

FWEA WEST COAST CHAPTER NEWSLETTER

2015 4TH QUARTER

IN THIS ISSUE

Florida Water Festival

Hillsborough County

Northwest Wastewater

Service Area Consolidation

*A Successful Career Path for
Life*

USF Team goes to WEFTEC

Take us out to the ball game

Upcoming Events

*Wise Words: an illustrated
series of inspirational quotes*

GREETINGS FROM THE STEERING COMMITTEE

Why hello there, FWEAer!

The West Coast Chapter Newsletter has a new look, and we are thrilled to unveil it for the last issue of the year. After talking about new approaches for the newsletter for quite some time now, we decided it might be best to reach out to our FWEA neighbors to find out what they do. We were amazed and grateful by the responses from all of the FWEA Chapter Chairs. We learned a lot and are definitely inspired. Moving forward, we are planning on incorporating their successes into the newsletter and trying out some new things as well.

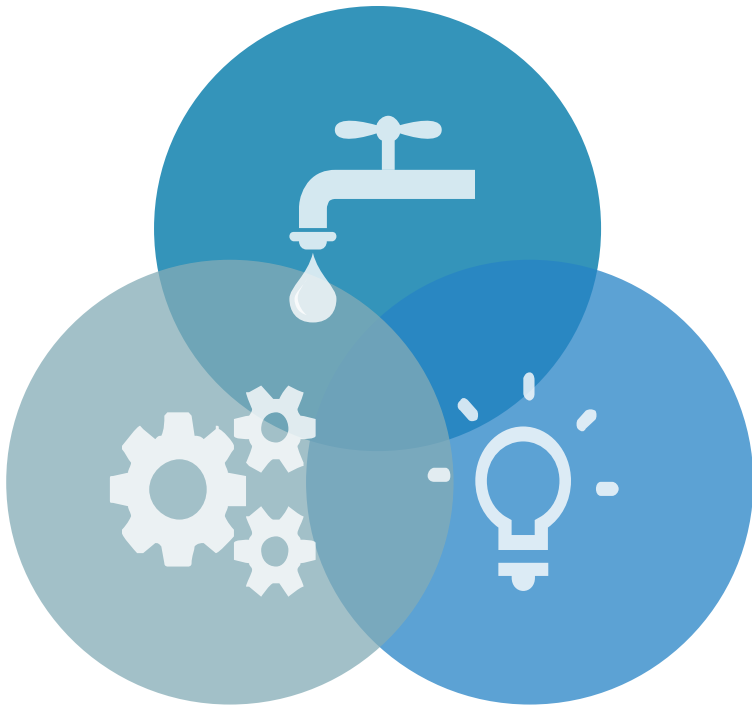
We hope that the new format will help facilitate a meaningful and informative newsletter for our Chapter. The goal of the newsletter is to connect water resources professionals in Citrus, Hernando, Hillsborough, Pasco, and Pinellas Counties, keep our 250+ members up to date about upcoming events, and showcase the work and accomplishments of our talented community. We want to hear from you and welcome your thoughts, suggestions, pictures, articles, and whatever else you can think of. We want to collaborate with you in order to develop the newsletter into a well-read publication for our community.

On behalf of the FWEA West Coast Chapter, we would like to thank all of the participants, volunteers, sponsors, and speakers for a successful year for the Chapter. The year is not over yet, and we are looking forward to the upcoming luncheon on Thursday, November 5th at Columbia Restaurant. Cindy Zhang-Torres and Kate Helms of the Florida Department of Environmental Protection will present an informational session on the revisions to the rules for the Generic Permit for Discharge of Ground Water from Dewatering Operations and the Generic Permit for Stormwater Discharge from Large and Small Construction Activities. We hope to see you there!

Best wishes!

Kristen Andre,
FWEA West Cost Chapter
Communications Co-Chair

FLORIDA WATER FESTIVAL



The Florida Water Festival is FWEA's premier educational event. It is a unique learning opportunity for children and adults alike. The free to attend event is designed to educate the public at large of the importance of protecting Florida's precious water resources.

The Festival features fun and informative activities, a student competition, enlightening displays explained by water experts, and interactive demonstrations. Water quality professionals from public utilities and private sector companies are available to answer questions and share their passion about protecting our state's most valuable resource – **WATER**.

The West Coast Chapter will be holding the next Florida Water Festival on April 9th, 2016 at the City of Tampa's Water Works Park! If you are interested in volunteering or sponsoring this year's event, please contact [Tim English \(tsenglish@reisseng.com\)](mailto:tsenglish@reisseng.com) to get involved.

SEE YOU IN APRIL!

SAVE
THE
DATE

**SATURDAY,
APRIL 9, 2016**

City of Tampa's
**WATER
WORKS
PARK**

HILLSBOROUGH COUNTY NORTHWEST WASTEWATER SERVICE AREA CONSOLIDATION

By Kristiana S. Dragash, P.E.¹, Roderick D. Reardon, P.E.¹, Erica Stone, Ph.D., P.E.¹, George B. Cassady, P.E.², Luke A. Mulford, Ph.D., P.E.², Thomas F. Rawls, P.E.²

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INTRODUCTION

Various options for consolidation of the treatment facilities in the Hillsborough County Northwest Wastewater Service Area (NWSA) have been evaluated in two previous reports completed in 2008 and a series of technical memoranda completed by the County in 2012. Since these studies, the County has shifted towards a strategy of consolidation by:

1. Decommissioning and diverting flow (6 mgd) from the Dale Mabry AWWTF (to avoid costly improvements required by a Consent Order and high on-going operations and maintenance costs)
2. Expanding the Northwest Regional Water Reclamation Facility (NWRWRF) from 10 to 26 mgd.
3. Decommissioning and diverting flow (10 mgd) from the River Oaks AWWTF

Figure 1 shows a location map of the wastewater treatment facilities in the NWSA.

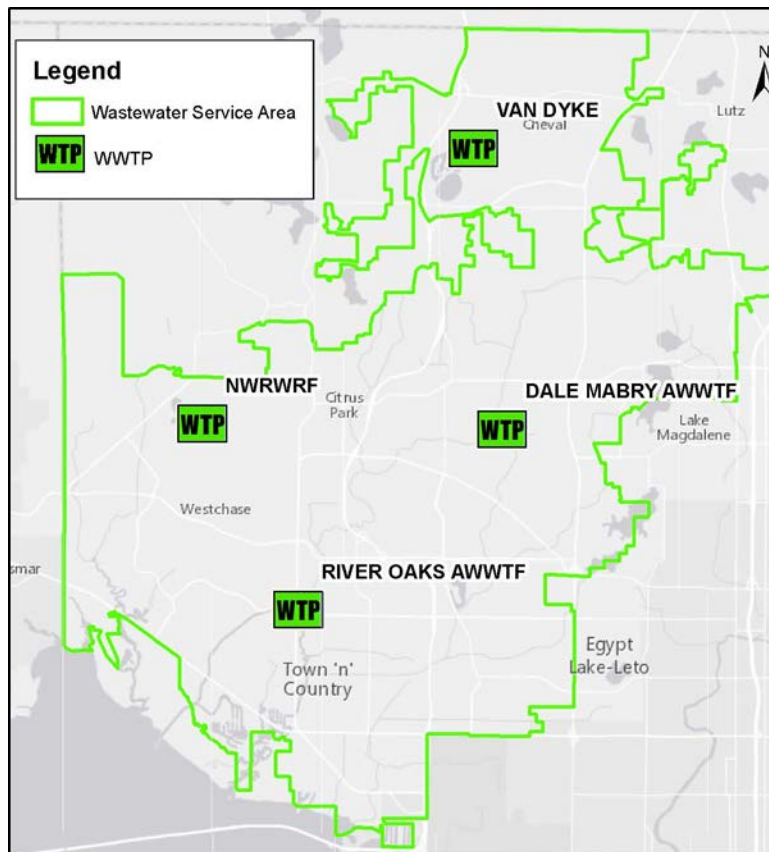


Figure 1. Treatment Plants in the Hillsborough County Northwest Service Area

The current consolidation plan stems from a 20-year present worth and cash flow comparison of consolidation options. This article discusses the preliminary analysis of the NWSA consolidation options.

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ANALYSIS OF NWSA CONSOLIDATION OPTIONS

Three consolidation options were developed for a present worth and cumulative cash flow comparison. The present worth cost estimates assume immediate implementation of flow transfers and capital projects to obtain a true 20-year cost comparison of the alternatives. The cash flow analysis considers the actual schedule of the projects and flow transfers over a 20-year period.

Option 1: Status Quo

Option 1, the “status quo,” serves as a baseline for comparison of Options 2 and 3. In this option, the operations of the facilities in the NWSA remain as they are currently. The River Oaks and Dale Mabry AWWTFs continue to serve their given service areas. County flow projections and the 2012 annual operation and maintenance (O&M) rate per 1,000 gallons for each facility were used to estimate present and future O&M costs. The capital values of the WRFs for purposes of estimating future repair and replacement (R&R) costs associated with each facility were estimated at \$12/gal-day. For example, the value of a 10-mgd WRF would be \$120 million. Capital improvement projects (CIPs) for NWRWRF, River Oaks AWWTF, and Dale Mabry AWWTF scheduled for completion within the next 5 years are the only certain capital costs associated with Option 1. R&R costs can be seen as future CIPs that would be completed at the facilities. Also note that due to the age of the facilities, County staff had concern with unforeseen or catastrophic events at the River Oaks and Dale Mabry AWWTFs that might require immediate and costly repair.

Option 2: River Oaks to City of Tampa

Option 2 evaluates transferring a portion of the flows from the River Oaks AWWTF to the Howard F. Curren AWWTF in the City of Tampa (CoT) for treatment. Flow from the Dale Mabry AWWTF would be transferred to NWRWRF. Both the River Oaks and Dale Mabry AWWTFs would be decommissioned in this option. A full expansion of NWRWRF would not be necessary for this option, though improvements and a minimal increase in treatment capacity at NWRWRF would ultimately be required to treat flow from NWRWRF, Dale Mabry, and the portion of River Oaks flow that cannot be transferred to the CoT. The River Oaks transfer to the CoT is limited by the capacity of the existing CoT collection system infrastructure. Hydraulic modeling completed by the CoT indicated that the City cannot accept more than 5.4 mgd average daily flow, and 10 mgd under peak flow conditions. The pipeline route for the River Oaks flow transfer in Option 2 is shown on Figure 2. By closing two existing valves, and interconnecting specific pump stations, the County can utilize existing infrastructure to redirect flow, consequently minimizing new construction of force mains to connect the County’s River Oaks wastewater service area to the CoT (Hillsborough County, 2012b).

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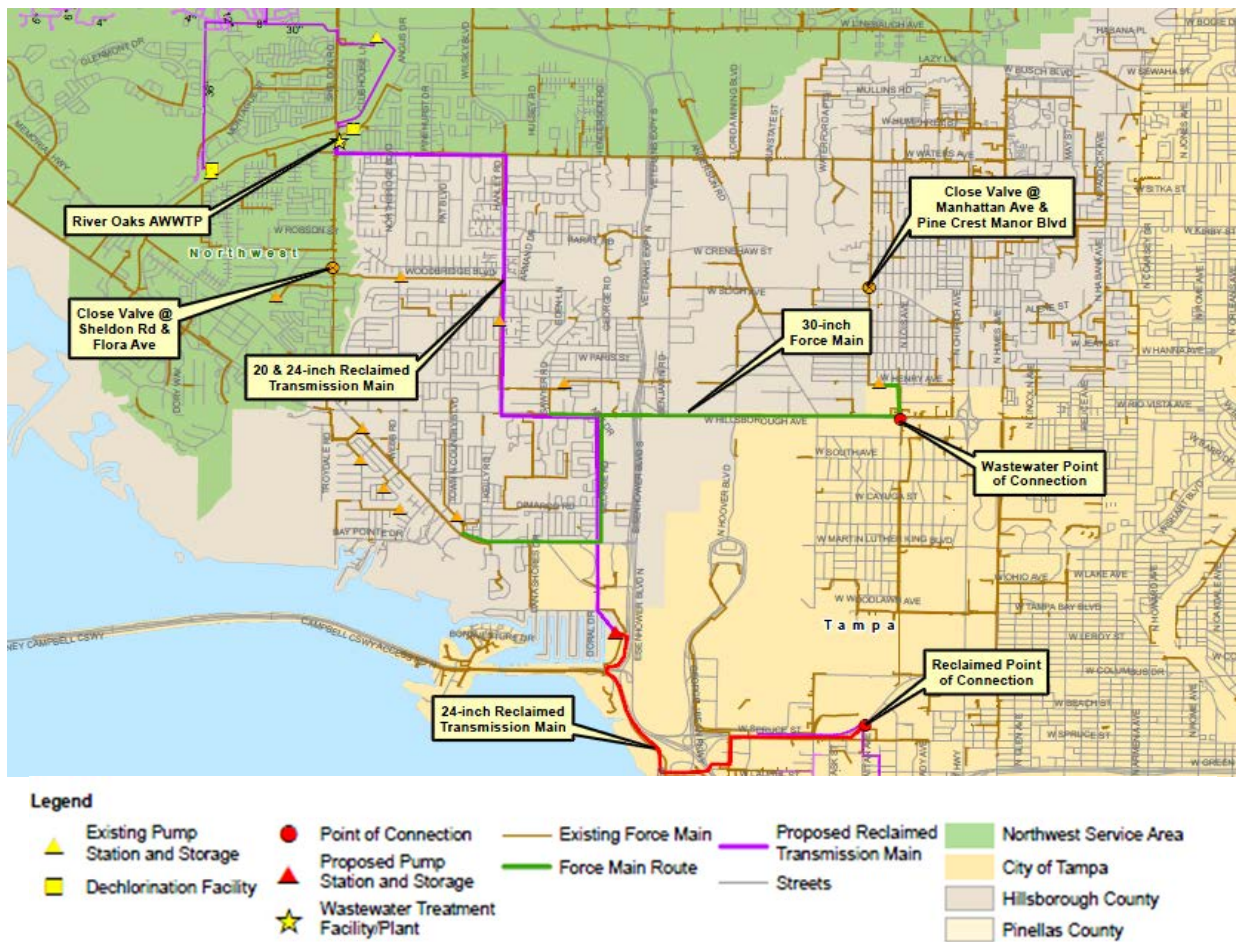


Figure 2. Option 2 River Oaks to City of Tampa Concept Map(a)
(Hillsborough County 2012b, 2012c)

Option 3: Dale Mabry and River Oaks to NWRWRF

Option 3 evaluates transferring all of the flow from River Oaks and Dale Mabry AWWTFs to the NWRWRF. Both the River Oaks and Dale Mabry AWWTFs would be decommissioned and transfer force mains from both facilities to NWRWRF would be required (Hillsborough County, 2012a). The Dale Mabry flow transfer would be completed first, followed by the expansion of NWRWRF, and River Oaks flow transfer. Figure 3 shows the pipeline routes for Option 3.

A new submersible pump station would be constructed, located in the middle of the Dale Mabry site to transfer flow from the Dale Mabry AWWTF to the NWRWRF. Reclaimed water would be pumped back from NWRWRF to the Dale Mabry service area. Per meetings between the County and FDEP any treated plant effluent that would have been discharged to surface water at the Dale Mabry AWWTF, must be discharged at that location even after the facilities are consolidated.

The County would decommission and demolish the River Oaks AWWTF once the flow is transferred, leaving nothing remaining on the site. A transfer pump station would be constructed north of the River Oaks site to transfer wastewater flow from River Oaks to NWRWRF.

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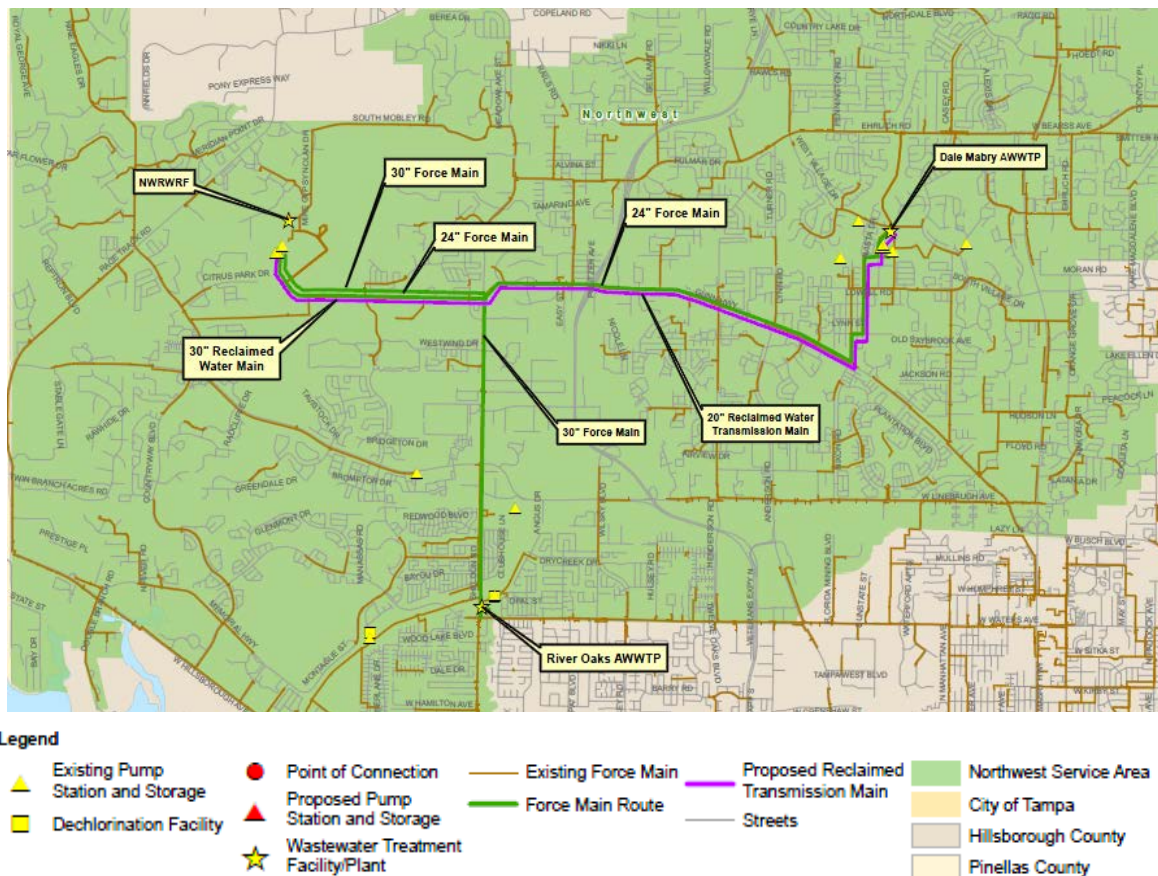


Figure 3. Option 3 Dale Mabry and River Oaks to NWRWRF Conceptual Pipeline Routes

NWSA Consolidation Analysis Results

Table 1 and Figure 5 summarize the present worth comparison between the three consolidation options. Figure 6 summarizes the cumulative cash flow comparison. As shown, Option 3 to decommission the River Oaks and Dale Mabry AWWTFs and expand the NWRWRF was the most favorable alternative in terms of present worth cost. Capital costs are greatest in Option 3, due to expansion of NWRWRF in addition to transfer pipelines. The total present worth of Option 2 was the highest of the three options due to the fees to the City of Tampa for wastewater and reclaimed water service.

Table 1. Capital and Present Worth Cost Comparison (a)

Cost	Option 1 (\$1,000s)	Option 2 (\$1,000s)	Option 3 (\$1,000s)
Capital Costs	\$203,000	\$203,000	\$245,000
O&M Cost	\$212,000	\$225,000	\$80,000
Total Present Worth	\$415,000	\$428,000	\$325,000

(a) Project life - 20 years; interest rate - 3.75 percent; operating costs - escalate by 2.5 percent per year; renewal and replacement costs - 100 percent of the asset value every 30 years; pump station maintenance - 5 percent of the asset value every 10 years; power costs - \$0.10 per kwh; pipeline construction costs - \$379/lf; engineering and administration - 25 percent of the construction cost; land acquisition costs not included; salvage value of existing equipment and land credits not included; cost estimates are class 5 "order-of-magnitude" cost estimates per AACE International.

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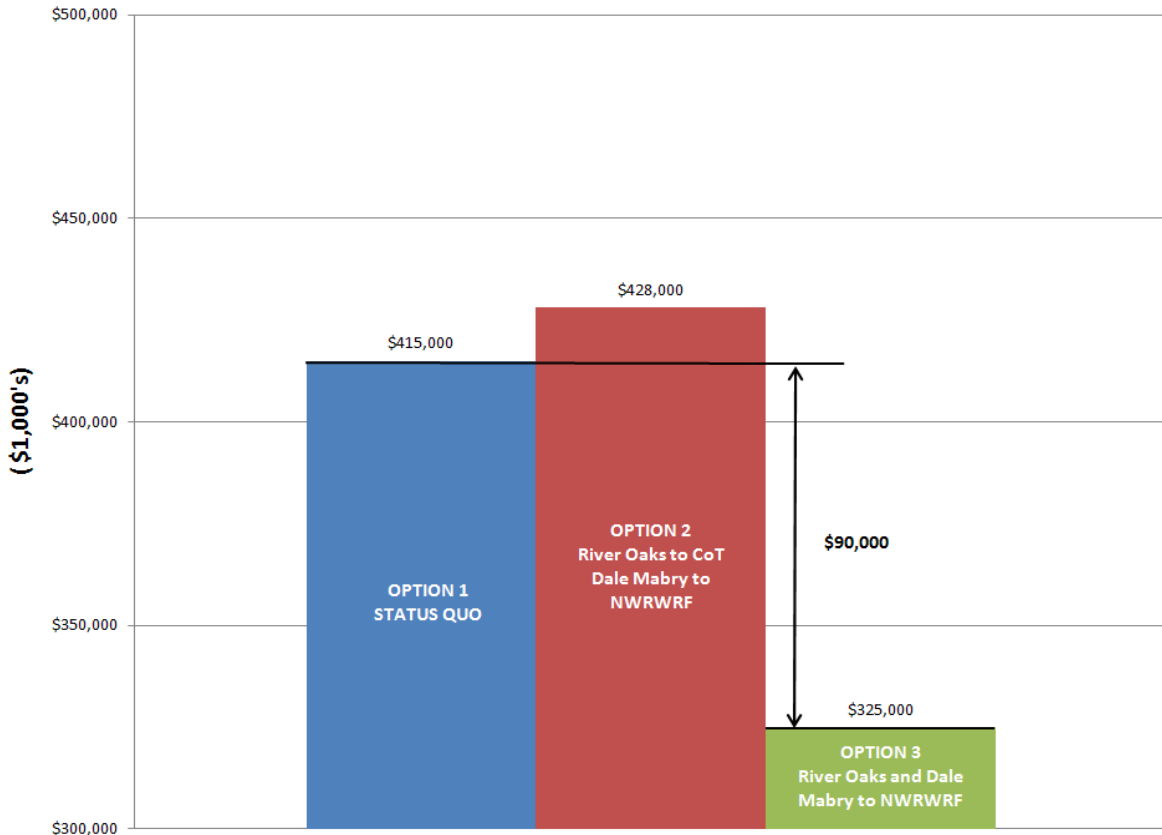


Figure 5. Consolidation Option Present Worth Cost Comparison

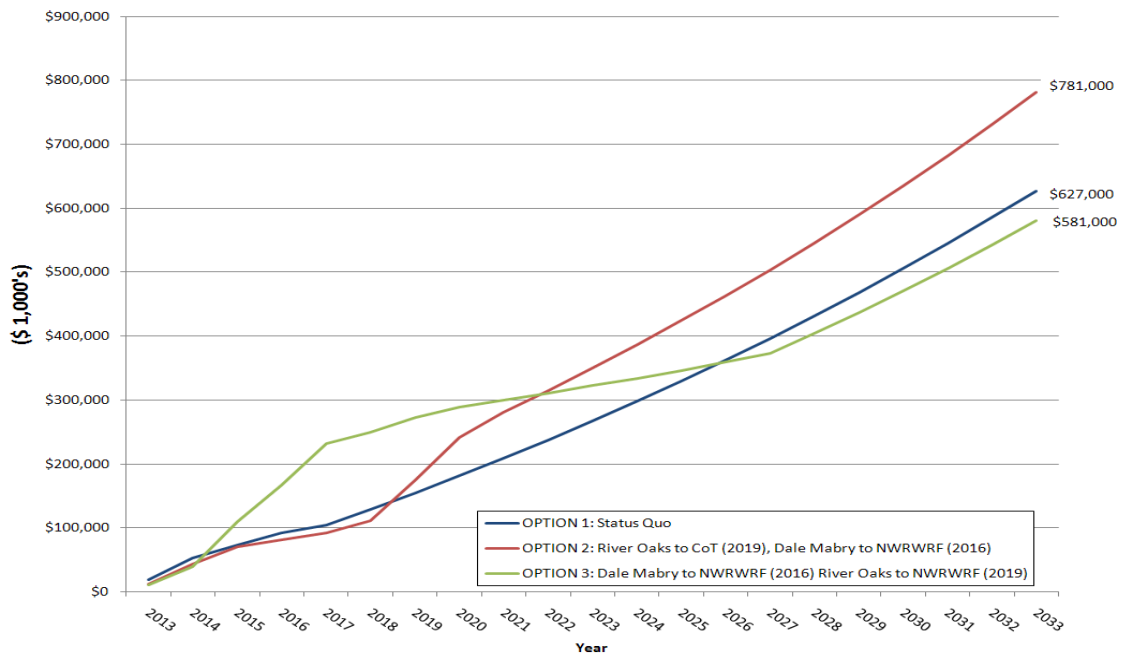


Figure 6. Consolidation Option Cash Flow Cost Comparison

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CONCLUSION AND STATUS

The County has begun to move forward with Option 3. The goal for completion of the NWSA consolidation is 5 years. Flow from Dale Mabry will be transferred to NWRWRF first, followed by the expansion of NWRWRF, the transfer of River Oaks flow. By completing the consolidation of the NWSA within the next five years the County is able to save money that would be spent on CIPs at River Oaks and Dale Mabry and instead use those funds towards the consolidation program.

ACKNOWLEDGEMENTS

This project and paper would not have been possible without the expertise and support of the following professionals: Martin Classen, Bob Cushing, Jim Duncan, Nick LoPresti, John Lyons, Kevin Moran, Kimberly Rogers, and Bart Weiss.

REFERENCES

Association for the Advancement of Cost Engineering (AACE); 2005; "Recommended Practice 18R-97 Cost Estimate Classification System for the Process Industries."

Hillsborough County; 2012a; "Northwest Service Area Water Reclamation Consolidation – Reclaimed Water Evaluation."

Hillsborough County; 2012b; "Alternatives for the River Oaks Advanced Wastewater Treatment Plant."

Hillsborough County; 2012c; "Potential Reclaimed Water Interconnect with City of Tampa."

Tampa Bay Nitrogen Management Consortium (TBNMC); 2010; "Reasonable Assurance Addendum (RA): Allocation and Assessment Report."



Do you have a technical article you would like to have featured in the newsletter?

Contact: Kristen Andre,
FWEA West Coast Chapter Communication Co-Chair
Kristen.Andre@arcadis.com
(813) 353 - 5745

A SUCCESSFUL CAREER PATH FOR LIFE

By: Rachel Cantor Fogarty, RC Associates, LLC

I was asked to answer the important question as an Engineer, how do I find a successful career path for life?

You may look around you and see many professionals happily committed to their careers and wonder why this bliss came so easy to them. This success didn't happen overnight. The keys to a successful career begin with a plan: figuring out what you want, with careful consideration and not too many false starts, and then creating a career plan to get there. Brainstorming, writing, implementing and updating a clear plan are essential steps - ones to work on continuously throughout a career in order to stay on track. It is truly a lifelong process and it's never too late in your career to develop your successful career path.

Success can mean many things to different people, which is why it is so important to define it for yourself.

Many professionals come out of college and hit the ground running. They bury themselves in work and professional organizations. Often, they are so excited to land that first job, and to have the newfound freedom of a steady paycheck that they may never stop to take time to think about where they are headed with all of this effort. They may be working hard, but how do they know if they are working smart? How do they know if theirs is "a successful career path for life?"

Success can mean many things to different people, which is why it is so important to define it for yourself. Like a business plan for an entrepreneur that is starting his/her own business, your successful career path is an individualized plan, and should lay out your life goals on what you want to do "when you grow-up." It doesn't have to be formal or in report format as it is just for "you." However, it should be written, and it should include a key few elements.

Research

Spend some time on the internet reading through journals, newsletters, and websites. A good place to start

is the WEF website. Educate yourself about new trends, technologies, and companies, and learn as much as you can about your field. Getting more involved in WEF can help you learn what you want and how you can get there. Jot down notes and start educating yourself. Not only will this make you a better engineer, but it will also help you learn about your likes/dislikes and help you start figuring out the direction you want to take.

Goals

Set specific, written, and measurable goals on where you want to be each year with your career. Your goals can be anything you want. For example, I have seen goals ranging from wanting to be a leader in a professional organization, to sitting for your PE license, to opening-up your own firm one day. There is no "right" or "wrong," it is purely about what you want.

Operating Plan

Take the goals that you have defined and lay out an operating plan on how they will be accomplished. Do not be overwhelmed here; you don't have to do it all at once. It will be easier if you take it one step at a time. For all of us overachievers out there, be realistic on what can be accomplished during any given year. Set clear steps that you will take to implement your plan. Ask a friend or mentor to review your plan to make sure it is reasonable.

Review/Update/Maintain

Now it's time to set the wheels in motion. Make sure that what you are doing is helping you to achieve your goals. Be focused and purposeful. It is better to get really involved in one organization than to spread yourself too thin with activities that might distract from the goal. Periodically, dust off your plan to review your specific goals and make alterations as needed. This is an ever evolving plan that will change over the years as your personal and professional goals change.

Now go out there, start writing your successful career path for life!

Rachel Cantor Fogarty is President of RC Associates, an engineering recruiting firm, which provides retained recruiting services to growing engineering companies nationwide. For more information visit www.rcassociatesllc.com or contact Rachel at Rachel@rcassociatesllc.com or 813-286-2075.

USF TEAM GOES TO WEFTEC

The University of South Florida (USF) team, consisting of Samantha Flores, David Lee, Alex Miller, Etienne Vawters, and Ileana Wald, participated in the Student Design Competition (SDC) at the Water Environment Federation Technical Exhibition and Conference (WEFTEC) in September after winning the SDC at the Florida Water Resources Conference (FWRC) back in April.



From left to right: Alex Miller, Etienne Vawters, Lisa Rhea (City of Oldsmar), Johna Jahn (City of Oldsmar), Ileana Wald, Samantha Flores, and David Lee.

Their project evaluated the cause of decreased injection flow rates from 700 gallons per minute (gpm) to 200 gpm at the City of Oldsmar's Aquifer Storage and Recovery System. The team analyzed the Water Reclamation Facility's historical water quality data and performed geochemical modeling of the injection and groundwater mixing in the well. The results indicated that calcite precipitation within the well and aquifer matrix was likely the cause of well clogging.

The team considered well acidization methods for rehabilitation of the well using carbon dioxide (CO₂) or hydrochloric acid (HCl). The evaluation showed that contracted HCl was most appropriate solution. HCl is a more effective acid, requires a lower injection frequency than CO₂, and is the most cost effective alternative. The team also recommended continued monitoring of the injection flow rates and recovery efficiency, and promotion of water conservation strategies through educational outreach.

The team had a great time working with the City of Oldsmar. The team was very excited to win FWRC and enjoyed the experience of WEFTEC at Chicago. The team would like to thank Dr. Sarina Ergas, Todd Cross, Emilie Moore, Lisa R. Rhea, Johna Jahn, Todd Cash, Mark Addison, Gary Glascock, Karl Payne, Kevin Morris, Mark B. McNeal, Stuart C. Anderson, and Teresa Therzog for their help, mentoring, and contribution to the Project.

TAKE US OUT TO THE BALL GAME

With another Rays season coming to a close, FWEA members gathered with friends and family to enjoy "America's Favorite Pastime". The 4th annual "Day with the Rays" was held on August 30th at Tropicana Field in St. Petersburg. The FWEA-West Coast Chapter sponsored discounted tickets to the game and pregame tailgate event. In all, 30 people were able to join in on the fun which capped was capped off by a Rays victory over the Kansas City Royals 3-2. More importantly, the game was an opportunity to network and enjoy some of the perks of being an active FWEA member.

Thanks for all those in attendance and we hope to see you at the next event!



UPCOMING EVENTS

- 11/05/15: West Coast Chapter Quarterly Luncheon
- 11/06/15: FWEA and FBC Workshop
- 11/12/15: FAWQC Fall Festival
- 11/12/15: FSAWWA Sponsor Appreciation Event
- 11/19/15: TBAEP Falliday 2015
- 11/29/15: FSAWAA Fall Conference
- 12/03/15: Manasota Chapter Luncheon
- 02/05/16: West Coast Chapter Sporting Clays

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FWEA WEST COAST CHAPTER

2015 / 2016 STEERING COMMITTEE MEMBERS

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WISE WORDS

an illustrated series of inspirational quotes

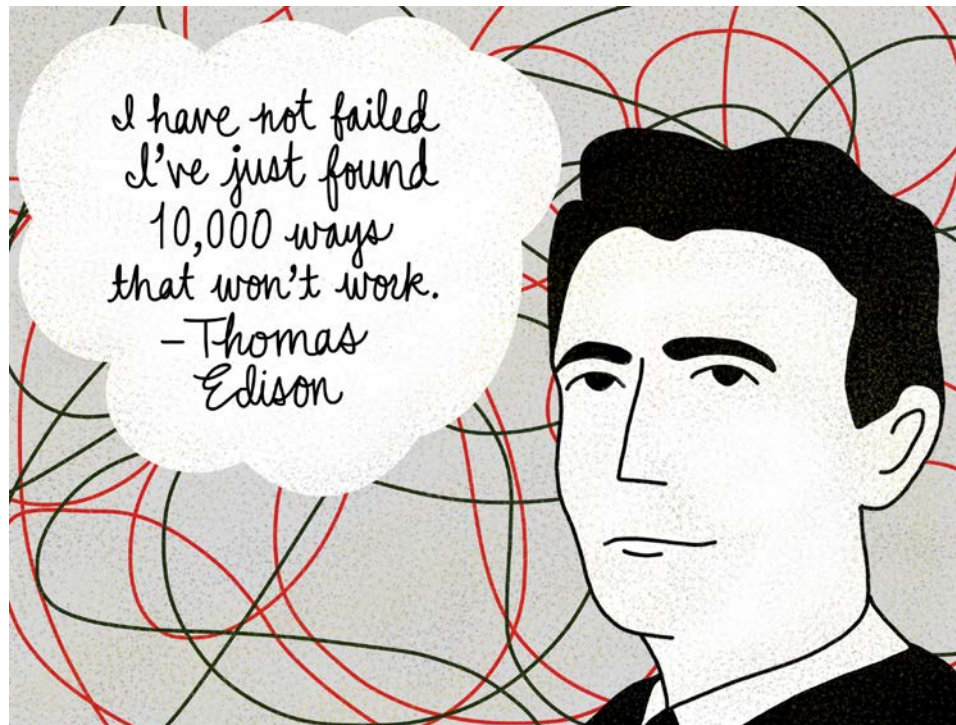


Illustration by Kristen Andre

FWEA WEST COAST CHAPTER

LUNCHEON MEETING

LUNCHEON INFORMATION

Columbia Restaurant

2117 East 7th Avenue
Tampa, Florida 33605
Thursday, November 5, 2015

Start Time - 11:30 AM
End Time - 1:00 PM

MENU

Option 1 - Pollo Salteado

Boneless pieces of tender chicken sautéed in a hot skillet with extra virgin olive oil, garlic, green peppers, Spanish onions, fresh mushrooms, potatoes, chorizo and red wine. Served with yellow rice.

Option 2 – Roast Pork “A La Cubana”

Generous slices of roast pork with a delicious marinade. Served like back home in Cuba with black beans, white rice and platanos.

Option 3 - Merluza “Russian Style”

Premium Atlantic Merluza, a tropical white flaky fish, breaded with Cuban bread crumbs and grilled. Garnished with a Russian sauce of lemon butter, parsley and hard boiled eggs. Served with yellow rice.

Option 4 – Vegetarian “Cubana”

Yuca, black beans, white rice, platanos, tostones and sautéed fresh vegetables.

An informational session on the revisions to the rules for the Generic Permit for Discharge of Ground Water from Dewatering Operations and the Generic Permit for Stormwater Discharge from Large and Small Construction Activities (CGP).

ABOUT THE SPEAKERS:



Cindy Zhang-Torres is a professional engineer and currently the permitting manager for the Industrial Wastewater, Drinking Water and Underground Injection Control Programs at the Florida Department of Environmental Protection (FDEP)'s Southwest District Office. Ms. Zhang-Torres has a Master's Degree in Environmental Engineering and Engineering Management. Prior to her current position, Ms. Zhang-Torres was also a permitting manager for the Air Program and Water Facilities at the FDEP's Southwest District Office.



Kate Helms holds a Bachelor of Science in Environmental Science from the University of Florida, where she also obtained a Bachelor of Arts in Visual Art and a Master of Fine Arts in Sculpture. Currently, she works as an Environmental Specialist and NPDES Stormwater Subject Matter Expert for the Florida Department of Environmental Protection Southwest District Office. Previously, she worked as an emergency responder during the Deepwater Horizon oil spill, where she led a team conducting submerged oil research along the Louisiana Coast. She has also worked as a wetlands consultant to the Coast Guard, a field biologist for the Everglades Sheetflow Restoration Project, and an Adjunct Assistant Professor at the Natural Area Teaching Laboratory at the University of Florida.

FWEA Members Pre-Registration: \$22; Non-members Pre-Registration: \$25; Onsite Registration: \$25

Registration Form

Pre-Registration Deadline: Wednesday, November 4

Please make checks payable to FWEA

Name: _____

Company/Affiliation: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Choice of Meal: _____

Send Check and Registration to:

Ricardo Borromeo
Wade Trim
8010 Woodland Ctr. Blvd., Suite 1200
Tampa, Florida 33614
Tel: (813) 882-4373
Fax: (813) 888-7215
E-mail: rborromeo@wadetrim.com

Register Online: <http://mms.fwea.org/Calendar/moreinfo.php?eventid=36674>