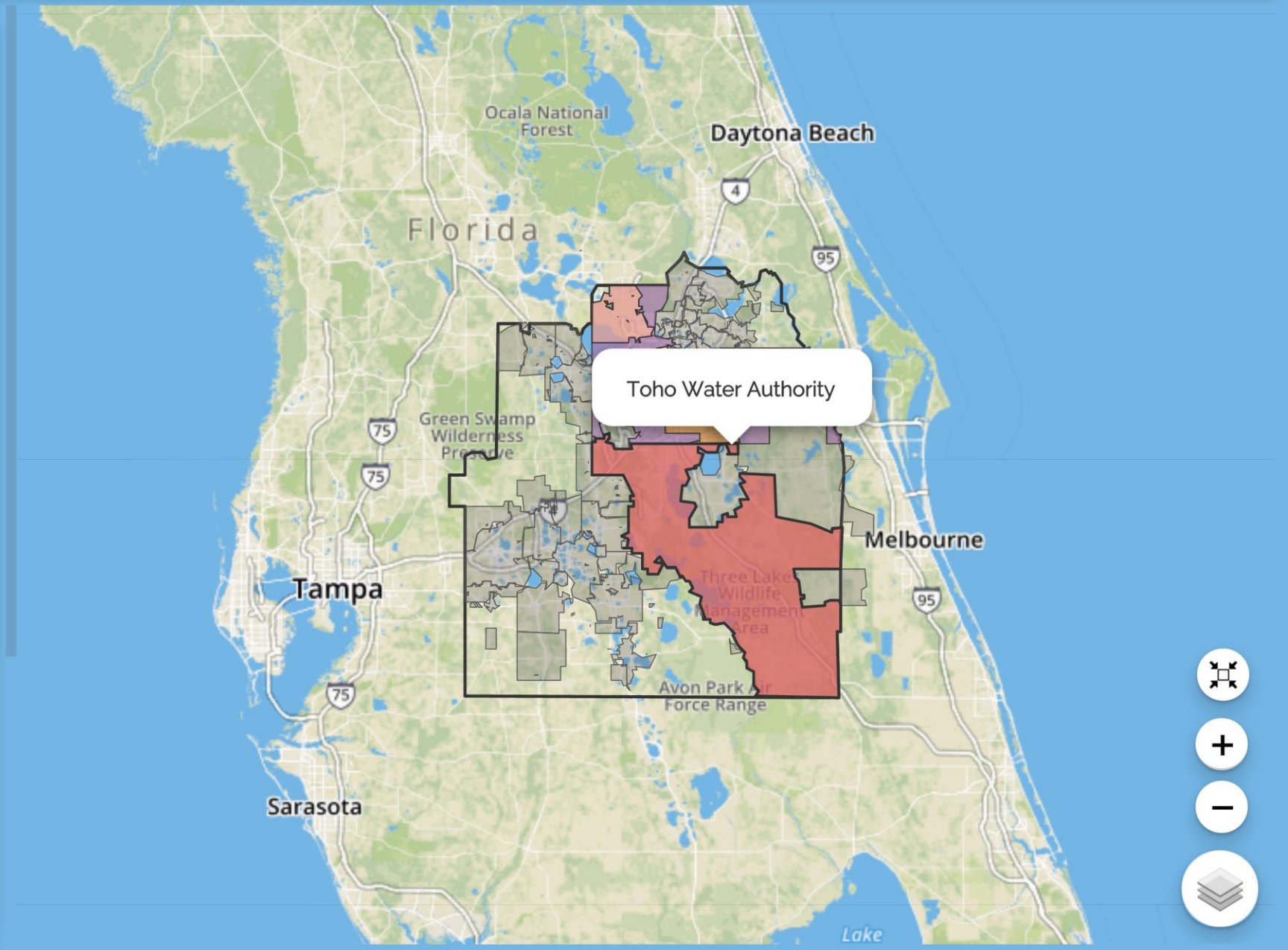

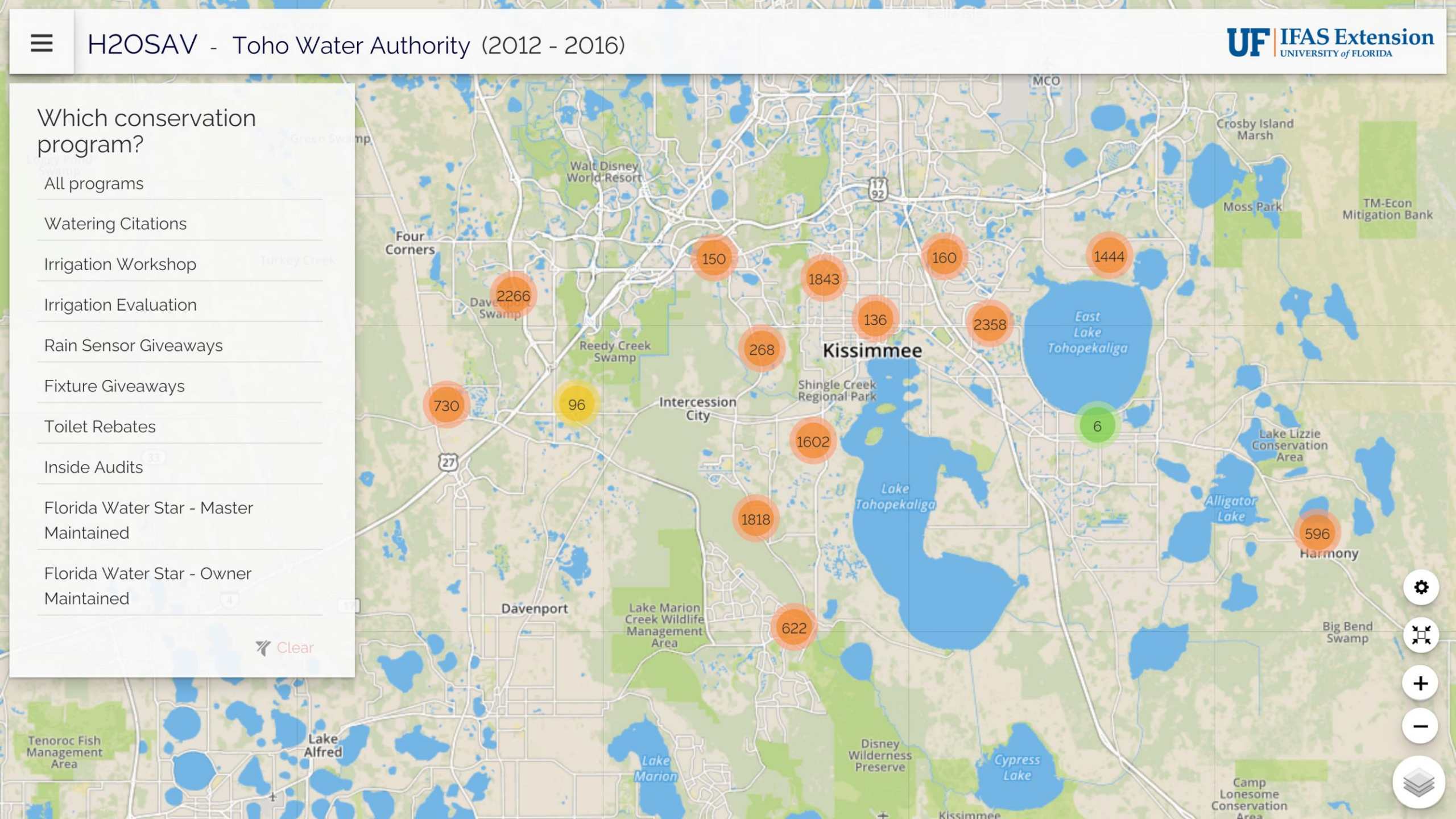
H2OSAV - Toho Water Authority (2012 - 2016)
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Which conservation program?
All programs
Watering Citations
Irrigation Workshop
Irrigation Evaluation
Rain Sensor Giveaways
Fixture Giveaways
Toilet Rebates
Inside Audits
Florida Water Star - Master Maintained
Florida Water Star - Owner Maintained
Clear
150
1843
160
1444
2266
136
2358
268
730
96
1602
6
1818
596
622
Kissimmee
Davenport
Harmony
Walt Disney World Resort
Four Corners
Reedy Creek Swamp
Intercession City
Shingle Creek Regional Park
East Lake Tohopekaliga
Lake Tohopekaliga
Alligator Lake
Lake Lizzie Conservation Area
Crosby Island Marsh
Moss Park
TM-Econ Mitigation Bank
Lake Marion Creek Wildlife Management Area
Big Bend Swamp
Tenoroc Fish Management Area
Lake Alfred
Lake Marion
Disney Wilderness Preserve
Cypress Lake
Camp Lonesome Conservation Area
MCO
17
92
27

H2OSAV - Toho Water Authority (2012 - 2016)

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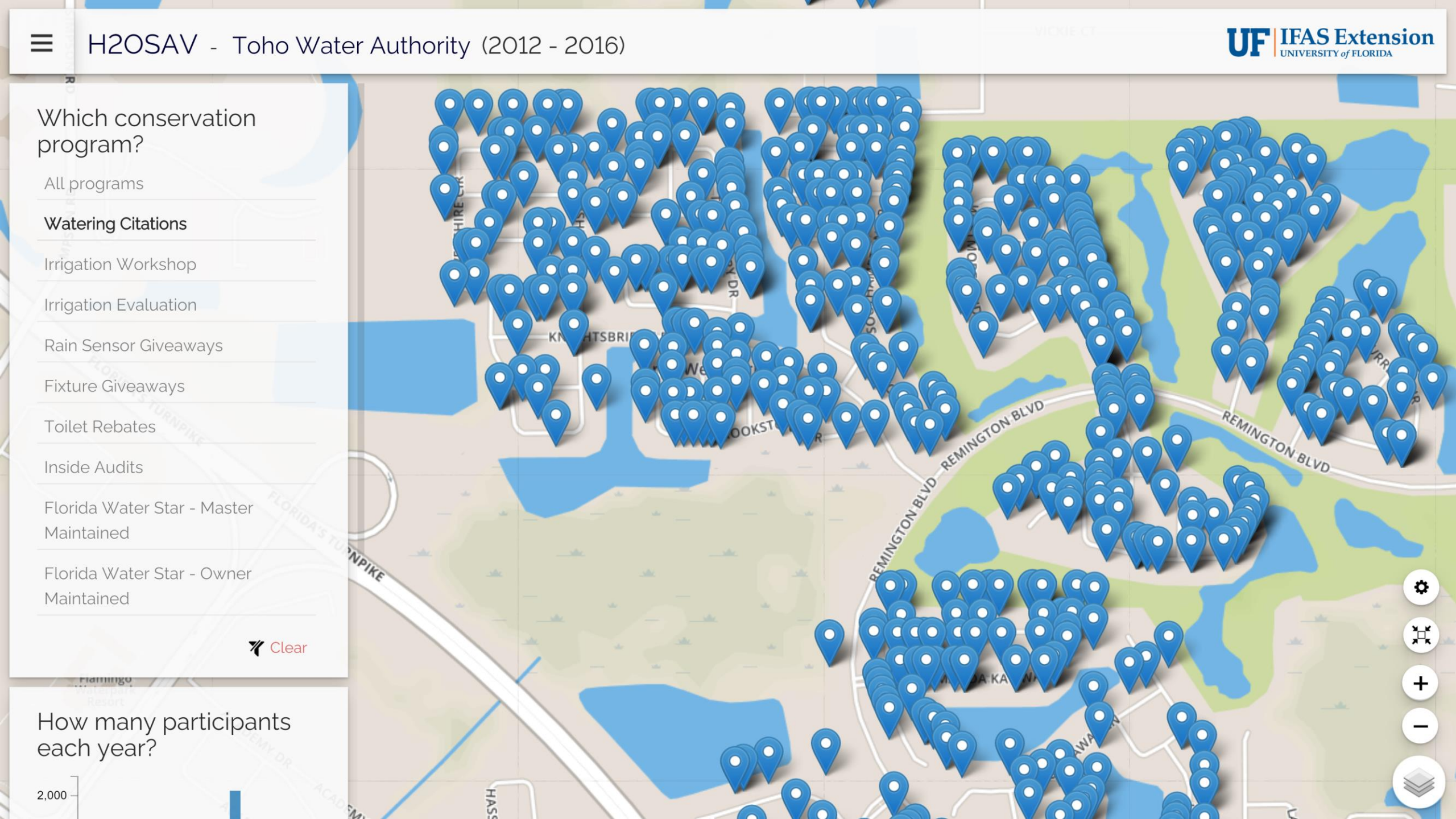
Which conservation program?

- All programs
- **Watering Citations**
- Irrigation Workshop
- Irrigation Evaluation
- Rain Sensor Giveaways
- Fixture Giveaways
- Toilet Rebates
- Inside Audits
- Florida Water Star - Master Maintained
- Florida Water Star - Owner Maintained

Clear

How many participants each year?



H2OSAV - Toho Water Authority (2012 - 2016)

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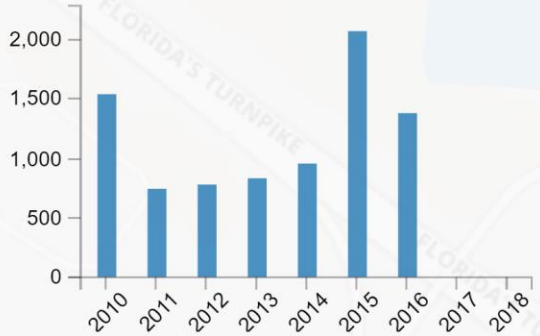
Florida Water Star - Master Maintained

Florida Water Star - Owner Maintained

Clear

How many participants each year?



Clear

How well did the program work?

Click here to see the performance statistics.

REMINGTON BLVD

H2OSAV - Toho Water Authority (2012 - 2016)

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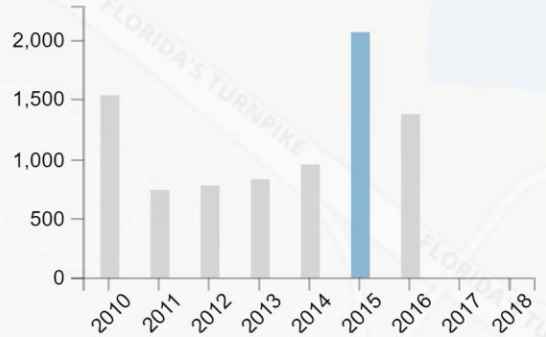
Florida Water Star - Master Maintained

Florida Water Star - Owner Maintained

Clear

How many participants each year?



Clear

How well did the program work?

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H2OSAV - Toho Water Authority (2012 - 2016)

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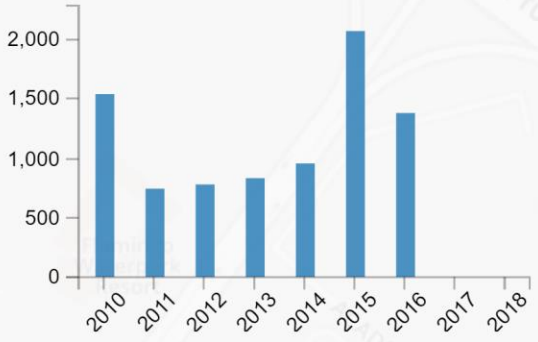
- Rain Sensor Giveaways
- Fixture Giveaways
- Toilet Rebates
- Inside Audits
- Florida Water Star - Master Maintained
- Florida Water Star - Owner Maintained

Clear

How many participants each year?

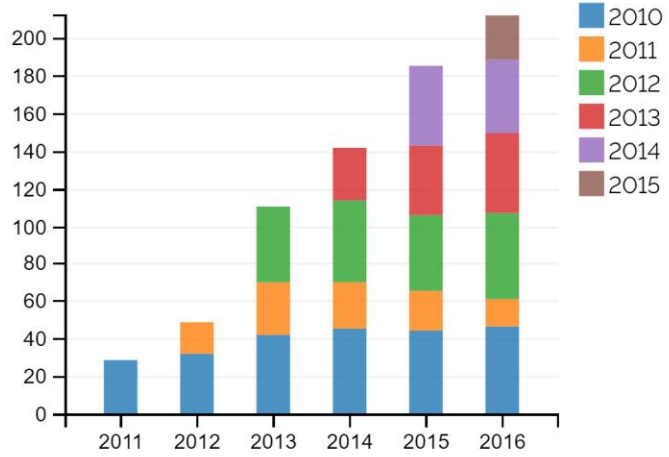


Clear

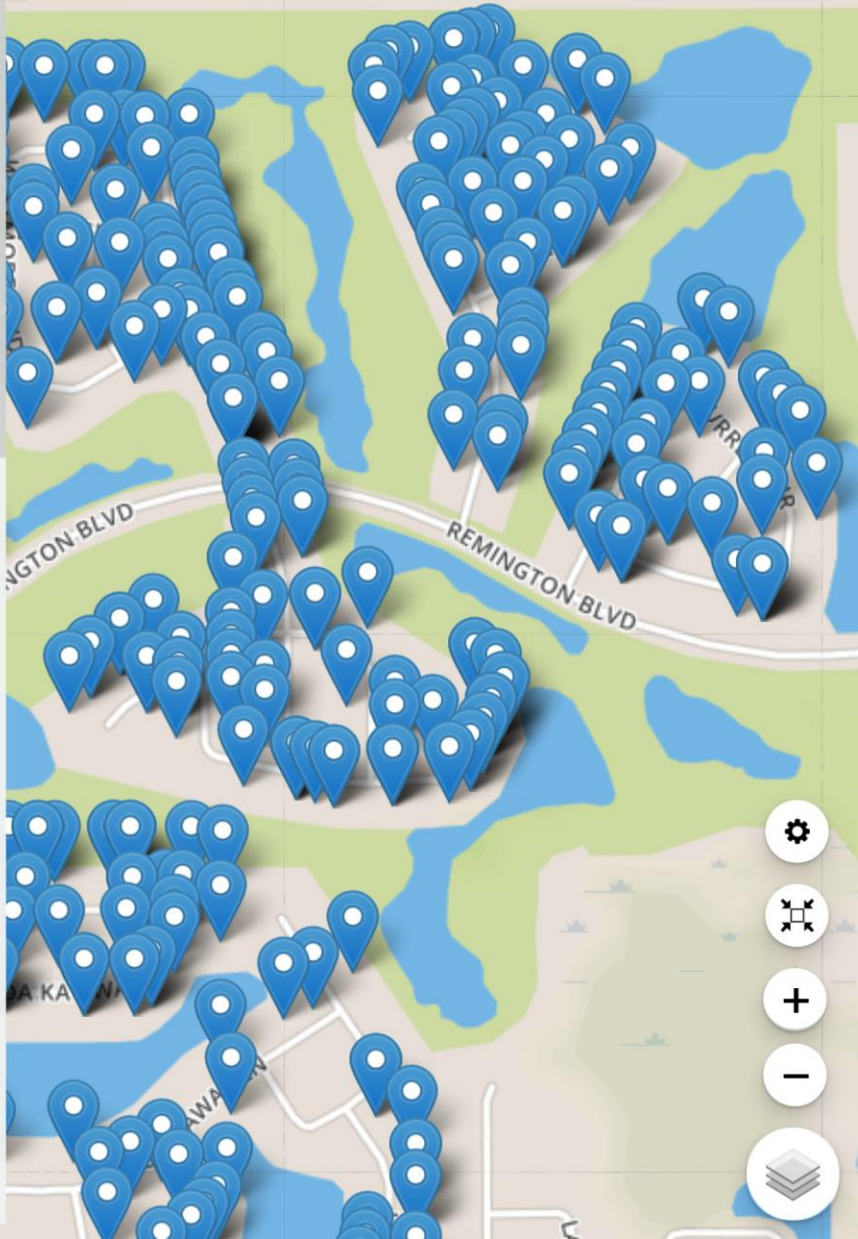
Savings - Watering Citations

Average (gal/day/household) | Cumulative (Mgal)

This chart displays **average daily water savings,** in gallons per household per day, for each program group in each year following participation. Savings were calculated for single-family, detached homes that were occupied for the full year before participation and for the full year of analysis.



The table below gives detailed results of the analysis. Participation year, total number of participants (**N**), analysis year, number of participants analyzed (**Nt**), average daily water savings, and lower and upper 95% confidence limits for average daily water savings are shown. The Average Daily Savings Chart (displayed above) shows the average daily savings values from this table. The Cumulative Savings Chart shows the estimated



H2OSAV - Toho Water Authority (2012 - 2016)

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2016

Area	Subdivisions	Parcels
1,148 sq. miles	1,054	75,367

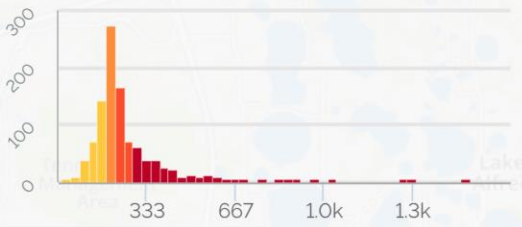
Potable meters	Reclaimed meters	Irrigation meters
75,367	14,153	14,158

Avg. total usage

200

gal/day/HH

Potable Reclaimed Irrigation



Avg. usage

gal/day/HH

- Quartile 1 (0–166)
- Quartile 2 (166–197)
- Quartile 3 (198–272)
- Quartile 4 (272–1,518)

Kissimmee
Davenport
Winter Haven
Dundee
Intercession City
Four Corners
Harmony
Walt Disney World Resort
Reedy Creek Swamp
Davenport Swamp
Shingle Creek Regional Park
East Lake Tohopekaliga
Lake Tohopekaliga
Lake Lizzie Conservation Area
Alligator Lake
John H Bay
Big Bend Swamp
Lake Marion Creek Wildlife Management Area
Disney Wilderness Preserve
Lake Marion
Cypress Lake
Kissimmee Chain of Lakes
Lake Hatchineha
Hatchineha Ranch Mitigation Bank
Allen David Broussard Catfish Creek
Lake Pierce
Camp Lonesome Conservation Area
Triple N Ranch Wildlife Management Area
Whaley Conservation Easement
Circle B Bar Reserve
Moss Park
Marsh
17 92
27
523

H2OSAV - Toho Water Authority (2012 - 2016)

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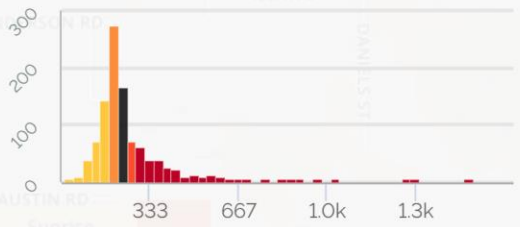
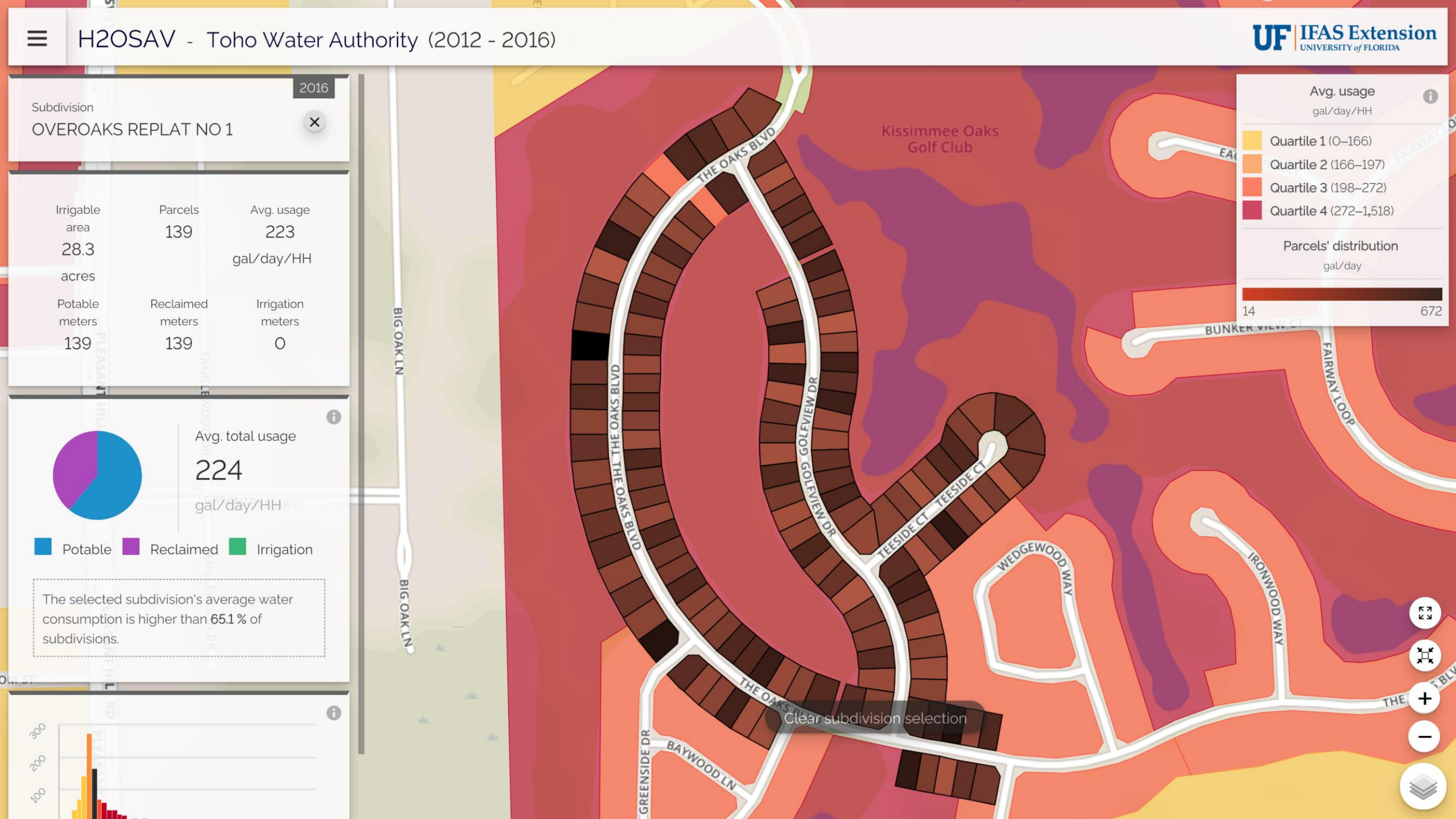


Overoaks Replat No 1

Avg. usage

gal/day/HH

- Quartile 1 (0–166)
- Quartile 2 (166–197)
- Quartile 3 (198–272)
- Quartile 4 (272–1,518)


H2OSAV - Toho Water Authority (2012 - 2016)
UF IFAS Extension UNIVERSITY of FLORIDA
2016
Subdivision
OVEROAKS REPLAT NO 1
Irrigable area
28.3
acres
Parcels
139
Avg. usage
223
gal/day/HH
Potable meters
139
Reclaimed meters
139
Irrigation meters
0
Avg. total usage
224
gal/day/HH
Potable
Reclaimed
Irrigation
The selected subdivision's average water consumption is higher than 65.1 % of subdivisions.
Avg. usage
gal/day/HH
Quartile 1 (0–166)
Quartile 2 (166–197)
Quartile 3 (198–272)
Quartile 4 (272–1,518)
Parcels' distribution
gal/day
14
672
Kissimmee Oaks Golf Club
THE OAKS BLVD
GOLFVIEW DR
TEESIDE CT
BUNKER VIEW CT
FAIRWAY LOOP
WEDGEWOOD WAY
IRONWOOD WAY
BIG OAK LN
BAYWOOD LN
GREENSIDE DR
Clear subdivision selection

H2OSAV - Toho Water Authority (2012 - 2016)

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2016

Subdivision

OVEROAKS REPLAT NO 1

Irrigable area	Parcels	Avg. usage
28.3 acres	139	223 gal/day/HH

Potable meters	Reclaimed meters	Irrigation meters
139	139	0

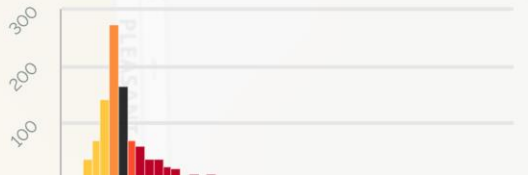
Avg. potable

136

gal/day/HH

Potable Reclaimed Irrigation

The selected subdivision's average water consumption is higher than **65.1 %** of subdivisions.



Avg. usage

gal/day/HH

Quartile 1 (0–166)

Quartile 2 (166–197)

Quartile 3 (198–272)

Quartile 4 (272–1,518)

Parcels' distribution

gal/day

14 672

Kissimmee Oaks Golf Club

THE OAKS BLVD

GOLFVIEW DR

TEESIDE CT

BUNKER VIEW CT

FAIRWAY LOOP

WEDGEWOOD WAY

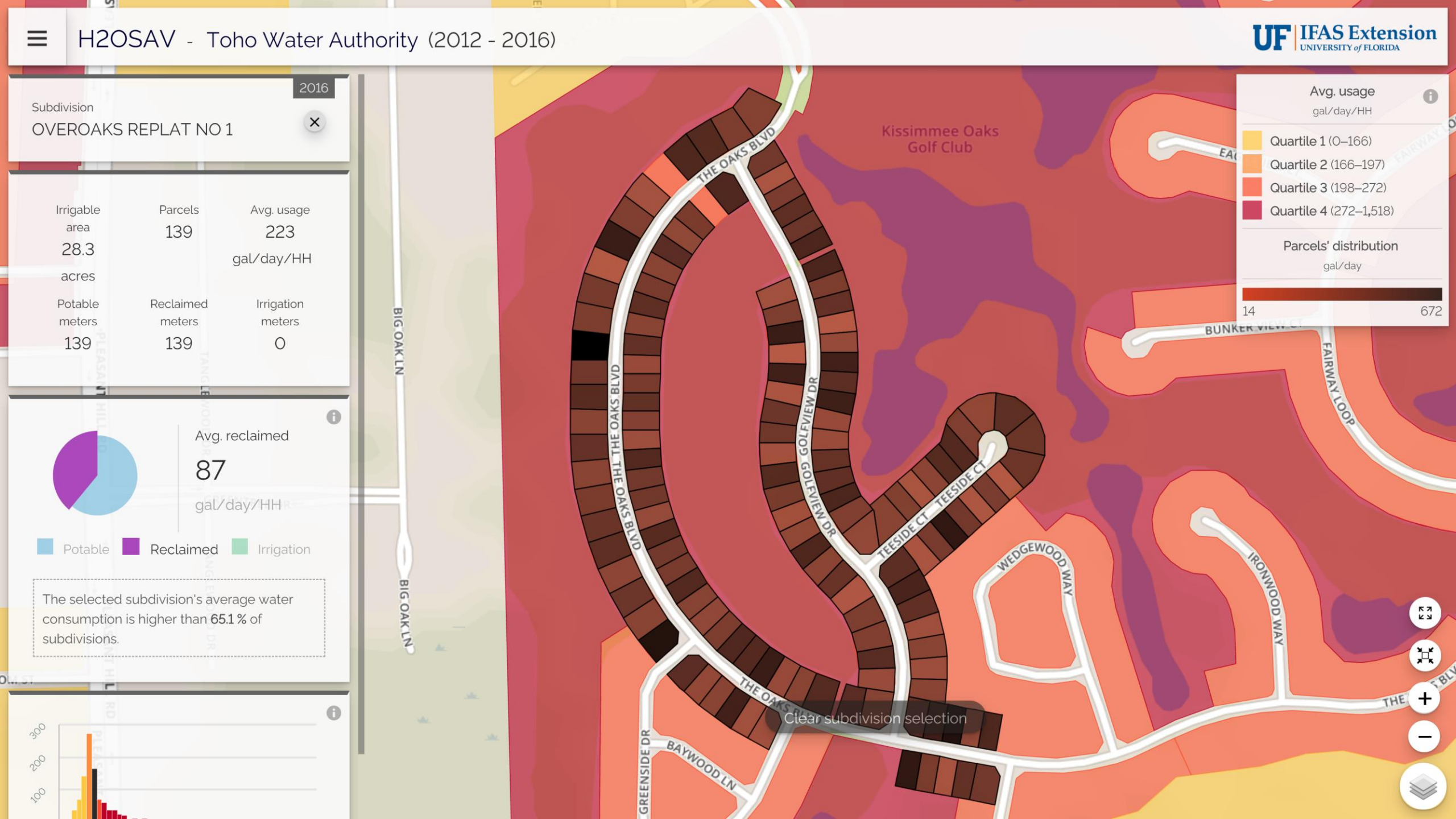
IRONWOOD WAY

BIG OAK LN

BAYWOOD LN

GREENSIDE DR

Clear subdivision selection


H2OSAV - Toho Water Authority (2012 - 2016)
UF IFAS Extension UNIVERSITY of FLORIDA
2016
Subdivision
OVEROAKS REPLAT NO 1
Irrigable area
28.3
acres
Parcels
139
Avg. usage
223
gal/day/HH
Potable meters
139
Reclaimed meters
139
Irrigation meters
0
Avg. reclaimed
87
gal/day/HH
Potable
Reclaimed
Irrigation
The selected subdivision's average water consumption is higher than 65.1 % of subdivisions.
Avg. usage
gal/day/HH
Quartile 1 (0–166)
Quartile 2 (166–197)
Quartile 3 (198–272)
Quartile 4 (272–1,518)
Parcels' distribution
gal/day
14
672
Kissimmee Oaks Golf Club
THE OAKS BLVD
GOLFVIEW DR
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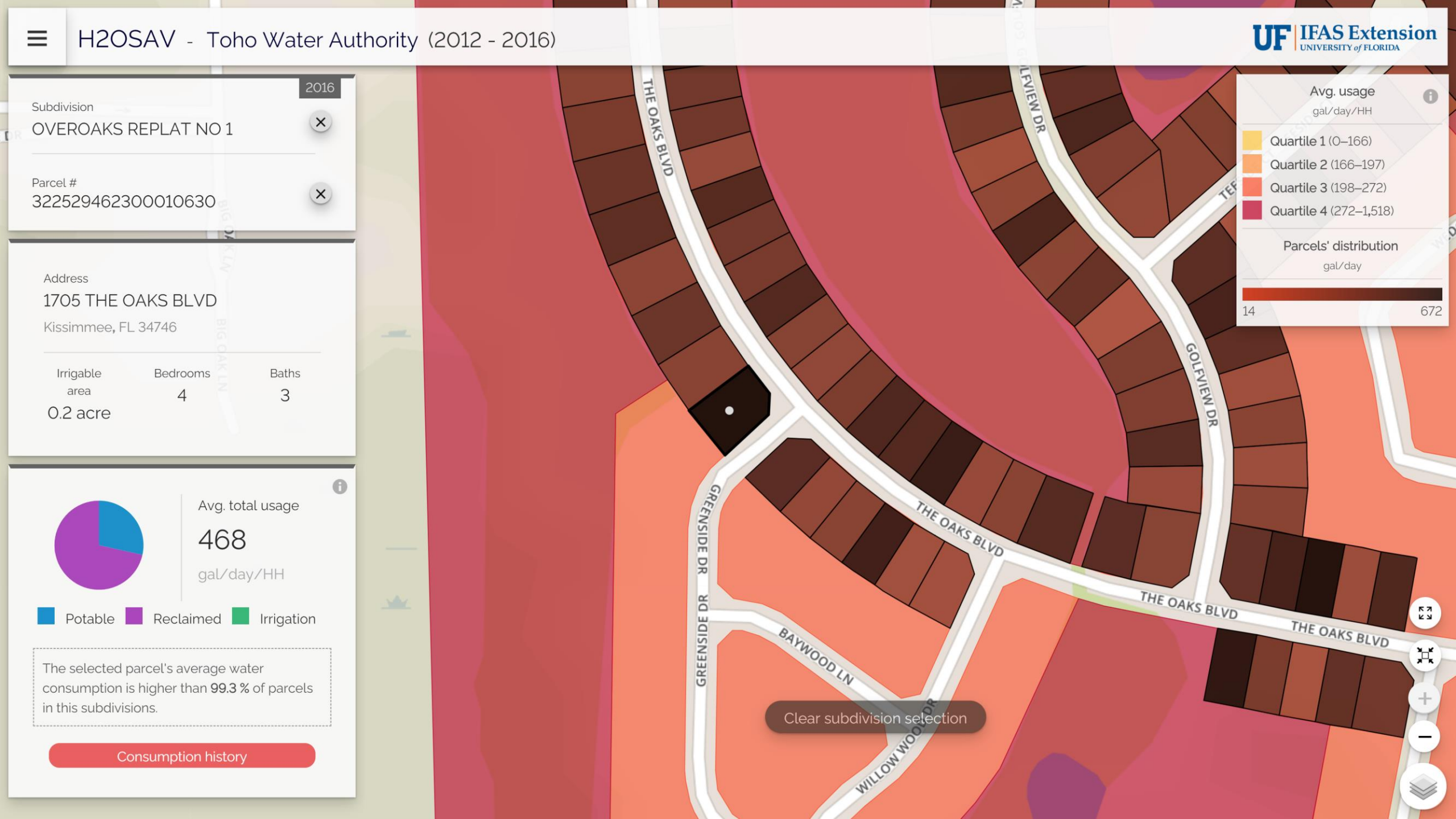
IRONWOOD WAY
BIG OAK LN
BAYWOOD LN
GREENSIDE DR
Clear subdivision selection


H2OSAV - Toho Water Authority (2012 - 2016)
UF IFAS Extension UNIVERSITY of FLORIDA
2016
Subdivision
OVEROAKS REPLAT NO 1
Parcel #
322529462300010630
Address
1705 THE OAKS BLVD
Kissimmee, FL 34746
Irrigable area
0.2 acre
Bedrooms
4
Baths
3
Avg. total usage
468
gal/day/HH
Potable
Reclaimed
Irrigation
The selected parcel's average water consumption is higher than 99.3 % of parcels in this subdivisions.
Consumption history
Avg. usage
gal/day/HH
Quartile 1 (0–166)
Quartile 2 (166–197)
Quartile 3 (198–272)
Quartile 4 (272–1,518)
Parcels' distribution
gal/day
14
672
THE OAKS BLVD
GOLFVIEW DR
GREENSIDE DR
BAYWOOD LN
WILLOW WOOD DR
Clear subdivision selection

H2OSAV - Toho Water Authority (2012 - 2016)

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2016

Subdivision
OVEROAKS REPLAT NO 1

Parcel #
322529462300010630

Address
1705 THE OAKS BLVD
Kissimmee, FL 34746

Irrigable area	Bedrooms	Baths
0.2 acre	4	3

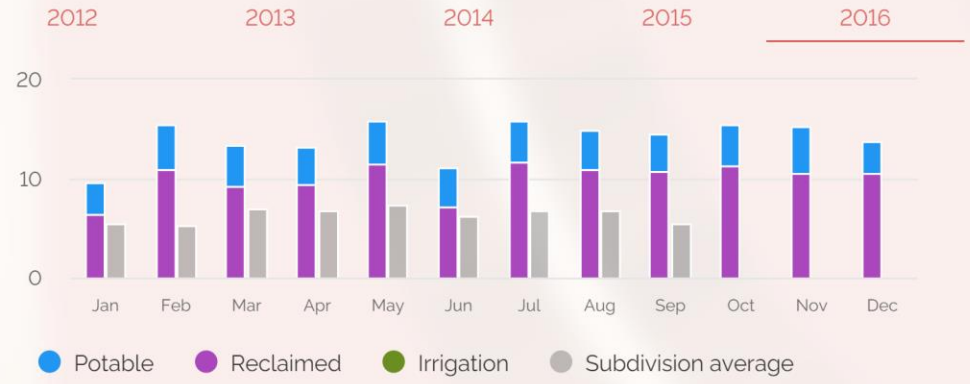
Avg. total usage
468
gal/day/HH

Potable Reclaimed Irrigation

The selected parcel's average water consumption is higher than **99.3 %** of parcels in this subdivisions.

Consumption history

Parcel consumption (kgal/mo)



Previous Page 1 / 3 Next | Download table

Download tabulated data as CSV

Year	Month	Potable kgal/mo/HH	Irrigation kgal/mo/HH	Reclaimed kgal/mo/HH	Total kgal/mo/HH
2016	1	3.2	0.0	6.5	9.7
2016	2	4.5	0.0	10.9	15.4
2016	3	4.1	0.0	9.3	13.4
2016	4	3.8	0.0	9.4	13.1
2016	5	4.3	0.0	11.5	15.8
2016	6	4.0	0.0	7.1	11.2
2016	7	4.2	0.0	11.7	15.9
2016	8	4.0	0.0	11.0	15.0
2016	9	3.9	0.0	10.7	14.5

H2OSAV - Toho Water Authority (2012 - 2016)

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2016

Area	Subdivisions	Parcels
1,148 sq. miles	1,054	75,367

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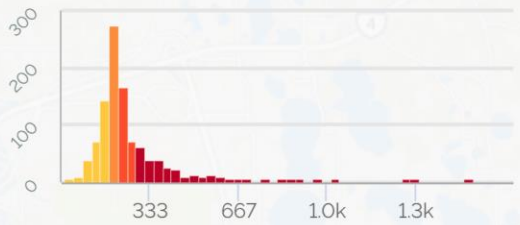
Avg. total usage

200

gal/day/HH

Potable Reclaimed Irrigation



Avg. usage

gal/day/HH

- Quartile 1 (0–166)
- Quartile 2 (166–197)
- Quartile 3 (198–272)
- Quartile 4 (272–1,518)

H2OSAV - Toho Water Authority (2012 - 2016)

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2016

Area	Subdivisions	Parcels
1,148 sq. miles	262	15,841

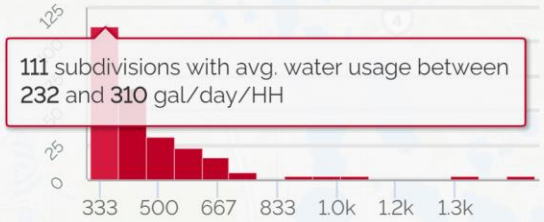
Potable meters	Reclaimed meters	Irrigation meters
15,841	9,310	4,957

Avg. total usage

370

gal/day/HH

Potable Reclaimed Irrigation



Avg. usage

gal/day/HH

- Quartile 1 (0–166)
- Quartile 2 (166–197)
- Quartile 3 (198–272)
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Show all

Kissimmee
Four Corners
Walt Disney World Resort
Davenport Swamp
Reedy Creek Swamp
Intercession City
Shingle Creek Regional Park
East Lake Tohopekaliga
Lake Tohopekaliga
Crosby Island Marsh
Moss Park
Lake Lizzie Conservation Area
Alligator Lake
Harmony
John H Bay
Big Bend Swamp
Davenport
Lake Marion Creek Wildlife Management Area
Lake Marion
Disney Wilderness Preserve
Cypress Lake
Kissimmee Chain of Lakes
Camp Lonesome Conservation Area
Triple N Ranch Wildlife Management Area
Whaley Conservation Easement
Lake Hatchineha
Hatchineha Ranch
Winter Haven
Dundee
Lake Alfred

Water Use in Single Family Detached Households with Dual Meters - Toho Water Authority

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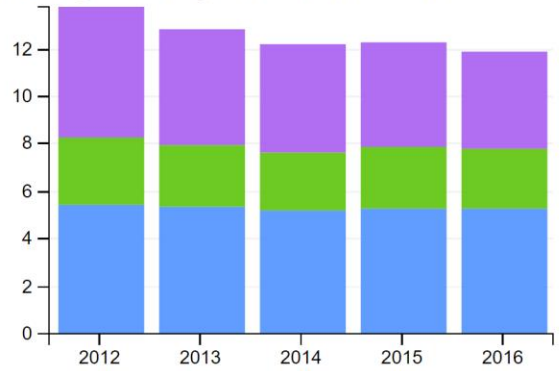
Irrigation: Select all ▼ **Households:** 9,484 **Average:** 12.6 (kgal/month) **Total:** 5,671,526 (kgal) Reset All CSV Export:

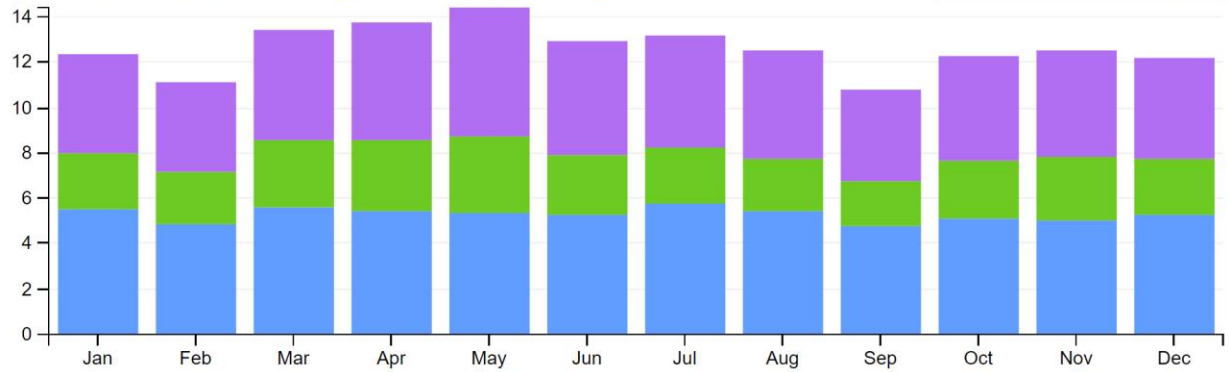
Average Use by Year (kgal/month)



By Month (kgal/month)

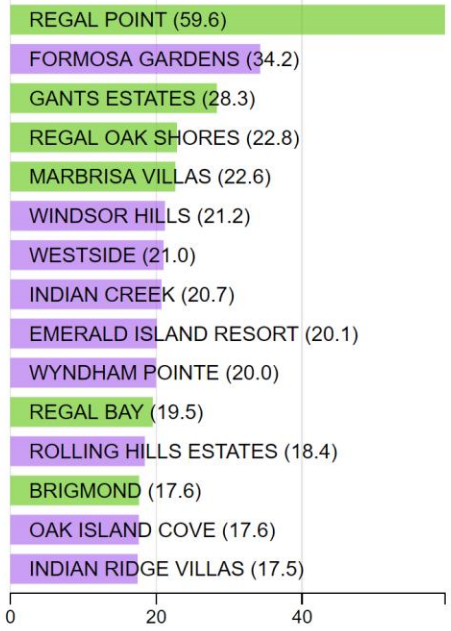
Indoor Irr_Pot Irr_Rec

Measure: Average (kgal/month) ▼



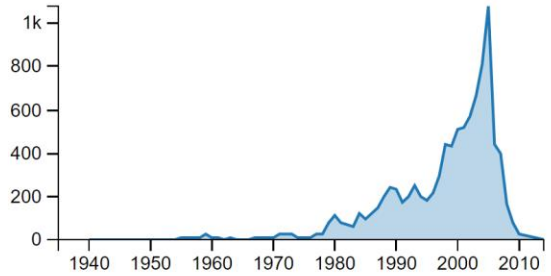
Top Neighborhood

search

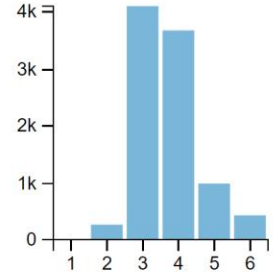


Frequency Distributions

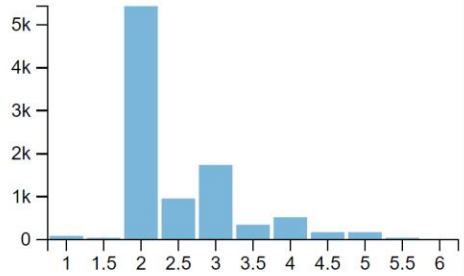
Year Built



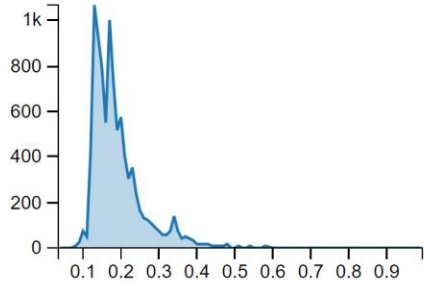
Bedrooms



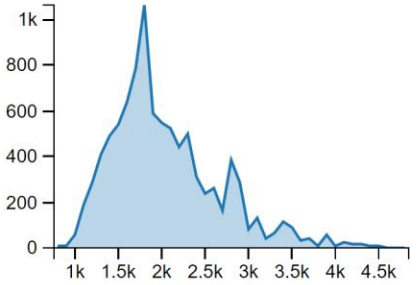
Baths



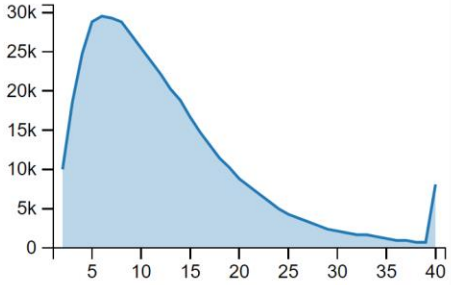
Total Acres



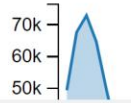
Finished Area



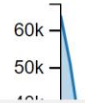
Total Usage



Indoor Usage



Irrigation Usage

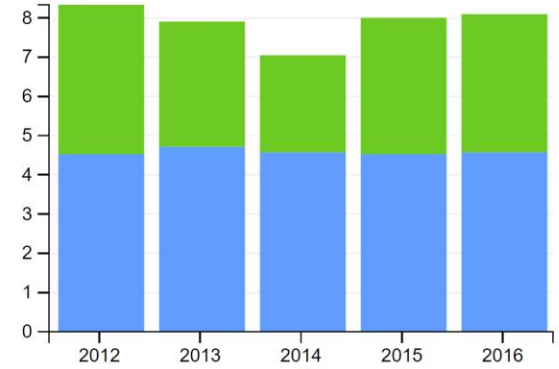


Water Use in Single Family Detached Households with Dual Meters - Toho Water Authority

UF UNIVERSITY of FLORIDA

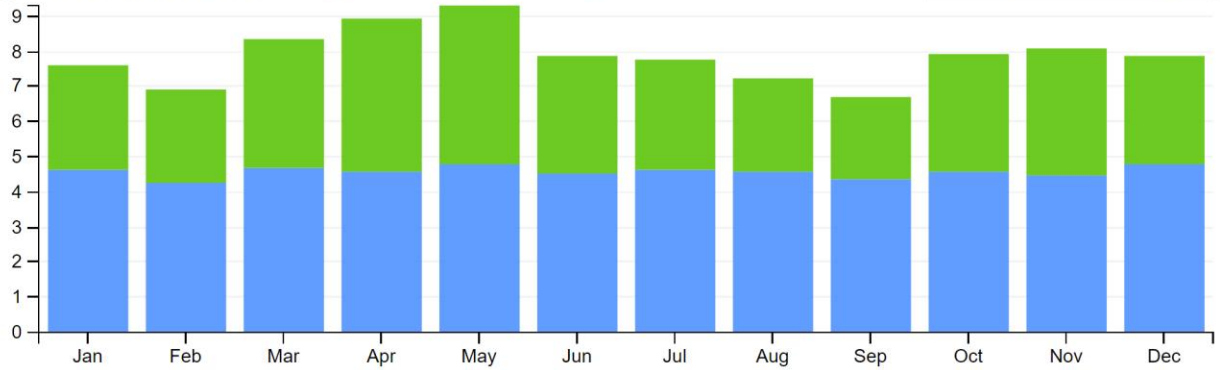
Irrigation: Select all ▼ **Households:** 241 **Average:** 7.9 (kgal/month) **Total:** 88,815 (kgal) Reset All CSV Export:

Average Use by Year (kgal/month)



By Month (kgal/month)

Indoor Irr_Pot Irr_Rec Measure: Average (kgal/month) ▼

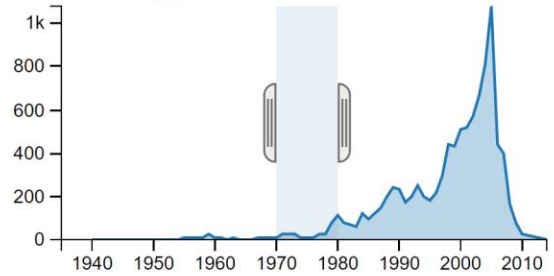


Top Neighborhood

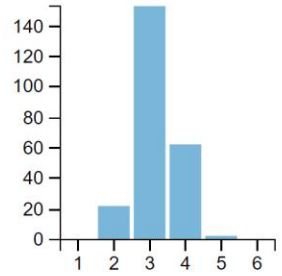
search

Frequency Distributions

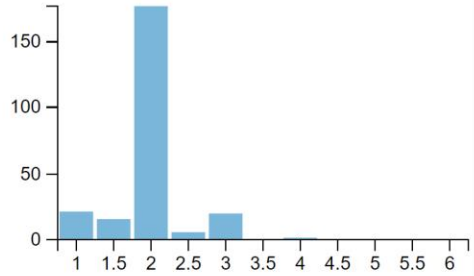
Year Built [X] | [1970 -> 1980]



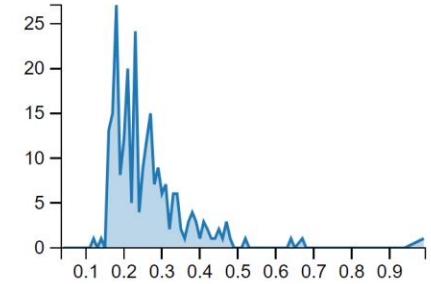
Bedrooms



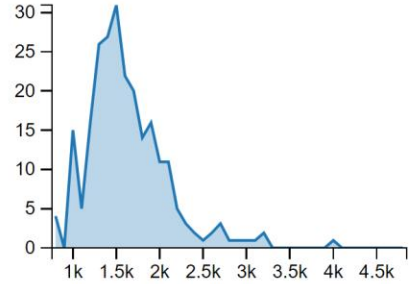
Baths



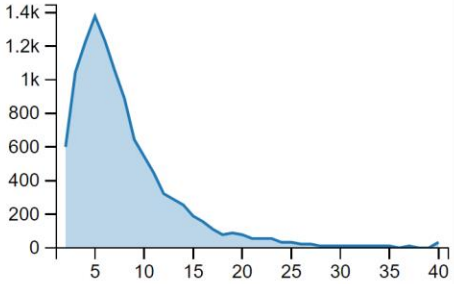
Total Acres



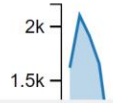
Finished Area



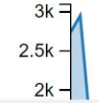
Total Usage



Indoor Usage



Irrigation Usage

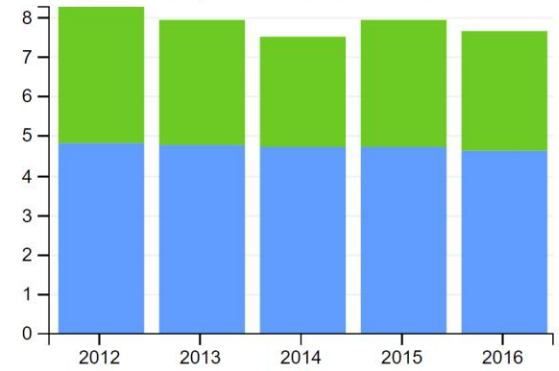


Water Use in Single Family Detached Households with Dual Meters - Toho Water Authority

UF UNIVERSITY of FLORIDA

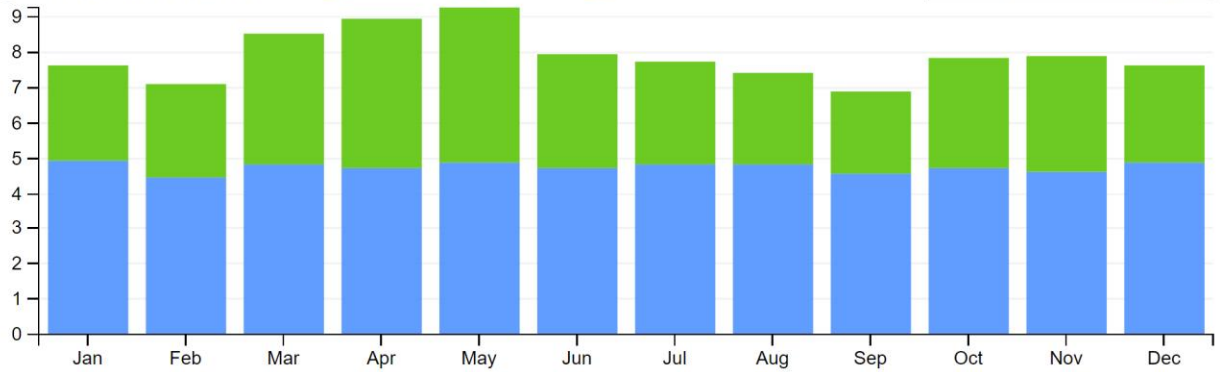
Irrigation: Select all ▼ **Households:** 1,245 **Average:** 7.9 (kgal/month) **Total:** 435,450 (kgal) Reset All CSV Export:

Average Use by Year (kgal/month)



By Month (kgal/month)

Indoor Irr_Pot Irr_Rec Measure: Average (kgal/month) ▼

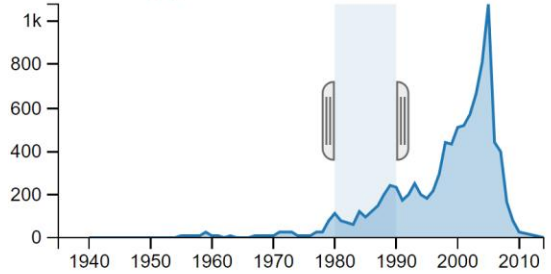


Top Neighborhood

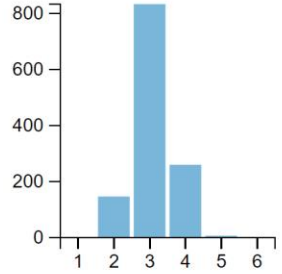
search

Frequency Distributions

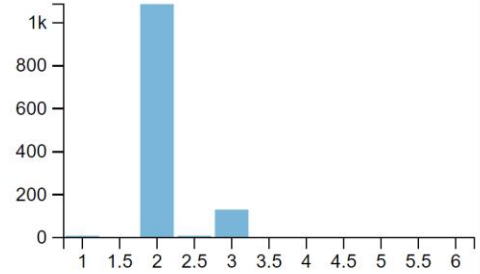
Year Built [X] | [1980 -> 1990]



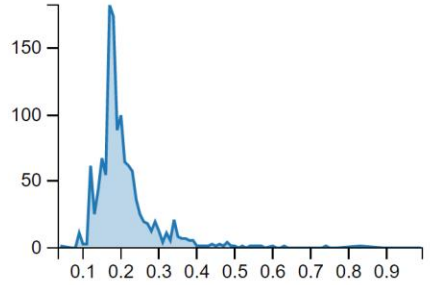
Bedrooms



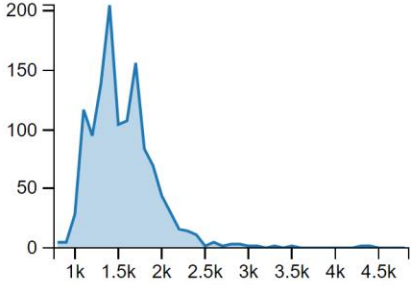
Baths



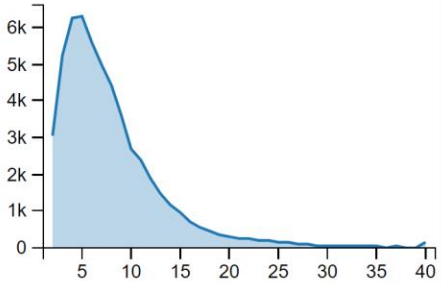
Total Acres



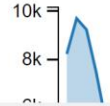
Finished Area



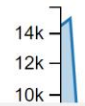
Total Usage



Indoor Usage



Irrigation Usage

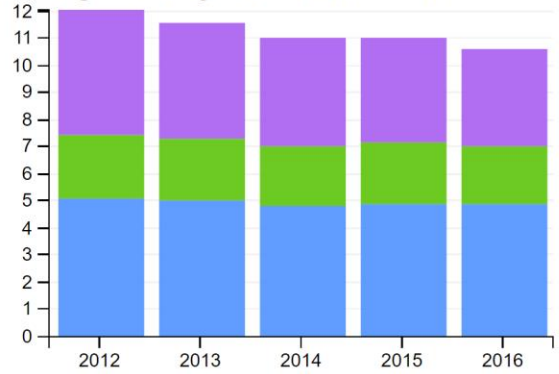


Water Use in Single Family Detached Households with Dual Meters - Toho Water Authority

UF UNIVERSITY of FLORIDA

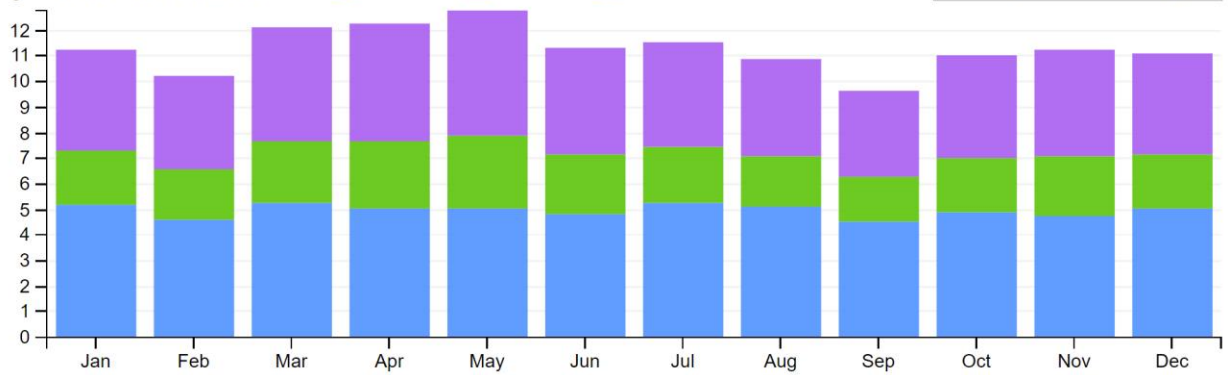
Irrigation: Select all ▼ **Households:** 2,615 **Average:** 11.3 (kgal/month) **Total:** 1,369,263 (kgal) Reset All CSV Export:

Average Use by Year (kgal/month)



By Month (kgal/month)

Indoor Irr_Pot Irr_Rec Measure: Average (kgal/month) ▼

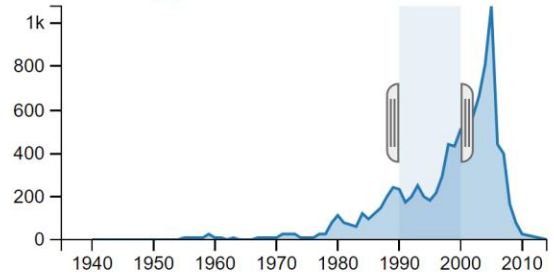


Top Neighborhood

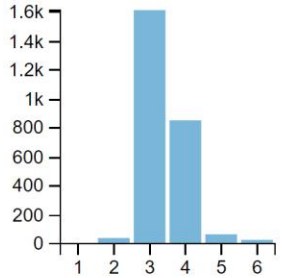
search

Frequency Distributions

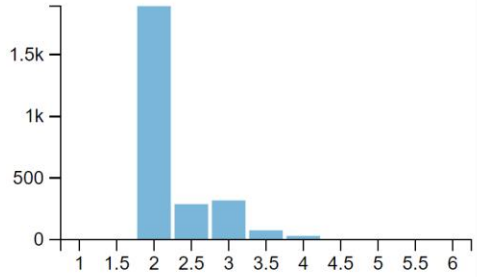
Year Built [X] | [1990 -> 2000]



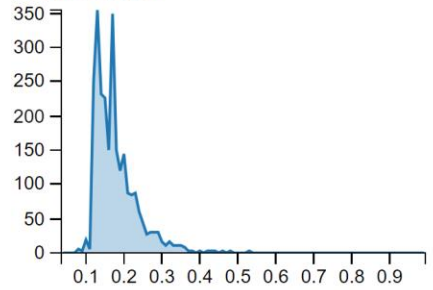
Bedrooms



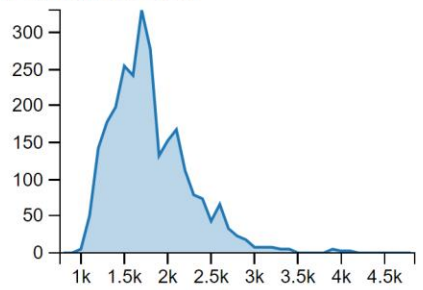
Baths



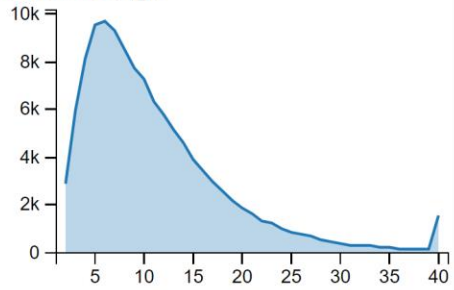
Total Acres



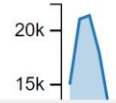
Finished Area



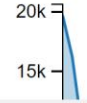
Total Usage



Indoor Usage



Irrigation Usage

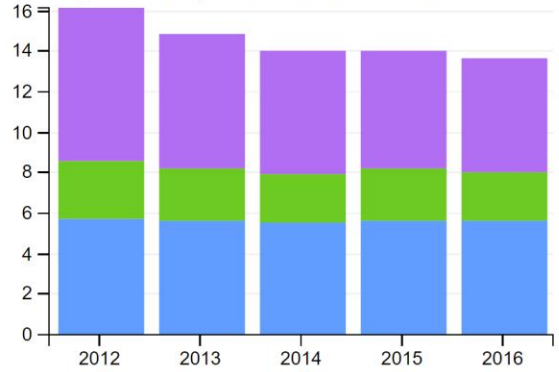


Water Use in Single Family Detached Households with Dual Meters - Toho Water Authority

UF UNIVERSITY of FLORIDA

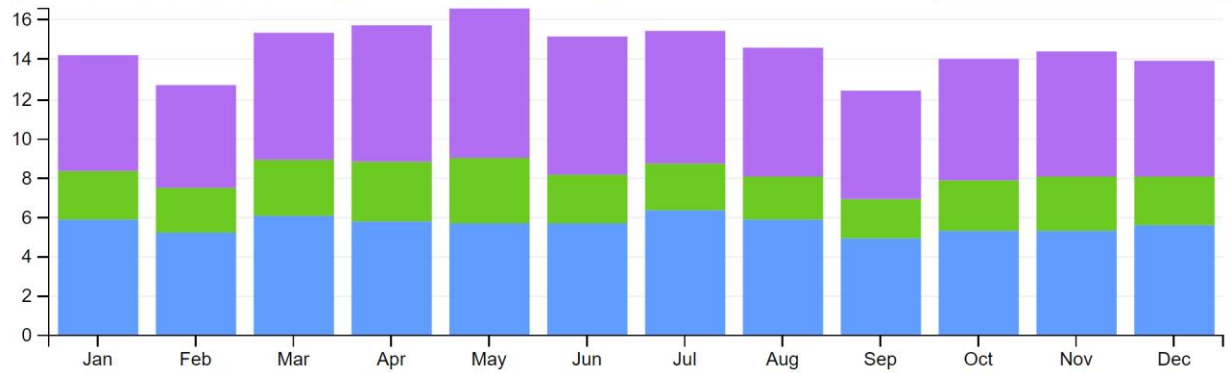
Irrigation: Select all ▼ **Households:** 5,225 **Average:** 14.6 (kgal/month) **Total:** 3,708,473 (kgal) Reset All CSV Export:

Average Use by Year (kgal/month)



By Month (kgal/month)

Indoor Irr_Pot Irr_Rec Measure: Average (kgal/month) ▼

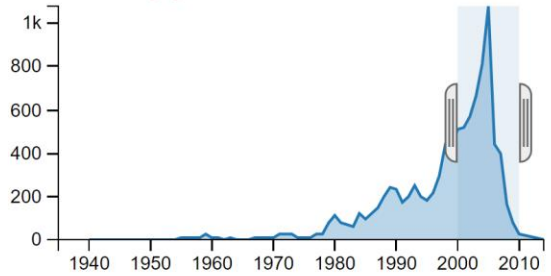


Top Neighborhood

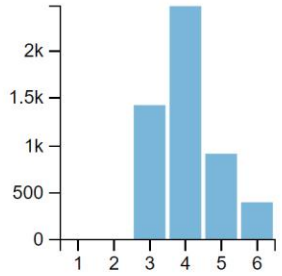
search

Frequency Distributions

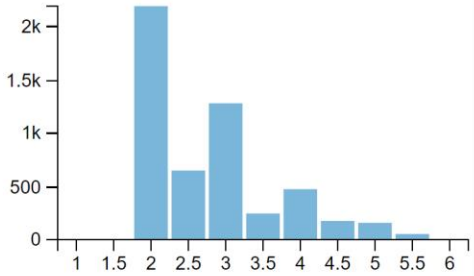
Year Built [X] | [2000 -> 2010]



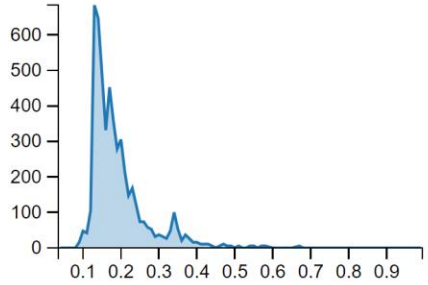
Bedrooms



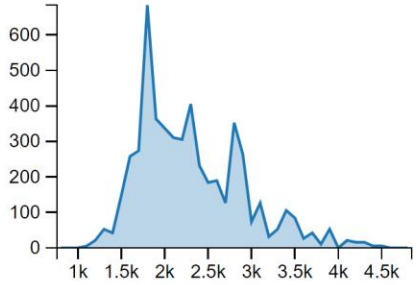
Baths



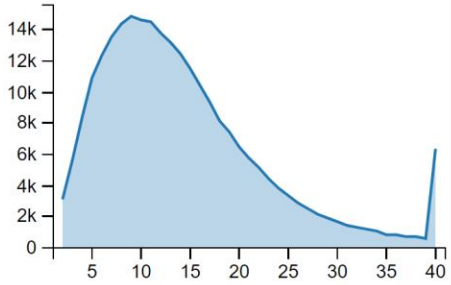
Total Acres



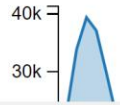
Finished Area



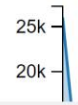
Total Usage



Indoor Usage



Irrigation Usage

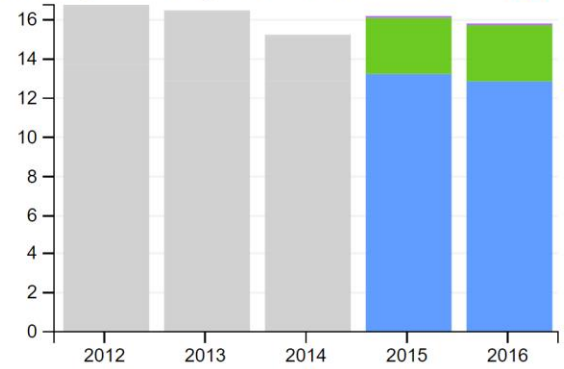


Water Use in Single Family Detached Households with Dual Meters - Toho Water Authority

UF UNIVERSITY of FLORIDA

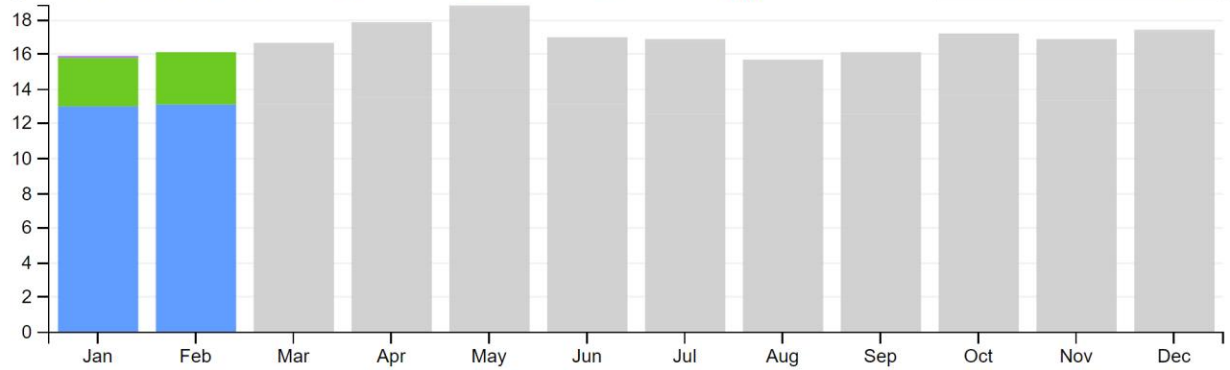
Irrigation: Select all ▼ **Households:** 181 **Average:** 16.0 (kgal/month) **Total:** 5,225 (kgal) Reset All CSV Export:

Average Use by Year (kgal/month) [X]



By Month (kgal/month)

Indoor Irr_Pot Irr_Rec [X] Measure: Average (kgal/month) ▼

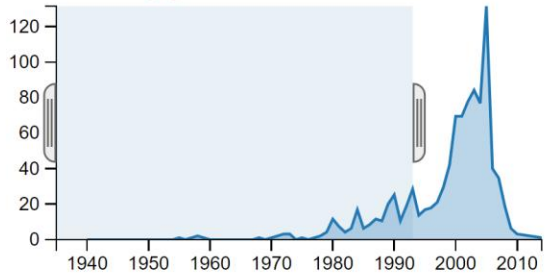


Top Neighborhood

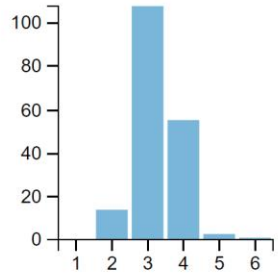
search

Frequency Distributions

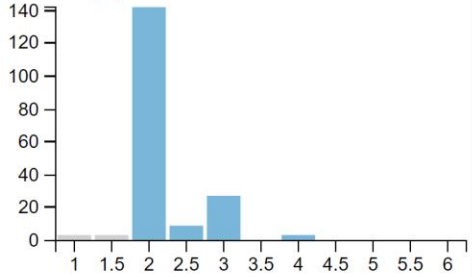
Year Built [X] | [1935 -> 1993]



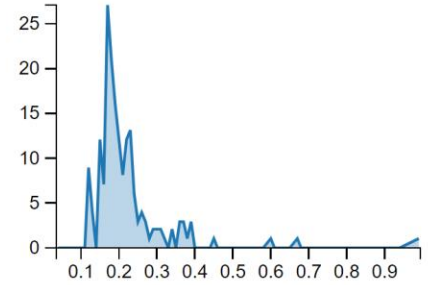
Bedrooms



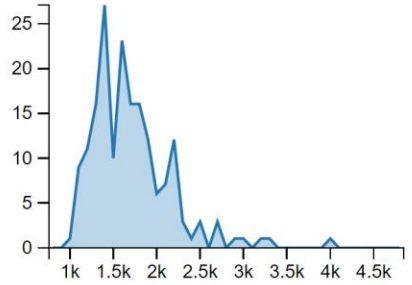
Baths [X]



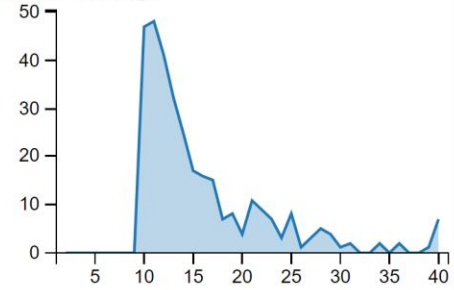
Total Acres



Finished Area

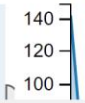


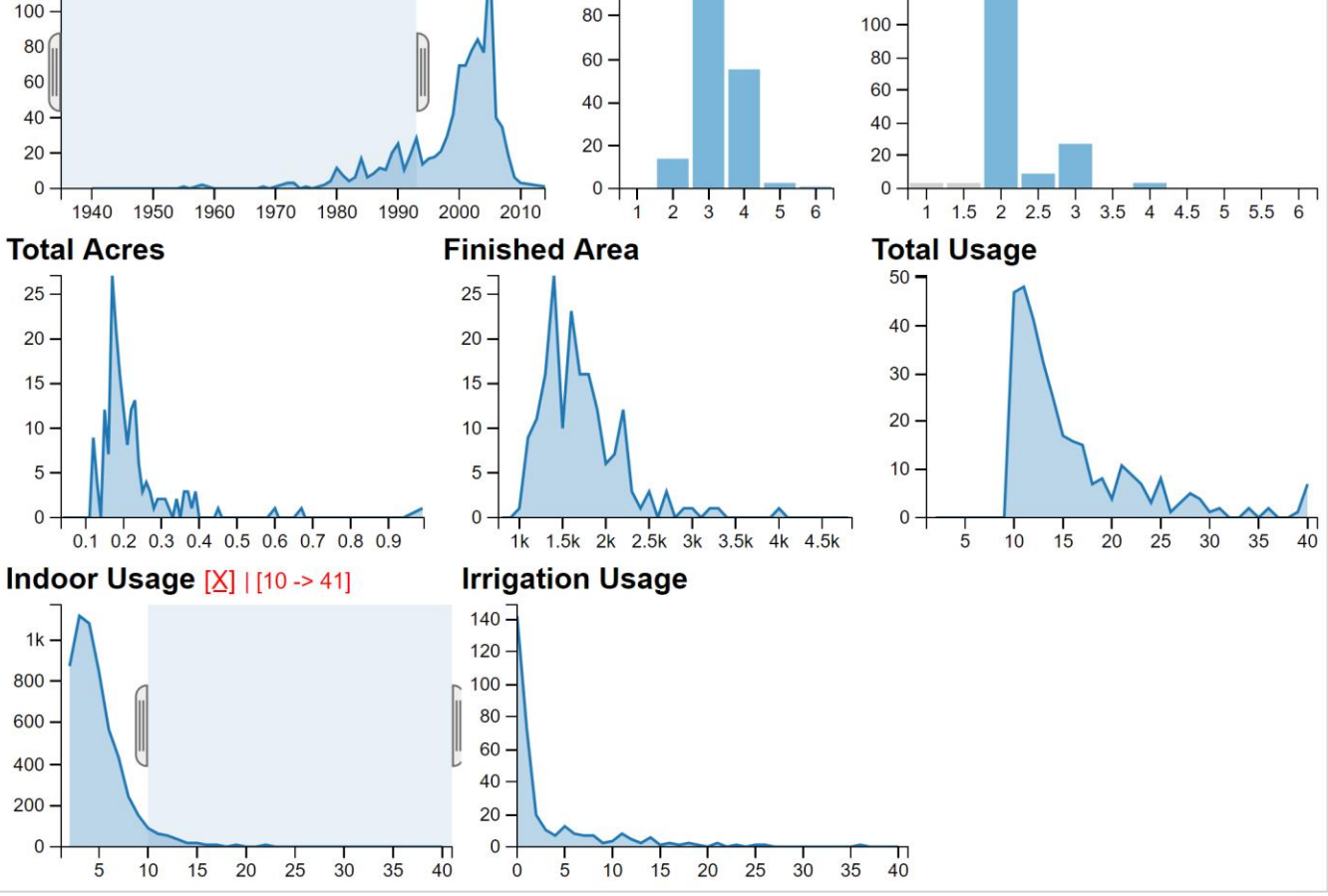
Total Usage



Indoor Usage [X] | [10 -> 41]

Irrigation Usage





[Record Detail](#) (200 max) [Click on column headings to sort/reverse-order]

326 selected out of 449,008 records | CSV Export:

PREM_ID	PARCELNO	NBHDNAME	yearbuilt	Acres	Area	BRs	Baths	HE	Pot/Rec	YEAR	MON	DAYS	INDOOR_H20	IRR_H20	REC_H20	TOT_H20
102880	032528348100010190	INDIAN WELLS	1985	0.186	1377	3	2	1	P	2015	2	28	9.68	7.88	0	17.56
105080	072530267600230030	BVL	1979	0.172	1390	4	2	1	P	2015	1	31	10.27	0	0	10.27
106410	072530267600220080	BVL	1979	0.203	1850	4	2	1	P	2015	1	31	9.92	0	0	9.92
109780	072530267700900290	BVL	1986	0.196	1730	4	2	1	P	2015	1	31	10.13	0.39	0	10.52
110680	072530267700960130	BVL	1980	0.193	1462	2	2	1	P	2015	1	31	14.67	0.39	0	15.06
110680	072530267700960130	BVL	1980	0.193	1462	2	2	1	P	2015	2	28	9.71	0	0	9.71
111350	072530268300010210	BVL	1981	0.179	1333	3	2	1	P	2015	2	28	16.51	14.4	0	30.91
111350	072530268300010210	BVL	1981	0.179	1333	3	2	1	P	2015	1	31	16.5	17.87	0	34.38
114240	072530268501260040	BVL	1982	0.175	1765	4	2	1	P	2015	1	31	9.73	0	0	9.73
115890	072530267700441070	BVL	1981	0.206	2669	5	4	1	P	2015	1	31	10.33	0	0	10.33
115890	072530267700441070	BVL	1981	0.206	2669	5	4	1	P	2015	2	28	9.71	0	0	9.71
115890	072530267700441070	BVL	1981	0.206	2669	5	4	1	P	2016	2	29	10.42	0	0	10.42
115890	072530267700441070	BVL	1981	0.206	2669	5	4	1	P	2016	1	31	12.82	0.31	0	13.13
116280	072530267701070160	BVL	1988	0.177	1410	4	2	1	P	2015	1	31	14.14	4.78	0	18.92

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