

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA
WORKSHOP
MARCH 18, 2013 – 6:00 P.M.
CITY HALL COMMISSION CHAMBER

The City Commission of the City of Wildwood, Florida met in Workshop session March 18, 2013 at 6:00 p.m.

Present were: Mayor Wolf, Commissioners Bivins, Green, Clark and Strickland. Also present were: City Manager Cannon, City Attorney Blair, Assistant City Clerk Roberts, Police Chief Reeser, Development Services Director Peavy, AVT Law and Utility Director Phillips. The meeting was called to order. No Invocation or Pledge.

Mayor Wolf reported that Pastor Leslie Hannah passed away over the weekend, and he would be missed by the entire Community.

1. TIMED ITEMS AND PUBLIC HEARINGS - None
2. REPORTS AND PUBLIC INPUT / SPECIAL PRESENTATION(S)
 - a. Special Presentations –
 - 1) Champagne Farms Water Treatment Plant Preliminary Design Report – Richard Busche, Kimley-Horn and Associates, Inc. (Attachment on file)

A Powerpoint presentation was provided by Richard Busche, Lewis Bryant, and Gene Losito of Kimley-Horn.

Richard Busche indicated the presentation would be informational. Report (complete report on file)included:

Executive Summary

The City of Wildwood (City) is anticipating significant growth in the City's utility service territory over the next 20 years. In response to this anticipated future demand, the City is planning for a new regional water treatment facility. The City currently has two Lower Floridan Aquifer (LFA) wells that were constructed on the Champagne Farm property. The wells have been tested and can provide suitable water quality and production for a new regional water supply and treatment facility.

Water quality testing was conducted at the time the wells were constructed. The wells show elevated concentrations of total sulfides, odor (indicative of sulfides), and water hardness (as calcium carbonate - CaCO₃). While the water hardness levels are considered as "elevated", the reported concentrations are similar to the current concentrations in the City's distribution system. Therefore, the only recommended form of treatment beyond disinfection is for the removal of sulfides.

Because Champagne Farm is relatively close to residential properties, odor control should be a design consideration. With that in mind, this report recommends a packed tower aerator with pH adjustment for sulfide removal. A significant advantage of packed tower aeration is the ability for odor control during treatment. However, it is recommended that additional testing be performed to verify the previous testing results. The costs associated with treatment components are significant and additional testing to justify the inclusion or exclusion of additional treatment equipment should be considered.

The ultimate capacity of the Champagne Farm WTP is estimated to be 6.0 Million Gallons per Day (MGD) to meet the projected 20-year demands. However, the City has the opportunity to approach construction of the plant in a phased plan. The first phase would include the construction of the necessary components to provide 4.5 MGD which should be adequate to accommodate the anticipated growth for the next 10 years. Expansion to 6.0 MGD can be delayed until the actual growth requires additional capacity to meet demands.

Opinions of probable cost were developed for each of the phases. The estimated cost of design and construction for Phase I is \$8,238,000. The estimated design and construction cost for the Phase II is \$1,230,000. These cost opinions represent conservative planning level values based on recent construction costs of similar projects. The actual construction costs will depend on a variety of factors including cost of labor and materials and at the time of construction. In addition to the cost of constructing the treatment plant, the cost of additional infrastructure improvements associated with Champagne Farm WTP needed to be considered to fully understand the total cost of the new WTP. These infrastructure improvements include watermains that will connect the new plant to the existing system and existing water mains that will need to be upgraded.

An extensive analysis of the existing distribution system was performed to identify the location and magnitude of the necessary additional infrastructure projects. Analyses were performed for present day and future conditions using the City's water system hydraulic model. The model results show that some significant infrastructure projects will be required to accommodate a new Champagne Farm regional WTP. The following are the two most significant projects that will be required:

- Construct 17,200' of 24" watermain along CR-475 to connect Champagne Farm to the existing system on SR-44. Approximate cost of construction- \$4,206,000
- Construct 23,700' of 24" watermain to connect Champagne Farm to the North near C-214. Approximate cost construction- \$5,814,000.

Additionally, the model results show that the Coleman WTP will provide a majority of the water required by future demands. Due to Champagne Farm's proximity relative to the anticipated future growth, the Champagne Farm WTP will provide a smaller fraction of the water required by the future demands. Therefore, even with a new WTP at Champagne Farm, the Coleman Facility will require expansion and additional distribution system improvements.

According to City staff, the Champagne Farm location was selected because it was outside the "cone of influence" of Lake Deaton and Lake Okahumpka. However, a review of the planned developments with City staff shows that a majority of the large scale future developments will be located in the southeast section of the City's service territory. At this time, there are no large scale developments planned in the Champagne Farm area. Therefore, it is recommended that the City consider alternative locations for a new regional WTP. While a regional WTP can be located at Champagne Farm site, there are other potential locations that are closer to the anticipated developments which could be more cost effective. Any new location could still use the LFA as the water source. The regional hydrogeological characteristics indicate that other LFA sources within the City's service territory

are likely to be similar to that found at the Champagne Farm site. Therefore, the treatment alternatives contained in this report are not likely to change for alternative locations.

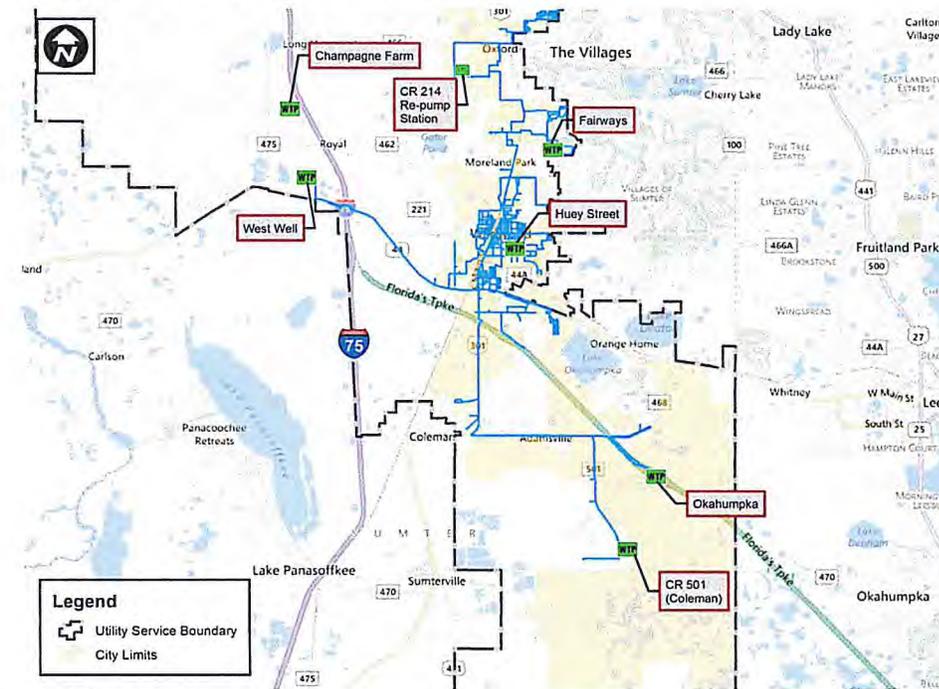
Power Point text:

Project Purpose

- KHA was retained to prepare the Champagne Farm Water Treatment Plant (WTP) Preliminary Design Report (PDR)
- The report was to include:
 - Preliminary design evaluation of the Champagne Farms WTP
 - Create a computer model of the entire City water system
 - Water use projections
 - Recommended water system improvements
 - Cost opinions

Project Time Line

- April 2012 KHA work assignment kicked off
- April 2012 to October 2012 – Data collection, modeling, analysis
- October 2012 – Draft report completed
- December 2012 – Final report submitted



Champagne Farms WTP

- Why was the Champagne Farm site selected?
 - Location was sited in 2005
 - Outside The Villages cone of influence
 - Willing property owner / developer
 - Large planned developments in the area
 - Funding assistance available
 - Away from environmentally

sensitive areas

- It appeared that significant growth was about to occur in the vicinity
- Existing Infrastructure:
 - Two Lower Floridan Aquifer Wells
 - Two Upper Floridan Monitoring Wells
 - Construction completed in 2010
 - No new activity since well construction was finished

Water Quality

- Water quality tests revealed good results
- Only four contaminants showed a concern:
 - Hydrogen Sulfide (*High odor results, need additional treatment*)
 - Iron (*Secondary FDEP MCL, No additional treatment required*)
 - Hardness (*No FDEP MCL, Similar results to existing water supply wells*)
 - Total Dissolved Solids (*Close to exceeding MCL, No treatment required at this time*)

•Proposed Infrastructure:

- Driveway, Parking, Stormwater Retention
- Control and High Service Pump Building
- Generator
- Ground Storage Tanks
- Disinfection / Chlorination System
- Packed Tower Aeration Equipment

•Assuming a 20 year timeframe for completion of existing projects, known projects, and infill growth, the Champagne Farm WTP could be constructed and phased as follows:

- 10+ Years: 4.5 MGD Phase 1 Construction
- 20 Years: 6.0 MGD Phase 2 Upgrade
- Variable depending on growth patterns

Opinion of Probable Costs

Project	Cost
4.5 MGD Phase 1 Construction	\$8,238,000
6.0 MGD Phase 2 Construction	\$1,230,000
Connection Option 1	\$4,206,000
Connection Option 2	\$5,814,000

Potential Funding Sources

- Florida Rural Water Association Loan Programs
- State Revolving Fund Loan Program (SRF)
- USDA Water & Waste Disposal Loan & Grant Program
- Connection / Tie-Fees
- Private Development Partnerships

Water System Model Creation

- What is a “Water System Model?”
- Created the hydraulic model from:
 - GIS Maps and Data collected in 2009
- Updated from collaboration with City Staff
 - Water Use Billing Data from 2011
 - Collaboration with City Staff on WTP operating conditions

Water System Model Calibration

- Calibrated the computer model by:
 - Conducting field pressure tests with City Staff*
 - Comparing test results with model results*
 - Modifying the model to match real life results:*
- Within 15% for entire system
- Within 10% for majority of system

KHA indicated that at this time Fire Flows is good. The Model will provide updated information as needed as long as the Model is updated with any development additions and changes to the water system.

Growth Patterns and Projections

- KHA collaborated with development services staff to identify future development including:
 - Existing projects that are not at build-out*
 - Future projects and development potentials*
- KHA assumed buildout over a 20 year period
- Champagne Farms phasing and other system improvements will vary depending on actual growth conditions*

Model Scenario Analysis

- Modeled 79 different scenarios to analyze impacts of system improvements at different timeframes
 - 5 Year to 20 Year Model Results*
 - Various system modifications, improvements, and scenarios (What-ifs)*
- CR 501 Plant Expansion
- CR 214 Reliability Issues

Summary

- Champagne Farms is in a good location, but not necessarily for the current prediction of growth patterns.
- When needed, the Champagne Farms WTP can be built in two phases.
- In addition to the WTP, long transmission lines are needed.
- Development patterns will dictate the timing of construction

Conclusions

- Growth patterns to the south may mean that the CR 501 Coleman plant is the next WTP to be upgraded
- Public / Private partnerships need to play a role in future improvements
- The computer model is a powerful tool to help evaluate scenarios when developers are ready to move forward
- Now is the perfect time to make sure existing facilities are in excellent operating condition:
 - CR 501 Coleman Repairs*
 - Plans and specifications are nearly complete for these repairs*
 - Bidding can occur this spring*
 - CR 214 Pump Station Repairs*
 - Reliability issues are present*
- An assessment of the plant has been completed this month and needed repairs identified for action*

In response to questions from the Commission KHA feels that repairs to CR 501 Coleman and CR 214 Pump Station will provide the flow necessary at this time, with Champagne Farms in the future as the area develops.

Concerns of a line break between the City and the Interstate were expressed by the Commission. CA Blair indicated she is negotiating with the land owners where the West Well is located to remain there for three years with possible compensation, and the well to be used as an emergency backup. Mayor Wolf questioned the possibility of paying to use water from the SWFWMD property in an emergency. Rick Busche indicated that has been brought up in discussions for review.

4. ADJOURN

Upon a motion by Commissioner Bivins, and second by Commissioner Green the meeting was adjourned.

CITY COMMISSION
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SEAL

ATTEST: Joseph Jacobs
Joseph Jacobs, City Clerk

Ed Wolf
Ed Wolf, Mayor