Polk County Comprehensive Water Supply Plan

7/14/2009

Short List			Source/Calculations	Potential Quantity	Capital Cost	Unit Costs	Yield (MGD) 30%		Permitablility 25%		Additional Benefit 10%		Cost Index ($) 25%		Implementation Time 10%		Total Score
Rank	Code	Description		MGD	($mil)	($/Kgal)	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade		
1	G-01	**Land Use Transitions (*Well Name / Municipality proposed to supply*)**- This project category consists of identifying and planning for the transitioning of existing Agricultural, Mining, or ICI wells; which have been decommissioned or will be decommissioned due to cessation in use from the current water supply use. Land use transition projects will consist of converting a portion of existing agricultural, institutional, or industrial supply quantities over to public supply if mitigation is needed due to predicted adverse impacts from considering additional traditional groundwater withdrawal quantities. Land use transitions will include analysis of the SWFWMD DWRM II modeling program. The project includes a Southeast Polk County wellfield as well as the Mulberry development of cooperative water production facilities through land use transitions.	**PCCWSP** Costs based on 10 miles of piping, drillingw ells, ground water pumping system, conventional groundwater treatment, and transfer pumping system. Unit costs include both capital and O&M costs.	30.00	$73.3	$0.47	10.0	**300**	7	**175**	8	**80**	9	**230**	10	**100**	885
2	C	**Conservation**- The concept of this category would be to implement conservation programs to supplement water supply for Polk County and municipalities by reducing the demands. This overall project consists of each municipality implementing one or more of a series of selected Conservation programs which will reduce the overall demand on the potable water system. Individual projects will address reducing either or both indoor and outdoor water usage, as well as address conservation efforts for industrial and commercial users for each individual municipality.	**PCCWSP** Costs and quantities based on sum of individual conservation projects.	10.00	$30.0	$0.82	4.0	**120**	8	**200**	5	**50**	9	**216**	5	**50**	636
3	G-07	**SE Polk County Well field** - This project would consist of drilling several Lower/Upper Floridan wells in the SE area of Polk County. This concept would consist of withdrawing groundwater from the LFA/UFA and treating the raw water to meet primary and secondary treatment standards for distribution as a potable source to meet regional demands in the SE area of Polk County.	**PCCWSP** Cost analysis includes 25 miles of transmission piping and membrane treatment. Unit costs include both capital and O&M costs.	15.00	$90.4	$1.52	6.0	**180**	5	**125**	5	**50**	7	**187**	4	**40**	582
4	R-25	**Lakeland/PCU-TECO Hwy 60 Industrial Reuse** - This is a joint project to supplement the TECO energy facility with an additional 7.6 MGD of reclaimed water for expansion of the power facility. The project will include Polk County, Lakeland, and TECO. In return, Lakeland will increase their current water use permit quantity, extend their permit to 20 years, and offset per capita demands. Future expansion of the project could include transfer of water supply to Cargill/Mosaic.	**Boyle Engineering** Conceptual Design Report: Lakeland & Polk County Reuse Initiative	6.0	$40.0	$1.52	2.4	**72**	9	**225**	2	**20**	7	**187**	7	**70**	574
5	G-24	**Lakeland: C.W.. Combee W.T.P.. Ground Water Blending** - This project would consist of blending Lower and Upper Floridan well water. This concept would consist of drilling a new LFA well for new water supply. The new LFA raw water supply in concept would be blended either with the existing UFA raw water supply or blended with the existing finished water from the WTPs. Water quality and quantity will be evaluated to keep any additional treatment at a minimum at any facility.	**PCCWSP** Cost analysis includes drilling a lower Floridan well(s). Capital Costs only include the initial planning, permitting and design fees, as well as the infrastructure construction costs, including land costs, legal fees and contingencies. Unit costs include both capital and annual O&M costs.	1.20	$4.30	$0.67	0.5	**14**	8	**200**	3	**30**	9	**222**	9	**90**	556
6	G-05	**NE Polk County Lower Floridan Aquifer** - This concept would consist of withdrawing groundwater from the LFA and treating the raw water to meet primary and secondary treatment standards for distribution as a potable source to meet regional demands in the NE area of Polk County.	**PCCWSP** Cost analysis includes membrane treatment. Unit costs include capital and O&M costs.	4.00	$28.4	$1.76	1.6	**48**	7	**175**	7	**70**	7	**177**	8	**80**	550

Code refers to C-Conservation, R-Reclaimed, S-Surface Water,
O-Other Alternative Supply, G-Ground Water
Highlighted Projects = Categories

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7	G-25	**Lakeland: T.B.Williams W.T.P.. Ground Water Blending** - This project would consist of blending Lower and Upper Floridan well water. This concept would consist of drilling a new LFA well for new water supply. The new LFA raw water supply in concept would be blended either with the existing UFA raw water supply or blended with the existing finished water from the WTPs. Water quality and quantity will be evaluated to keep any additional treatment at a minimum at any facility.	**PCCWSP** Cost analysis includes drilling a lower Floridan well(s). Capital Costs only include the initial planning, permitting and design fees, as well as the infrastructure construction costs, including land costs, legal fees and contingencies. Unit costs includes	3.03	$6.90	$0.42	1.2	**36**	7	**175**	1	**10**	9	**233**	9	**90**	544
8	G-33	**Winter Haven Water Department: Fairfax W.T.P. Ground Water Blending** - This project would consist of blending Lower and Upper Floridan well water. This concept would consist of drilling a new LFA well for new water supply. The new LFA raw water supply in concept would be blended either with the existing UFA raw water supply or blended with the existing finished water from the WTPs. Water quality and quantity will be evaluated to keep any additional treatment at a minimum at any facility.	**PCSWSP** Cost analysis includes drilling a lower Floridan well(s). Capital Costs only include the initial planning, permitting and design fees, as well as the infrastructure construction costs, including land costs, legal fees and contingencies. Unit costs include both capital and annual O&M costs.	0.74	$2.51	$0.64	0.3	**9**	6	**150**	7	**70**	9	**223**	9	**90**	542
9	S-15	**Peace River/ Land Use Transition**- This project would consist of the construction of a surface water treatment facility and associated reservoir through the development of a regional partnership to supply Polk County and its municipalities with surface water from the Peace River. Combined flows from Peace River at Ft. Meade and Bowlegs Creek conclude there is approximately 5.14 mgd of additional flow, with a minimum reservoir size of 22,000 acre-ft and a minimum diversion capacity of 90 mgd. Combined with the Southern Land Use Transition wells land use transitions this could potentially provide a substantial amount of water for the Polk County region. The Southern Land Use Transition are estimated to supply an additional 6 mgd of ground water.	**PCCWSP** Costs based on 20 miles of piping from South of Ft. Meade to Bartow, transfer pumping, combined surface and ground water treatment, and storage. Unit costs are capital and O&M costs.	11.1	$222.4	$4.42	4.4	**133**	8	**210**	9	**90**	3	**66**	4	**40**	539
10	G-12	**Bartow: 7 MGD W.T.P.. #10 Ground Water Blending** - This project would consist of blending Lower and Upper Floridan well water. This concept would consist of drilling a new LFA well for new water supply. The new LFA raw water supply in concept would be blended either with the existing UFA raw water supply or blended with the existing finished water from the WTPs. Water quality and quantity will be evaluated to keep any additional treatment at a minimum at any facility.	**PCCWSP** Cost analysis includes drilling a lower Floridan well(s). Capital Costs only include the initial planning, permitting and design fees, as well as the infrastructure construction costs, including land costs, legal fees and contingencies. Unit costs include both capital and annual O&M costs.	0.63	$2.10	$0.65	0.3	**8**	7	**175**	4	**40**	9	**223**	9	**90**	535
11	G-10	**Auburndale: Atlantic W.T.P. Ground Water Blending**- This project would consist of blending Lower and Upper Floridan well water. This concept would consist of drilling a new LFA well for new water supply. The new LFA raw water supply in concept would be blended either with the existing UFA raw water supply or blended with the existing finished water from the WTPs. Water quality and quantity will be evaluated to keep any additional treatment at a minimum at any facility.	**PCCWSP** Cost analysis includes drilling a lower Floridan well(s). Capital Costs only include the initial planning, permitting and design fees, as well as the infrastructure construction costs, including land costs, legal fees and contingencies. Unit costs include both capital and annual O&M costs.	0.62	$2.10	$0.66	0.2	**7**	7	**175**	4	**40**	9	**223**	9	**90**	535

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12	O-02	**Joint Toho/STOPR Project :** This project would consist of purchasing bulk water supply from Tohopekaliga Water Authority (TWA). In concept this project would include partnering with Tohopekaliga Water Authority in the development of either a regional surface water and ground water supply facility from both the Kissimmee River and Cypress Lakes wellfield. Partnering with Tohopekaliga Water Authority could reduce costs on a regional project. Quantity determined through Tohopekaliga Water Authority evaluations.	**PCCWSP** Cost based on initial information provided by Polk County Utilities and Tohopekaliga Water Authority.	5.00	$60.0	$2.20	2.0	**60**	7	**175**	9	**93**	6	**158**	4	**40**	526
13	R-43	**Winter Haven Reuse Option #3 - Calpine Energy -** Winter Haven plans to design and construct of 42,240 linear feet of 8-10" transmission main and pumping station from Winter Haven Plant #3 to connect to Calpine Power Plant. Flow of 1.5mgd / offset of 1.5mgd.	**The City of Winter Haven** Costs are based on The City of Winter Haven's 10-year Water Supply Plan	1.5	$4.50	$0.72	0.6	**18**	9	**225**	2	**20**	9	**220**	4	**40**	523
14	R-05	**Public Access Reuse -** The concept of this category would be to serve the public with reclaimed water to offset irrigation demands.	**PCCWSP** Costs include basic additional treatment to wastewater facility and piping to residential area. Unit costs include both capital and O&M costs.	15	$369.7	$4.4	6.0	**180**	8	**200**	2	**20**	3	**69**	4	**40**	509
15	O-01	**Tampa Bay Water Supply -** This project would consist of purchasing bulk water supply from Tampa Bay Water. In concept this project would include partnering with Tampa Bay Water in the development of either a 25 MGD Desal II facility or development of a second Alafia River reservoir to increase water supply from the Alafia River. Partnering with Tampa Bay Water could reduce costs on a regional project. Quantity determined through Tampa Bay Water's Alafia River evaluations.	**PCCWSP** Cost analysis based on 35 miles of piping from Lakeland to Tampa Bay Water Alafia Reservoir location, estimated assisted cost by Polk County for construction of facilities, surface water pumping, conventional surface water treatment, and transfer pumping.	10	$293.1	$6.49	4.0	**120**	9	**225**	10	**100**	0	**0**	3	**30**	475

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