

Appendix A

BMP	A Estimated Number of Implementations in 2035 per 2015 RWSP	B Estimated Savings through 2035 per 2015 RWSP (mgd)	C Estimated Number of BMPs through 2015 per survey	D Estimated Future Annual Implementations per survey	E (B*1000000)/A Estimated Savings per Device per 2015 RWSP (gpd)	F Estimated Savings for 12 Respondents Program Inception through 2015 (gpd)	G Estimated Number of BMPs for 12 respondents 2010-2014	J Estimated Number of BMPs for 12 respondents 2015-2019	H Estimated Savings for 12 respondents 2010-2014 (5) (gpd)	I Estimated Savings for 12 respondents 2015-2019 (gpd)
CII Facility Water Use Assessment/Audit	169	0.10	1,375	78	591.7	813,609	10	15	5,917	8,876
High-Efficiency Showerhead Replacement	527,728	8.66	112,554	10,011	16.4	1,847,008	44,389	50055	728,422	821,401
High-Efficiency Toilet Replacement	373,215	7.45	5,152	1,435	20.0	102,843	3,867	7175	77,192	143,225
Low Flow Toilet (15)	0	0.00	10,401	295	20.0	207,621	5,158	1475	102,962	29,443
High-Efficiency Faucet Aerator Replacement	1,057,602	7.35	121,741	11,210	6.9	846,062	58,521	56050	406,702	389,530
High-Efficiency Pre-Rinse Spray Valve Replacement	307	0.20	1,287	0	651.5	838,436	113	0	73,616	-
High-Efficiency Urinal Replacement	3,808	0.30	2	1	78.8	158	2	5	158	394
Irrigation System Audits (13)	99,605	1.21	17,397	1,962	12.1	211,338	10,300	9810	125,124	119,172
Soil Moisture Sensors	28,617	1.51	100	0	52.8	5,277	100	0	5,277	-
Advanced ET Irrigation Controllers	2,845	0.26	294	30	91.4	26,868	237	150	21,659	13,708
Waterwise Florida Landscaping	3,956	0.87	62	34	219.9	13,635	42	170	9,237	37,386
Water Efficient Clothwashers (14)	None	Unknown	2,025		11	22,275	2,025	1121	22,275	12,331
Water Efficient Dishwashers	None	Unknown	108	20	0.8	86	108	100	86	80
Cisterns (4)	None	Unknown	2	0	Unknown	Unknown	1.0	0		
Rain Barrels (4)	None	Unknown	1,432	251	Unknown	Unknown	1,427	1255		
Rain Sensors (6)	None	Unknown	6,984	1,683	20	139,680	3,757	8415	75,140	168,300
Enforcement of Irrigation Restrictions (7)	None	Unknown	Many	Many	Unknown	Unknown	Unknown			
Inclining Block Rates (4) (8)	None	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown			
AWWA System Water Audits (4) (9)	None	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown			
Education Programs (4) (10)	None	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown			
Landscape Restrictions/Requirements (4) (11)	None	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown			
Range of Estimated Savings from BMPs										
Total with Other BMPs for 12 respondents (67% of PWS Demand)									1,653,767	1,743,846
Total for ALL CFWI PWS for these BMPs									2,468,309	2,602,756

Notes:

- (1) Estimated savings for quantifiable BMPs only. Does not include other water savings conservation initiatives currently being performed such as education, inclining block rates, behavioral programs, utility audits, utility leak detection, customer audits, etc. The savings for these programs have not been quantified and are not available from existing conservation tools.
- (2) Utility survey did not specifically request info from 2010 - 2015. The savings are from inception of a particular rebate or give away program for each utility. Some programs were started as early as 2004 while others were not started until 2015.
- (3) Projects requesting funding from the SJRWMD, SWFWMD and SFWMD for 2019 have not been included in the funding spreadsheet. The average annual savings from 2015 - 2018 of 578,472 gpd was used for 2019.
- (4) There is no current means of quantifying these BMPs.
- (5) Assumes a straight-line projection from program inception through 2015 for any programs starting prior to 2010. The annual number of implementations for 2010-2014 was then tallied by BMP by Utility. If the program started in 2015 or beyond, it was not counted for the 2010-2014 period.

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- (6) Rain Sensor savings estimate of 20 gal/day/device based on Citrus County data provided from Josh Madden, SWFWMD. Polk County and Lakeland survey data for rain sensors for 2015 - 2019 was removed since it is included in the funded programs. The savings estimate of 20 gpd is preliminary and should be evaluated in the future when additional data is available.
- (7) Sixteen of the utilities responding to the survey have some type of enforcement program (fines, turnoffs, education) for watering restrictions. Counts of violation notices were obtained from 8 utilities. 42,799 2010- 2014 and 47,703 2015-2019. The savings estimate of 33.2 gpd per violation is based on preliminary data from Toho Water Authority. Savings for 2018 and 2019 were estimated based on the average number of violation for the 2015 - 2017 timeframe.
- (8) 22 of the 28 utilities responding to the survey have inclining block rates.
- (9) 13 of the 28 utilities responding to the survey perform AWWA system water audits.
- (10) 28 of 28 utilities responding to the survey use one or more form of education for their customers.
- (11) 12 of the 28 utilities responding to the survey have landscape restrictions or requirements.
- (12) Per Deirdre Irwin, there were 711 FGBC certified homes from 2010 - 2014 and 1083 from 2015 - 2017 in Orange, Osceola, Polk, Seminole, and Southern Lake Counties in the CFWI. Indoor savings is estimated at 26 gallons per day per home. Assume 361 new FGBC homes for each year for 2018 and 2019.
- (13) Polk County and Lakeland future Irrigation Audit survey responses were deleted and the savings from the Polk County irrigation cost-share projects were added to line 68. Savings estimate of 12.1 gpd is thought to be low and should be re-examined in the future.
- (14) survey count for 2015 and 2016 is 1121. None expected beyond 2016.
- (15) For 2015 - 2019, 300 toilet rebates for Lakeland per survey were removed as they are covered under a District funding program.

Appendix B

Additional CFWI Estimated Savings	A Estimated Number of Implementations in 2035 per 2015 RWSP	B Estimated Savings through 2035 per 2015 RWSP (mgd)	C Estimated Number of BMPs for 12 respondents 2010-2014	D Estimated Number of BMPs for 12 respondents 2015-2019	E (B*1000000)/A Estimated Savings per Device per 2015 RWSP (gpd)	F Estimated Savings for 12 Respondents Program Inception through 2015 (gpd)	G Estimated Number of BMPs for 12 respondents 2010-2014	H Estimated Savings for 12 respondents 2010-2014 (5) (gpd)	I Estimated Savings for 12 respondents 2015-2019 (gpd)
Florida Water Star Rebates or Requirement(1)	None	Unknown	435	4756	128	99,840	435	55,680	608,768
Extension Agent/Florida Friendly Program (2)	None	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	77,808
FGBC Homes (3)	None	Unknown	711	1,805	26	Unknown	Unknown	18,167	46,930
Irrigation Restriction Enforcement	None	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	1,070,000	910,000
Total Additional CFWI Estimated Savings								1,143,847	1,643,506

Notes:

1 2010-2014 414 homes in Osceola County, 20 in Orange County, and 1 in Seminole County; 2015 - 345 homes; 2016 - 1411 homes; From 2017 - 2019 assume 1000 homes a year for 3000 more homes

2 Savings estimates are 5.2 Mgal/yr for Orange, 1.4 Mgal for Polk, and 0.5 Mgal for Seminole for 2016. (0.02 mgd in 2016); From 2017 to 2019 assumes the same rate of implementation per year or an additional 0.06 mgd savings.

3 the 1,805 homes for 2015-2019 was calculated by adding the 1,083 from 2015-2017 and an estimated 722 homes for 2018-2019. Indoor savings is estimated at 26 gallons per day per home. Assumes 361 new FGBC homes for each year for 2018 and 2019.

Appendix C

District	Fiscal Year	County	Entity Alias	Project Type	Project Title	Water Savings (GPD)	Number of Implementations	Actual Project Cost/ Est. Project Cost	Actual Funding/ Approved Funding
SFWMD	2011	Orange	Orange County Utilities	Indoor plumbing	Commercial Showerhead Retrofit	158,493	16,443	\$48,011	\$23,822
SFWMD	2012	Osceola	St. Cloud	Indoor plumbing	Toilet Rebate Program	6,247	217	\$33,640	\$14,500
SFWMD	2013	Osceola	Toho Water Authority	Indoor plumbing	Toilet Rebate Program	10,603	320	\$40,000	\$20,000
SFWMD	2013	Osceola	St. Cloud	Indoor plumbing	Toilet Rebate Program	3,123	114	\$18,451	\$9,000
SFWMD	2014	Osceola	Toho Water Authority	Indoor plumbing	Toilet Rebate Program 2013-2014	6,849	207	\$30,015	\$15,000
SFWMD	2015	Osceola	St. Cloud	Indoor plumbing	Toilet Rebate Program	6,301	224	\$33,016	\$16,500
SFWMD	2015	Osceola	Toho Water Authority	Indoor plumbing	Toilet Rebate Program 2013-2014	3,425	207	\$30,015	\$15,000
SFWMD	2017-2018	Osceola	Toho Water Authority	ALFDs	Automatic Line Flushing Devices ⁴	0	0	\$200,000	\$76,500
SFWMD	2017-2018	Osceola	St. Cloud	Indoor plumbing	Toilet Rebate Program	9,370	300	\$47,000	\$23,500
SFWMD	2017-2018	Orange	Orange County Utilities	AMA software	Water Conservation Software Technology Project for Southwest Orange County	286,655	0	\$169,981	\$50,990
SFWMD	2017-2018	Polk	Polk County BOCC	AMA software	Water Conservation Software Technology for Oak Hills water use area	14,247	0	\$205,920	\$60,000
SWFWMD	2010	Polk	Lakeland	Indoor plumbing	Toilet Rebate Program	23,638	753	\$143,702	\$70,098
SWFWMD	2010	Polk	Winter Haven	Irrigation	Smart Irrigation Controller Pilot Project	21,483	12	\$7,900	\$3,950
SWFWMD	2011	Polk	Frostproof	Indoor plumbing	Toilet Rebate Program	540	20	\$1,954	\$977
SWFWMD	2011	Polk	Lake Alfred	Indoor plumbing	Toilet Rebate Program/DIY	7,805	557	\$16,200	\$8,100
SWFWMD	2012	Polk	Polk County Utilities	Irrigation	Landscape and Irrigation Evaluation Program - Phase 1	29,167	211	\$41,378	\$20,689
SWFWMD	2015	Polk	Polk County Utilities	Irrigation	Landscape and Irrigation Evaluation Program - Phase 2	19,198	88	\$18,420	\$8,922
SWFWMD	2016	Polk	Polk County Utilities	Irrigation	Landscape and irrigation evaluation Program	36,863	167	\$36,370	\$18,185
SWFWMD	2016	Polk	Polk County Utilities	AMA software	Customer Portal Pilot Project	90,000	5,000	\$20,000	\$10,000
SWFWMD	2017	Polk	Polk County Utilities	Irrigation	Landscape and Irrigation Evaluation program	42,000	300	\$82,800	\$41,400
SWFWMD	2017	Polk	PRWC	Indoor plumbing	Indoor retrofit	87,370	3,135	\$242,550	\$121,275
SWFWMD	2017	Polk	PRWC	Irrigation	Outdoor BMPs	52,300	872	\$332,150	\$166,075
SWFWMD	2017	Polk	PRWC	FL waterstar rebates	Florida water star rebates	66,165	500	\$700,000	\$350,000
SWFWMD	2018	Polk	Polk County Utilities	Irrigation	Landscape and irrigation evaluation Program	42,000	300	\$85,000	\$42,500
SWFWMD	2019	Polk	PRWC	Indoor plumbing	Indoor Water Conservation Incentives	92,000	3,520	\$156,000	\$78,000
SWFWMD	2019	Polk	PRWC	Irrigation	Outdoor Water Conservation BMPs	113,000	907	\$192,500	\$96,250
SWFWMD	2019	Polk	PRWC	Other	Water Demand Management Plan	0	0	\$340,000	\$170,000
SWFWMD	2019	Polk	Winter Haven	AMA software	Consumption and Conservation Programs Data Management Software	16,000	19,000	\$120,000	\$60,000
SWFWMD	2019	Polk	Lake Hamilton	Line Looping	Distribution System Looping	19,554	0	\$521,000	\$124,610
SJRWMD	2012	Orange	City of Ocoee	AMI	Strategic Water Conservation	8,493	390	\$132,367	\$66,184
SJRWMD	2012	Orange	City of Apopka	Irrigation	Rebate to 100 customers to install ET controllers	3,562	100	\$35,000	\$17,500
SJRWMD	2012	Orange	City of Apopka	Outreach	Landscape implementation Ordinance Implementation			\$64,000	\$32,000
SJRWMD	2012	Orange	Orange County	Irrigation	Smart controller study			\$230,000	\$100,000
SJRWMD	2012	Orange	City of Apopka	AMI	AMI implementation Program			\$79,450	\$39,725
SJRWMD	2012	Lake	City of Groveland	Outreach	Irrigation Rule enforcement			\$98,460	\$48,230
SJRWMD	2014	Orange	Orange County Utilities	Irrigation	Nozzle replacement	65,753	143	\$94,350	\$31,135
SJRWMD	2015	Seminole	City of Sanford	AMR	Installation of meters and software			\$490,000	\$245,000
SJRWMD	2015	Seminole	Seminole County	Indoor plumbing	Indoor Plumbing Rebate Program	11,507	939	\$93,004	\$46,502
SJRWMD	2016	Orange	City of Apopka	Irrigation	ET controllers, nozzles landscapes			\$140,176	\$70,088
SJRWMD	2016	Orange	City of Ocoee	AMI	AMI Meter Upgrade		500	\$111,470	\$55,735
SJRWMD	2016	Orange	Orange County Utilities	Indoor plumbing	Toilet retrofit	4,658	200	\$20,000	\$10,000
SJRWMD	2016	Orange	Orange County Utilities	Indoor and outdoor	Waterwise Neighbor Program	16,712	100	\$21,830	\$10,915
SJRWMD	2016	Orange	Orange County Utilities	Irrigation	Rainsensor Replacement Project	97,890	1,100	\$98	\$49,150

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SJRWMD	2016	Orange	Orange County Utilities	software AMA	Water\$mart Customers Conserve	143,328	30,000	\$224,668	\$112,334
SJRWMD	2017	Orange	City of Apopka	Irrigation	Nozzle replacement	121,918	200	\$140,000	\$70,000
SJRWMD	2017	Orange	City of Ocoee	AMI	AMI Meter Upgrade	105,000	9,000	\$2,230,565	\$1,115,283
SJRWMD	2017	Orange	Orange County Utilities	Indoor and outdoor	Waterwise Neighbor Retrofit	27,123	300	\$74,808	\$37,404
SJRWMD	2017	Orange	Orange County Utilities	Indoor and outdoor	Waterwise Neighbor NEW	82,740	500	\$271,963	\$135,981
SJRWMD	2018	Orange	Winter Garden	AMI	AMI software	41,000	1,187	\$400,000	\$200,000
SJRWMD	2018	Orange	Orange County Utilities	Indoor and outdoor	Waterwise Neighbor Phase 2	50,000	300	\$169,160	\$84,849
SJRWMD	2018	Brevard	Cocoa Beach	Indoor plumbing	Toilet Rebate	1,014	50	\$2,500	\$1,250
SJRWMD	2018	Orange	Orange County Utilities	Indoor and outdoor	Waterwise Retrofit	30,000	300	\$99,878	\$49,939
SJRWMD	2018	Orange	Orlando Utilities Commission	Irrigation	Irrigation audit and retrofit	60,000	400	\$519,053	\$208,140
SJRWMD	2019	Orange	Orange County Utilities	Indoor and outdoor	Waterwise Neighbor Program New and Old	106,800	13,000	\$30,707	\$150,353
SFWMD Total						505,313	18,032	\$856,049	\$324,812
SWFWMD Total						759,083	34,785	\$3,057,924	\$1,391,031
SJRWMD Total						977,498	58,659	\$5,773,507	\$2,987,697
All Districts Total						2,241,894	111,476	\$9,687,480	\$4,703,540

Appendix D

District	WUP	Site	Year	Project Description	OSS Meeting 10/13/17	Status	savings gpm	savings in gallons per day
SWFWMD	11400	New wales	2012	install mechanical seal and dole valves in 3rd train rock trasfer pumps	C	complete	65	93,600
SWFWMD	11400	New wales	2012	Dole valves on gyp pumps	C	complete	25	36,000
SWFWMD	11400	New wales	2012	replace pump seals barrier tanks on 7 pumps	C	complete	20	28,800
SWFWMD	11400	New wales	2012	install mechanical sel and dole valves in the rod mill slurry pumps	C	complete	100	144,000
SWFWMD	11400	New wales	2013	eliminate /decrease water drained during slow rolling at rock slurry pumps and filter feed pumps	C	complete	30	43,200
SWFWMD	11400	New wales	2012	AFI system - replace water cooled air compressors with air cooled	C	complete	40	57,600
SWFWMD	11400	New wales	2012	Gran system- reclaim NH3 vaporizer condensate to the scrubber to diplace freshwater make-up	C	complete	15	21,600
SWFWMD	11400	New wales	2012	Gran system - Reclaim TGS blowdown to displace fresh water used to keep gran duct clean	C	complete	10	14,400
SWFWMD	11400	New wales	2012	Gran system - slurry pump barrier tank	C	complete	5	7,200
SWFWMD	11400	Bartow	2013	RO system effluent to sulfuic acid plant boiler feed water makeup	C	complete	250	360,000
SWFWMD	10770	Juice Bowl	2014	3 water main repairs within plant 100,000 gpd estimate. Cooling tower repair 33,333 gpd, repair of other equipment 8,333 gpd.		complete		141,666
SWFWMD	10347	Caribbean Distillers	2014	in 2013 upgrade cooling tower COC chemicals 15,000 gpd		complete		15,000
SWFWMD	11400	Bartow	2017	Install piping system off of the existing RO water supply to #4 Demin to supply 5/6 Demin Unit. Off-sets well water usage to portable RO trailer. Existing excess RO water sent out of the facility as dilution water prior to NPDES outfall. Install tank to collect RO water for 5/6 Demin.	C	Proposed	351	505,769
SWFWMD	11400	Bartow	2017	Implement a Cooling Tower to recycle seal water back to the vacuum pumps (assuming 40-50% FW Saving)	C	Proposed	240	345,825
SWFWMD	11400	New Wales	2016	Reduce the usage of fresh water sprays on the mills	C	Proposed	75	108,070
SWFWMD	11400	New Wales	2016	Collect scrub water in AFI and use in Dry Products as make up to scrubbers	C	Proposed	55	79,252
SWFWMD	11400	New Wales	2017	Return Vacuum Pump water to the 123 Cooling Tower	C	Proposed	20	28,819
SWFWMD	438	Fort Meade Chem	2020	nearly all GW is used for dilution of surface water discharge for compliance with NPDES permit. Use is in 5mgd range, and is projected to come down to 4MGD in 2020 and 3mgd in 2022. reduction will be achived by reduction in rain catchment area and potentially an increase in water levels in perimeter drain.		Proposed		1,000,000
SWFWMD	10347	Caribbean Distillers	future	Replace pump paking material with thermostatically controlled Mechanical seals, also have a solenoid valve that will automatically turn off the seal water when pumpis not running		proposed		10,000