

**SEMINOLE COUNTY GOVERNMENT
AGENDA MEMORANDUM**

SUBJECT: City of Orlando Iron Bridge Water Reclamation Facility Rehabilitation

DEPARTMENT: Environmental Services **DIVISION:** Business Office

AUTHORIZED BY: *RB* *RA* **CONTACT:** Bob Adolphe **EXT.** 2012
Robert G. Adolphe, P.E., Director

Agenda Date <u>09/28/04</u> Regular <input type="checkbox"/> Consent <input type="checkbox"/> Work Session <input type="checkbox"/> Briefing X Public Hearing – 1:30 <input type="checkbox"/> Public Hearing – 7:00 <input type="checkbox"/>

MOTION/RECOMMENDATION:

Briefing Item Only

As part of this briefing, staff will be providing a presentation regarding the Iron Bridge Water Reclamation Facility Rehabilitation program. In 1979, Seminole County began participating with the City of Orlando on this wastewater treatment and disposal facility which opened in 1981. Due to the age of the facility, it is now time for a major rehabilitation of this facility. A brief history of the facility, along with a summary of the improvement will be presented by City of Orlando's staff members, Alan Oyler, P.E., Deputy Public Works Director and Thomas L. Lothrop, P.E., Wastewater Division.

Seminole County's cost share for the overall project is \$7,447,875. Over the next several months, staff will be looking at moving forward with a proposed financing plan.

Reviewed by:
Co Atty: <u>na</u>
DFS: _____
Other: _____
DCM: <u>SS</u>
CM: <u><i>RA</i></u>
File No. <u>PESA01</u>

Presentation to Seminole County Commission

Iron Bridge Water Reclamation Facility Improvements Program Amendment VI



City of Orlando
Department of Public Works

History

- Adoption of Clean Water Act in 1972
- 201 Facilities Plan for regionalizing wastewater treatment
- Consolidated treatment needs for portions of Maitland, Casselberry, Winter Park, Seminole County, Orange County and Orlando
- Developed concept for Iron Bridge regional plant under the operational control of the City of Orlando
- Memorialized in 1976 agreement and series of amendments

History

- Iron Bridge regional facility (24 MGD) opened in 1981
- Some of the innovative design components created operational problems and plant had difficulty remaining in compliance with the permit
- EPA/FDER issued consent decree/consent order requiring construction of improvements to bring plant into compliance by December 1986
- The need to implement an improvements program started the first series of construction-related amendments to the original agreement

History

- In addition to need for improvements, several partners were requesting additional capacity
- Constructed the 4 MGD hyacinth project in 1985 as a “temporary” expansion until design and construction of full scale expansion could be completed
- Phase II, a 12 MGD BardenPho facility, expanded the plant to 40 MGD and was funded by Winter Park, Seminole County and Orlando

History

- While Phase II was under construction, Phase I plant was still struggling to meet permit and was costly to operate
- EPA offered grant monies to entities that had tried RBC technology as part of the grant program
- City received a 100% grant to fund Phase III, another 12 MGD BardenPho plant, that would allow original RBC plant to be down rated to 16 MGD but still keep overall rating at 40 MGD
- Phase II completed in 1989 and Phase III in 1991

History

- RBC plant functioned better at 16 MGD, but was still energy intensive and not very stable
- In 1999, plant operators started noticing widespread breakdown of RBC plastic media
- Called in a plastic materials specialist who determined that the media was failing and would need replacement in the near future
- Received quote from RBC manufacturer of \$29 million for “material only” if we wanted to replace in kind

Plant Rerating

- City felt that reconstruction of RBC plant would be too costly and would perpetuate operational problems
- BardenPho plants were conservatively designed and staff felt these facilities could be rerated
- Developed a plan for running a full-scale pilot test to determine true capacity of BardenPho facilities
- Pilot test showed that with some modifications, plants could be rerated from 24 to 40 MGD and fully replace the RBCs

Plant Rerating

- Pilot test data was submitted to FDEP for review and in 2001, the City was granted a permit modification allowing the RBCs to be decommissioned
- RBCs were taken off line in July 2001 resulting in annual operating savings of over \$1 million
- City secured the services of Boyle Engineering and CDM to design the necessary improvements to BardenPho plants for permanent rerating

Improvements Program

- RBC replacement project represents significant part of the capital program in Amendment VI, but is not the only work required
- Original plant components are 23 years old; Phases II and III are 13 years old
- Other plant components are in need of replacement due to age, deterioration and obsolescence

Cost Sharing with the Partners

- Each of the partners will be asked to contribute their proportional share of the construction cost so plant can retain 40 MGD rating
- Proportional share is determined by which portion of the facilities is being replaced and how much capacity is owned by the partner in that phase
- Following are three tables: one that shows each partner's capacity ownership in Iron Bridge and two that show the projected cost of improvements for the Original Partners and the Current Partners.

Capacity Allocation

	Participant Totals at 28 MGD (Original)		Current Capacity Totals at 40 MGD (Current)	
	MGD	%	MGD	%
City of Orlando	14.66	52.4	20.66	51.7
Seminole County	3.59	12.8	8.51	21.3
Orange County	0.38	1.3	0.38	0.9
Winter Park	5.21	18.6	5.96	14.9
Maitland	1.10	3.9	1.10	2.8
Casselberry	3.06	10.9	3.40	8.5
TOTAL	28.00	100	40.00	100

Improvements Program – Original Partners

Total Cost Seminole County

Rerating Improvements	\$15,152,256	\$1,761,753
Phase I Clarifier Improvements (complete)	\$179,140	\$20,829
Econ River Outfall Repair	\$260,000	\$30,230
Total Cost – Original Partners	\$15,591,396	\$1,812,812

Seminole County's Share of Original Plant is 12.8%

Improvements Program – Current Partners

Total Cost Seminole County

SCADA replacement (ongoing)	\$2,597,000	\$552,223
New Wetlands Outfall (complete)	\$426,706	\$90,734
Master Pump Station Rehab. & Emergency Power Imprv.	\$3,423,122	\$727,889
Sludge Press Replacement and Odor Control Upgrade	\$8,778,396	\$1,866,629
RBC Replacement Engineering Services (ongoing)	\$4,139,087	\$880,131

Improvements Program – Current Partners

Total Cost Seminole County

ABW Filter Replacement (ongoing)	\$5,056,178	\$1,075,141
Digester Cover Removal & Master PS Inlet Repair	\$2,080,000	\$442,290
Total Cost – Current Partners	\$26,500,489	\$5,635,037

Seminole County's Share of Current Plant is 21.3%

Improvements Program

Total Cost Seminole County

Total Cost - Original Partners	\$15,591,396	\$1,812,812
Total Cost - Current Partners	\$26,500,489	\$5,635,037
Total Cost	\$42,091,885	\$7,447,849

Seminole County's Total Share is 17.7%

Projected Expenditure Schedule

	FY 2003/04	FY 2004/05	FY 2005/06	Total
Total Project Costs	\$15,104,760	\$19,410,997	\$7,576,128	\$42,091,885
Seminole County's Share	\$3,194,612	\$3,372,387	\$880,876	\$7,447,875

Cost Sharing with the Partners

- Staff has worked with the Technical Advisory Committee (TAC) for the last 4 years to keep partners informed of preliminary costs to allow opportunity to budget for these expenses
- City has already incurred some costs, but will be incurring the majority of costs over the next 24 months
- Each of the partners will receive an agreement that shows their proportional share of the improvements

Cost Sharing with the Partners

- City is requesting that each of the partners review, approve and sign the agreement
- City will begin issuing invoices for reimbursement of costs already incurred, after execution of the agreement
- Both legal and technical staff will be available to answer any questions your staff may have regarding the agreement, the project list and the cost estimates