

# FWEA Manasota Chapter

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Vol 21 – February 2015

## Message from the Steering Committee

*By Manasota Chapter Chair  
Lindsay Marten, EI, LEED AP, Stantec*

After ringing in the New Year, the Manasota Chapter has been hard at work planning a handful of fun and exciting events for 2015.

The FWEA Leadership Development Workshop is scheduled for February 26-27, 2015 at the Shores Resort and Spa in Daytona Beach Shores. The workshop will concentrate on equipping and developing leadership skills among FWEA's current and incoming volunteer leaders. Kristiana Dragash, Lindsay Marten, Mike Knowles, and Danielle Bertini will be attending the workshop on behalf of the Manasota Chapter this year.

While our steering committee has recently grown, we have also seen members move up within the organization on the state level. Danielle Bertini was recently appointed as chair of the Student and Young Professional Committee. Congratulations Danielle!

The first luncheon of the year will be held on March 12, 2015, and Mark Hammond, SWFWMD Resource Management Division Director, will be presenting on the Senate Bill 536 study and its impacts to the reuse program. Mark will discuss the purpose, status, and schedule of this important study, so you don't want to miss it! As a reminder, our luncheon venue has changed. We are now meeting at the Sarasota County Operations Center (BOB Building). Since we are ordering food ahead of time and need RSVPs one week in advance, our pricing has changed as follows to encourage everyone to pre-register:

- ▶ \$15 member pre-register: RSVP by Friday, March 6
- ▶ \$20 non-member pre-register: RSVP by Friday, March 6
- ▶ \$25 walk in

I look forward to seeing you all at the luncheon!

National Engineers Week will take place February 22-28, 2015, which is dedicated to raising public awareness of engineers' positive contributions to quality of life, public health, safety, and prosperity. To celebrate EWeek, local County Commissioners and City Councils are asked to present proclamations to the engineering professionals throughout the month of February. If your

Continued from page 1


schedule permits, please support your fellow engineers and FWEA members by attending one or more of the upcoming meetings:

- ▶ City of Sarasota: 02/17 6:00 PM at City Commission Chambers
- ▶ Sarasota County: 02/18 9:00 AM at the County Commission Chambers

For EWeek, ASCE has coordinated a rare tour inside the Skyway Bridge, which is scheduled on February 25th at 9:00 AM. Space is limited, so contact [asce.suncoast@gmail.com](mailto:asce.suncoast@gmail.com) to reserve your spot. Also, the LeBarge Sunset Cruise Social hosted by ASCE will be held on February 27, 2015 at 5:30 PM. Tickets are \$10 per person payable on the day of the cruise at the Marina Jack Plaza registration desk. This event is always a nice way to get our fellow water and wastewater professionals together to enjoy the outdoors during the beautiful Florida winter weather. Lastly, the Toothpick Bridge

Contest will be held on February 28th from 10:00 AM to 2:00 PM at Suncoast Polytechnic High School.

The Chapter is off to a great start in 2015. On behalf of the FWEA Manasota Chapter, we would like to thank all of the participants, volunteers, presenters, and sponsors for making these events possible. Be on the lookout for more great opportunities and occasions to come throughout 2015!



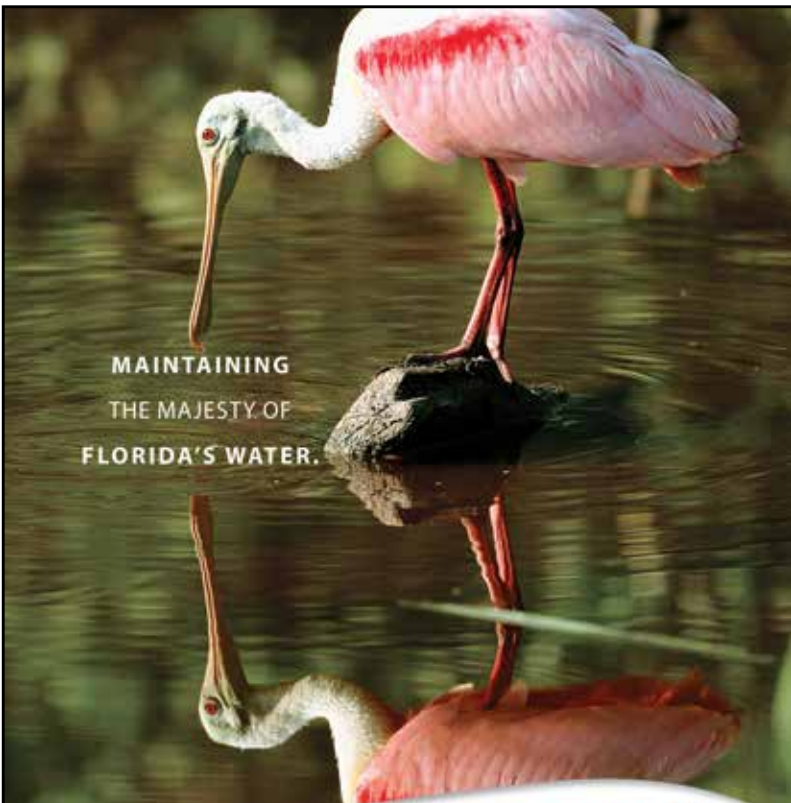
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# Calendar of Upcoming Events

## FEBRUARY

**6** FES Myakka Chapter  
Mathcounts Competition, Sarasota

**10-11** AWWA Region X and  
MAC New Technology Showcase,  
Bradenton

**12** FWEA Reuse Winter Seminar,  
Orlando

**18** FES Myakka Chapter  
Luncheon, Sarasota

**19** FWEA West Coast Chapter  
Luncheon, Tampa

**19** ASCE Suncoast Branch  
Luncheon, Sarasota

**22-28** National Engineers Week

**25** ASCE Suncoast Branch Skyway  
Bridge Tour

**26-27** FWEA Leadership  
Development Workshop, Daytona  
Beach Shores

**27** ASCE Suncoast Branch  
LeBarge Cruise, Sarasota

**28** ASCE Suncoast Branch  
Toothpick Bridge Contest, Sarasota

## MARCH

**11** FES Myakka Chapter  
Luncheon, Sarasota

**12** FWEA Manasota Chapter  
Luncheon, Sarasota



## February

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

## March

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

# ASCE SunCoast Branch is Celebrating E-Week Aboard the Le Barge Sunset Cruise



- WHEN:** February 27, 2015, Friday (During Engineer's Week!)
- DEPARTURE:** Registration begins at 4:30 PM / Cruise departs at 5:30 PM
- LOCATION:** Le Barge at Marina Jacks
- COST:** \$10/Person
- DEADLINE:** Space is limited. Please pre-register before February 20.
- RESERVATION:** Register online at <http://asesuncoast.weebly.com/lebarge.html> or email us at [asce.suncoast@gmail.com](mailto:asce.suncoast@gmail.com)

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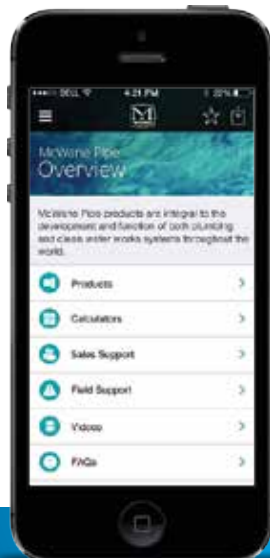
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This will be a social event for our members and members of our fellow professional organizations as well as their family and friends. Thank you!

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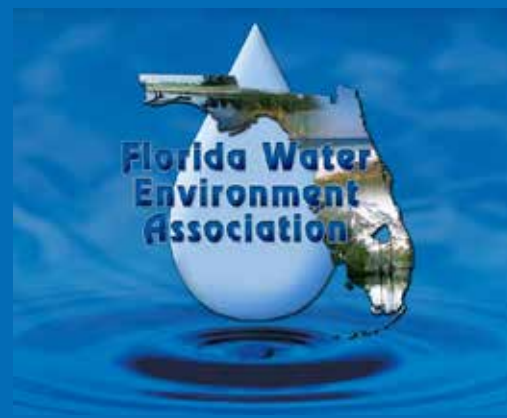
Maintain your company advertisement in the Manasota newsletter and continue to show your support of our organization.

*Contact*

*Mike Jankowski at 941-708-7450 (ex 7663)*

*OR*

*Laura Baumberger at 941-371-9832*



# Project Highlight: Quick-Dissolving Alkaline Odor Control for the City of Tampa – 2011 and 2014

By Vaughan Harshman, P.E. - Evoqua Water Technologies

The City of Tampa operates an extensive collection system that collects wastewater flow from the City and from adjoining municipalities via inter-local connections. East Tampa Pump Station is one of several master pump stations which collect flow from an upstream collection basin and pump directly to the Howard F. Curren Water Reclamation Facility. The station delivers approximately 11,360 m<sup>3</sup>/day (3 mgd) of wastewater to the Water Reclamation Facility.

East Tampa Pump Station is located in a primarily commercial and industrial area. It is immediately adjacent to a light manufacturing and warehousing facility with several others nearby. It is also within 300 m. (1,000 ft.) of two major thoroughfares - Adamo Drive and the parallel Lee Roy Selmon Expressway.



The current East Tampa Pump Station was constructed in 1995 and was outfitted at the time with a two-stage chemical mist scrubber for odor control. The mist tower system was rated for 13,500 cfm and successfully provided vacuum on the wet well and the upstream gravity sewer. When the system was functioning properly odors in the area were under control. During times when

the system was running but not functioning properly, the adjacent businesses and commuters on Adamo Drive and the Lee Roy Selmon Expressway were affected by odor discharge from the odor control system. If the odor control system was shut down adjacent businesses and commuters on North 39th Street were affected by odor discharge from upstream manholes.

In 2011, a project was initiated to rehabilitate the wet well of the East Tampa Pump Station. In order to perform the required repairs the wet well would need to be opened, resulting in loss of vacuum from the odor control system. City Engineers recognized the potential odor impacts on the surroundings and sought a temporary odor control solution for the facility. While the City was concerned about all potential odor impacts, the manufacturing facility immediately adjacent to the pump station was of particular concern. The main gravity sewer feeding East Tampa Pump Station flows along the west side of this facility and the station is located on the southeast corner of the facility. Fugitive emissions from

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## Project Highlight: Quick-Dissolving Alkaline Odor Control (cont.)

By Vaughan Harshman, P.E. - Evoqua Water Technologies

the sewer and the pump station historically impacted this facility during previous odor control interruptions. The location and historical odor experience of this facility made it a major stakeholder in the process.

Since the root problem would be an open wet well and corresponding loss of vacuum for vapor-phase odor control, the City sought a liquid-phase alternative. The objective was to treat the wastewater flow entering East Tampa Pump Station with a method which would reduce off-gassing of hydrogen sulfide thereby preventing odors from escaping the pump station site. The City first considered technologies which were already employed at other locations in the City collection system, namely magnesium hydroxide and nitrates. Both magnesium hydroxide and nitrates require a minimum of 30 minutes of detention time in order to be effective. The collection system upstream of East Tampa Pump Station is manifolded with no dominant flows, making the logistics of applying these alternatives difficult and inefficient. A solution was desired that could be fed at a single point on site or immediately upstream of East Tampa Pump Station. A non-hazardous technology was preferred.

The solution chosen was Alk-AQUIT™, a product of Evoqua Water Technologies of Sarasota, Florida (known as “Siemens Water Technologies” at the time of the project). Key factors in the selection of this product for the application were:

- ▶ **Non-hazardous.** The non-hazardous nature of the solution allowed it to be applied upstream to control the incoming gravity line in addition to the wet well.
- ▶ **Rapid dissolution.** The solution rapidly dissolves in wastewater, providing an almost instantaneous effect. This allowed the dosing to be very tightly controlled and turned completely off overnight when the wet well was closed and the scrubber could be used. Effective control was achieved with a dosing location just minutes upstream of the control point.
- ▶ **pH Range.** The solution can elevate the pH of wastewater to 9 or greater, providing a shift of over 99.9% of dissolved sulfide to the non-volatile HS<sup>-</sup> ion.
- ▶ **Controllability.** With its wide pH range, the solution could be adjusted to the pH needed using dose-to-demand technology.

- ▶ **Struvite.** The solution did not add magnesium – a key component of struvite - to the wastewater system and therefore could not contribute to struvite formation at the treatment facility.

As a major stakeholder in the success of the odor control measures, the adjacent manufacturing facility agreed to allow the City to establish a dosing location on their property. The dosing system provided by the vendor required a flat, level area of roughly 5m x 5m, 480-volt three-phase power, a water supply, and access to a sewer manhole. The manufacturing facility supplied a suitable area adjacent to a manhole. The City supplied a temporary generator and a temporary hydrant connection for water.



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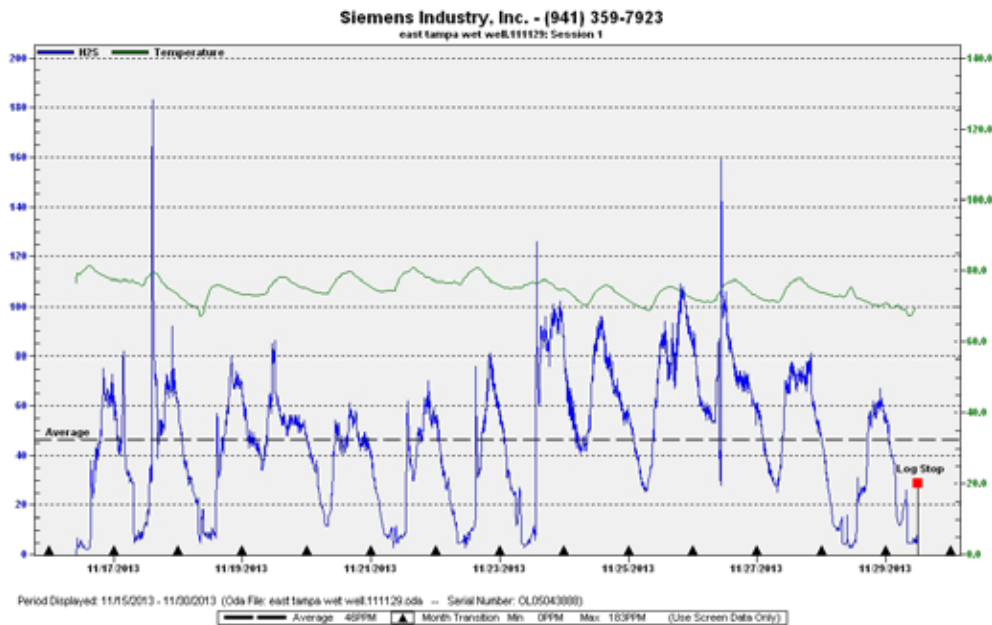


## Project Highlight: Quick-Dissolving Alkaline Odor Control (cont.)

By Vaughan Harshman, P.E. - Evoqua Water Technologies

Rehabilitation work and dosing of the alkaline solution began on October 18, 2011 and continued through the end of December. A dose-to-demand controller enabled feed to primarily occur during the Contractor's working hours between 6 a.m. and 6 p.m. with no feed or only a small maintenance dose overnight. The dose rate was adjusted periodically throughout the rehabilitation period and averaged 700 gallons per day over the project. This represents a savings of 50 percent vs the feed rate of 1,400 gallons per day if conventional single dose rate technology had been utilized.

Periodic monitoring for hydrogen sulfide was performed throughout the project at the wet well. During workdays dosing was increased to maintain less than 10 ppm in the wet well. Dosing was reduced overnight and on weekends when the scrubber was in service. Data from late November shows the effect of reduced dosing on a regular weekend (Nov. 19-20) and Thanksgiving weekend (Nov. 24-27):



In January of 2014 the City replaced the chemical mist tower system with a biotrickling filter. The mist tower had reached its useful life expectancy and the technology change allowed the City to receive new equipment with a turn-key service program for a lower cost than the cost of operating the mist tower system. Site constraints dictated that the biotrickling filter would be installed in the space occupied by the mist towers. Therefore, there would be

a period of approximately four weeks with odor control interruption while the mist towers and appurtenances were demolished and removed and the biotrickling filter installed. Based on the 2011 success, the City elected to perform the same alkaline solution dosing for the 2014 project.



The temporary dosing was initiated again in January of 2014. The main difference between the 2011 and 2014 events was that in 2011 ventilation was interrupted on a daily basis for several hours while in 2014 ventilation was completely interrupted for a period of four weeks. As in 2011, dosing was adjusted to feed more during the daytime hours than at night, but since there was no

ventilation at all a net increase of dosing was required resulting in a dose rate of 1,200 gallons per day.

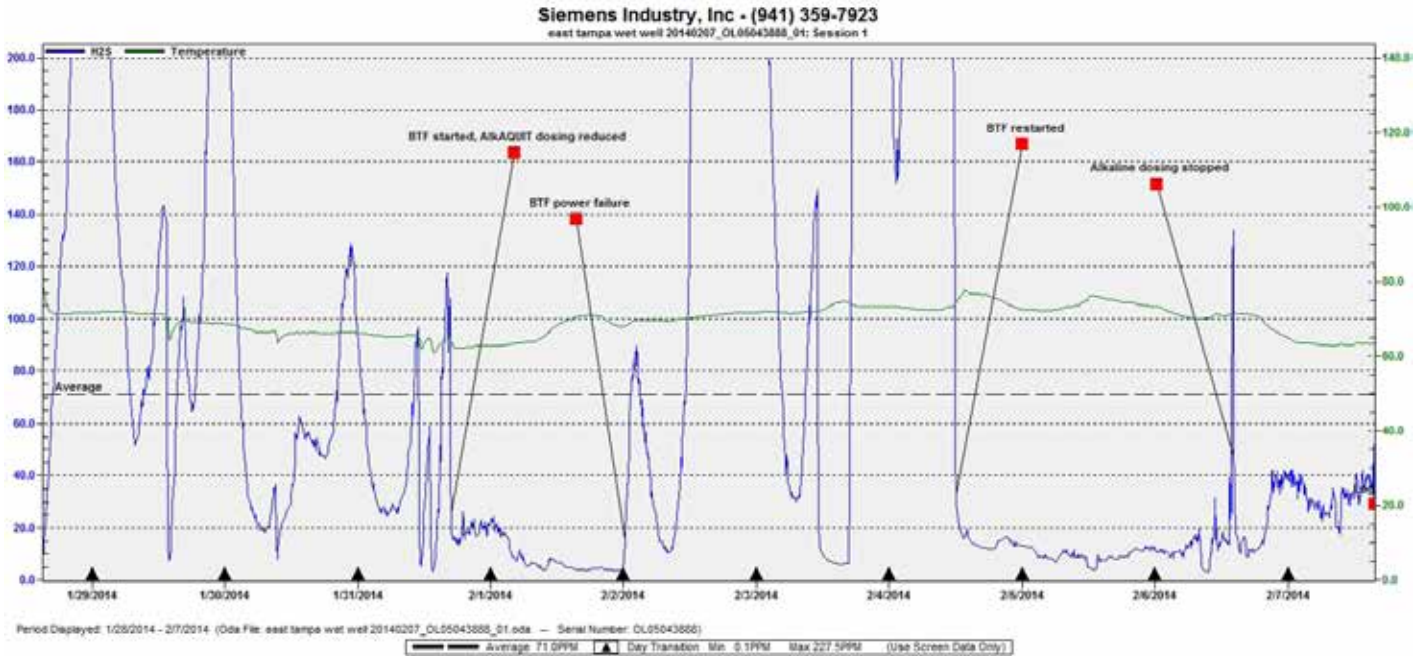
The new biotrickling filter was started on January 31, suffered a power interruption at midnight on February 2, and was restarted on February 4. Alkaline solution dosing was reduced on January 31 and halted on February 6. Effects of these changes in the system are apparent in the hydrogen sulfide data from this period. The hydrogen sulfide level dropped significantly when ventilation started on January 31, rose

sharply when the ventilation power was interrupted on February 2, dropped sharply again when power was restored on February 4, and increased on February 6 when alkaline dosing was halted. These changes can be observed on the graph on the next page.

The most important conclusion from this work is that the temporary odor control measures employed by

## Project Highlight: Quick-Dissolving Alkaline Odor Control (cont.)

By Vaughan Harshman, P.E. - Evoqua Water Technologies



the City of Tampa at East Tampa Pump Station were a success. The City did not receive any public odor complaints during the 2011 rehabilitation nor 2014 odor control replacement projects. Other important conclusions were as follows:

- ▶ Quick-dissolving alkaline solution is a viable technology for wastewater hydrogen sulfide and odor control and is particularly advantageous where hydraulic conditions require treatment with short detention time of less than 30 minutes.
- ▶ Dose-to-demand technology and control strategy allows odor control to be applied when needed and at the dose rate needed, reducing over-feed and resulting in cost savings.
- ▶ Alkaline dosing is not cost-competitive as a permanent solution vs. vapor-phase technologies for East Tampa Pump Station but may be viable for other odor control applications in the City.
- ▶ The City will strongly consider the quick-dissolving alkaline solution for future temporary and permanent odor control needs.

This article is based on a technical paper presented at the WEF 2014 Odors and Air Quality Specialty Conference.

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*We are currently looking to fill the Content/Newsletter Chair position and seeking additional At-Large Members.*



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## ***Senate Bill Study 536 and Impacts to the Reuse Program***

***by Mark Hammond, P.E., Resources Management Division Director,  
Southwest Florida Water Management District***

### ***Abstract***

In accordance with Senate Bill 536, FDEP is conducting a comprehensive study of the beneficial reuse of reclaimed water, stormwater, and excess surface water with support from the five Water Management Districts. FDEP conducted five public meetings and issued an extensive survey to identify and gather input from stakeholders, including FWEA. The Department formed five work teams to focus on the major project tasks: reclaimed water, stormwater, excess surface water, storage – reservoirs, and storage – aquifer storage & recovery and dispersed water management.

The work teams are presently assembling draft report sections with which to solicit additional input and information to assess the feasibility, benefits, and costs for beneficial water use and reuse. FDEP is particularly interested in identifying impediments to expanded use and reuse, methods for mitigating or eliminating impediments, providing added incentives for expanded use, and understanding methods for increasing water storage. The final draft report must be compiled by October 1, 2015 with submittal to the Legislature no later than December 1, 2015. This presentation will discuss the purpose, the status and the schedule of this important study.

Senate Bill 536 details and working documents are available for review at the FDEP Study website:  
<http://www.dep.state.fl.us/water/reuse/study.htm>

Please submit any questions or comments or requests for information to the Study email address:  
[sb536study@dep.state.fl.us](mailto:sb536study@dep.state.fl.us)

### ***Mark Hammond, P.E.***

Mr. Hammond began his career at the District in 1987 and has served the district as director of the Resource Projects Department and manager of both the SWIM and Conservation Projects sections. As director of the Resource Management Division, he is responsible for overseeing the bureaus that plan, develop, and implement District water resource management initiatives concerning water supply, flood protection, natural systems, and water quality. The initiatives include water supply planning and development of alternative water supplies, such as conservation, reuse, and aquifer storage and recovery, as well as the implementation of the District's springs and Ridge lakes restoration initiatives and the watershed management, minimum flows and levels, Facilitating Agricultural Resource Management Systems (FARMS), and Surface Water Improvement and Management (SWIM) programs.

### **FWEA MANASOTA CHAPTER LUNCHEON MEETING**

**Sarasota County Operations Center (BOB Building)  
Conference Room 1**

1001 Sarasota Center Blvd., Sarasota, FL 34240  
Registration - 11:30 • Lunch and Program - 12:15

**Menu:** Market salad (mixed greens, fresh veggies with a vinaigrette dressing on the side), chicken piccata, rum-glazed pork, steam rice, sauteed green beans, cookie platter.

***Please register by Friday, March 6th***

***Pre-registered Members: \$15 • Pre-registered Non-members: \$20 • Walk-in: \$25***

You can register online at [www.fwea.org](http://www.fwea.org) or register by phone, fax, or e-mail to Linda Maudlin  
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***The Manasota Chapter is in search of Project Spotlight articles for future newsletter editions. Chapter sponsors are encouraged to submit an article highlighting a local project. Please contact Laura Baumberger at [lbaumberger@carollo.com](mailto:lbaumberger@carollo.com) or 941-371-9832 for more information.***