

FWEA Manasota Chapter

Vol 10 - May 2012

Message from the Steering Committee

*By Kristiana Dragash, Greeley and Hansen,
Chair of FWEA Manasota Chapter*

The past few months have been a fantastic start of the 2012 calendar year and end to the FWEA 2011-2012 fiscal year!

The March luncheon featured two top notch speakers from our neighboring West Coast chapter, Dave Hagan of Greeley and Hansen and Tim Ware of City of Tampa, who presented on the *High Purity Oxygen Evaluation Study at the Howard F. Curren AWTP*. Some special guests included the principal, Dr. Rachel Shelley, teacher and Science Technology Engineering and Math (STEM) advisor, Rosemary Schmidt, and three future engineers from Booker



High School. Thanks to the generous support from our sponsors in the 2011-2012 fiscal year, the Manasota Chapter was able to contribute funds to the first year of the Booker High School STEM program. Sponsoring the group to attend the March luncheon provided the students with an opportunity to meet professionals in the field and to experience their first lecture on a topic near and dear to all of us, wastewater treatment!

In days following the March luncheon, FWEA leaders from all over Florida gathered in Orlando to coordinate and share ideas and information from their respective chapters and committees. The room was filled with energy and enthusiasm from seasoned professionals and new engineers, all focused on better serving the members of the organization and advancing FWEA.



*Left to Right: Raynetta Marshall,
Rebecca McLarty, Karen Wallace,
Kristiana Dragash, Nita Naik*

In other extremely exciting news, on April 18th, the new FWEA website went live! It has a new, fresh look and is more user-friendly than ever. Visit it today! www.fwea.org



On Thursday, April 19th, FWEA Manasota members, friends, and family gathered in the breezeway of the Polo Grill to celebrate the 2nd birthday of our Chapter. It was a wonderful evening with complimentary beverages and hors d'oeuvres for members to show our appreciation for their dedication to the professional and loyalty to the organization. This is an exciting annual event, so if you missed it then we hope to see you next year to celebrate birthday number 3!

Continued on page 2...

Calendar of Upcoming Events

MAY

1-2 Florida Water Resources Conference, Orlando, FL

17 Joint ASCE-EWRI and FWEA Luncheon, Sarasota, FL

19 ASCE Golf Tournament, Bradenton, FL

JUNE

28 FWEA/FBC Benchmarking Workshop, Palm Bay, FL

May

| 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 | | |

June

| SUN | MON | TUE | WED | THU | FRI | SAT |
|-----|-----|-----|-----|-----|-----|-----|
| | | | | | 1 | 2 |
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| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |

Continued...

Mark your calendars for the next luncheon on **May 17th**. This is an event that you do not want to miss. It is our first ever coordination with ASCE Suncoast's new branch Environmental & Water Resources Institute (EWRI) and will feature two incredible speakers: Blake Guillory, the new Executive Director of SWFWMD, and Theresa Connor, the Sarasota County Director of Environmental Utilities. This luncheon will be held at Dutch Heritage and will be an extended lunch, offering PDHs and CEUs. The first speaker will begin promptly at 11:45 a.m. Please arrive early so you have time to visit the delicious buffet! Registration begins at **11:15 a.m.**

Don't forget to renew your advertisement to the newsletter for the 2012-2013 fiscal year, which begins on May 1st! Please send your checks to the treasurer, **Todd Bosso, at Brown and Caldwell, 5405 Cypress Center Drive, Suite 250, Tampa, FL 33609.** We sincerely appreciate your support!

FWEA Manasota Chapter Steering Committee Officers

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*If you are interested in participating as an officer
on the Steering Committee, please contact us.*

*We are currently seeking a Vice-Chair
and additional members at large.*

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Consultant's Corner: Remote Facility Condition Inspections and Integration into the City of St. Petersburg's Asset Management Program

By Laura Baumberger, P.E. - Carollo Engineers; Robert Labrie, City of St. Petersburg

The City of St. Petersburg (City) initiated an asset management program in 2008 to assist in documenting asset condition, criticality, and risk; provide data and justification to develop repair and replacement (R&R) funding needs; and support knowledge transfer between employees. While all City departments are migrating to the same asset management software, the approach and schedule for developing asset management programs varies throughout the City. This project focused on City Water Resource Department (WRD) remote wastewater and stormwater facility sites including the City's 84 lift stations, four stormwater pump stations, and six alum chemical feed systems located at stormwater retention ponds. Rigorous condition inspections were performed at all facilities and included non-destructive testing using infrared thermography. After completion of the assessment process, inspection findings were loaded into the City's asset management software. The WRD is now using the asset management program developed during this project to prioritize R&R projects at the City's remote lift station and stormwater facilities.

INTRODUCTION

The City converted its work order, inventory, and maintenance management system to Oracle Work and Asset Management (WAM) in June 2008. Since that time, the WRD began integrating condition assessment information for its wastewater collection system gravity pipes and manholes into WAM in support of developing a comprehensive asset management program for the City's water, wastewater, and stormwater infrastructure. The City's next step was to develop a condition assessment program for its remote wastewater and stormwater facilities and then incorporate that information into WAM to assist in prioritizing R&R projects. This article discusses the methodology, techniques, and technologies used for the remote facility condition inspections; development of an approach for assigning criticality to WRD assets; calculation of asset risk scores; and subsequent integration of this data into the City's asset management program.

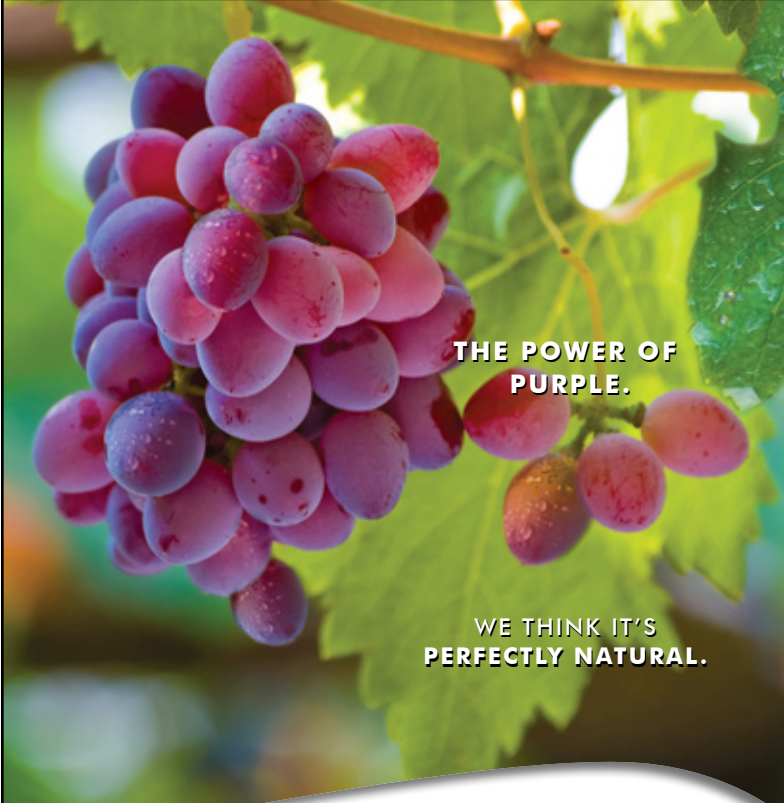
ASSET MANAGEMENT OVERVIEW

The overall goal of an asset management program is to optimize planning, operation and maintenance (O&M), and financial decisions for an organization's infrastructure. Asset management entails optimizing

O&M costs and capital expenditures for the lowest total cost at an acceptable level of risk.


One of the primary functions of an asset management program is to serve as a framework for making, documenting, and justifying near- and long-term decisions on asset renewal and replacement. Developing an asset management program balances the requirements for asset maintenance against the eventual need for rehabilitation or replacement. An asset management program provides the basis for prioritizing the R&R projects and also serves as a communication tool both internal and external to an organization.

Asset management typically relies on an evaluation of asset risk in order to prioritize expenditures for asset rehabilitation or replacement. The risk of failure of an asset is calculated as the product of that asset's criticality and vulnerability scores. Risk is a calculated numerical value and is a relative indicator of priority or need for



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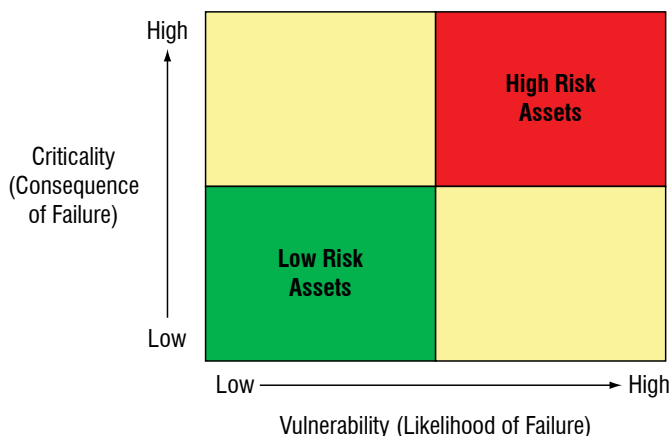
Consultant's Corner: Remote Facility Condition Inspections and Integration [cont.]

By Laura Baumberger, P.E. - Carollo Engineers; Robert Labrie, City of St. Petersburg

corrective or preventive actions. In a standard asset management program, the risk associated with each asset is calculated with the following equation:

$$\text{Risk} = \text{Vulnerability} \times \text{Criticality}$$

The vulnerability metric reflects the “likelihood of asset failure.” Vulnerability is primarily based on an asset’s physical condition and/or remaining economic service life. Criticality describes the “consequence of failure.” Criticality rankings are established to reflect the impact on level of service goals when an asset fails to meet its intended purpose. Criticality is often addressed in terms of environmental, social, or financial consequences. The criticality and vulnerability scoring criteria used by the City are discussed later in this article. The schematic below illustrates the relationship between criticality, vulnerability, and risk.



VULNERABILITY ASSESSMENT

Asset failure can occur as the result of many factors, including inefficiency and obsolescence, as well as physical condition. This effort used a detailed condition assessment process to combine those factors into a single score to represent asset vulnerability. Separate condition assessment templates with specific criteria relevant to 18 different asset types were developed to provide a detailed method for inspecting each type of asset. This rigorous inspection method was designed to be thorough, eliminate bias, and improve repeatability and consistency. Although the inspections completed during this project were solely for wastewater lift stations and stormwater stations, the inspection templates for equipment common to other facilities will be used during future inspections at the City’s water and wastewater treatment facilities.

A condition assessment was performed at each remote facility by a team that included both engineers and O&M staff. The inspection also was used as a training opportunity for City staff so they could continue to maintain the asset management program in the future. The condition assessment followed the detailed inspection template specific to each asset type. Pump shut-off head tests were completed at all lift stations as a component of the functionality testing of the pump assets. All valves were exercised to ensure operability. Operators started all equipment to check for noise, visually evident vibration, and abnormal heat. In addition to observed heat, infrared photographs of all electrical and electromechanical assets were taken in order to detect excessive operating temperatures.

Infrared thermography is a non-destructive testing method. Although infrared thermography has been used in other industries for many years, this non-destructive testing technique is relatively new to the water and wastewater industry. Infrared thermography relies on temperature sensors to monitor thermal gradients. Infrared photographs can identify operating temperatures, pipe leaks, liquid levels in metal tanks, as well as damaged insulation. This technique was used in the City’s condition assessments at lift stations to identify “hot spots” in operating temperatures of control panels, switchgears, generators, pump motors, and other electrical and electromechanical equipment. Figure 1 below shows a group of pump motors and range of operating temperatures illustrated by an infrared photograph.

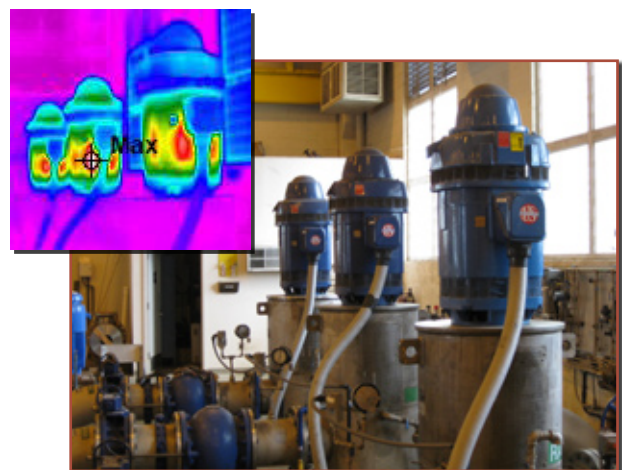


Figure 1. Pump motors and operating temperature gradient

Consultant's Corner: Remote Facility Condition Inspections and Integration [cont.]

By Laura Baumberger, P.E. - Carollo Engineers; Robert Labrie, City of St. Petersburg

Condition inspection data from the template for each asset were entered into WAM. Calculations within WAM converted inspection results into industry standard condition scores adapted from the International Infrastructure Management Manual (IIMM). The IIMM classifies asset condition into one of five rankings: 1 - Very Good, 2 - Good, 3 - Fair, 4 - Poor, and 5 - Very Poor. Combining these scoring systems allowed the City to benefit from industry standard gradations as well as a detailed defect rating system customized to the City's assets.

The City's resulting vulnerability scores for lift station assets are illustrated in Figure 2. Although the City's lift station assets are primarily in very good or good condition (condition scores of 1 and 2, respectively), approximately ten percent of their assets are classified as being in poor or very poor condition. The City will be taking appropriate steps to rehabilitate or replace these assets.

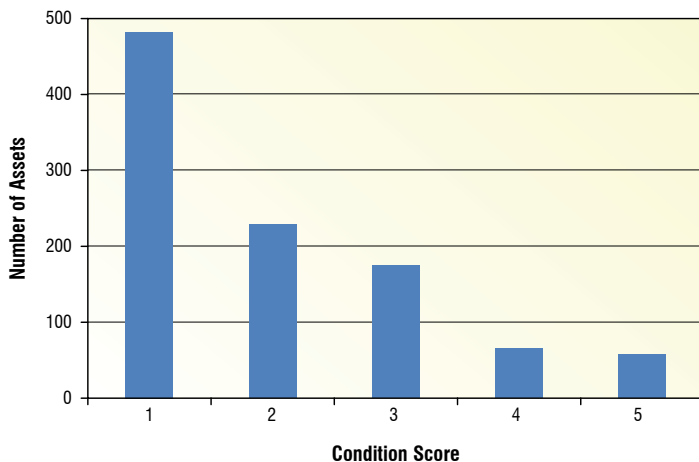


Figure 2. City of St. Petersburg Lift Station Asset Vulnerability (Condition) Scores

CRITICALITY ASSESSMENT

Understanding the importance of criticality in overall risk score calculations, the City hosted a workshop with WRD staff at multiple levels to develop a scoring matrix for criticality. The WRD selected criticality categories based on typical industry standards and input from WRD staff to reflect relative importance to the agency. WRD selected five criticality categories including:

- ▶ Health and Safety for Public and Employees
- ▶ Financial Impact

- ▶ Impact on Environment or Regulatory Compliance
- ▶ Effect on Service and Customers
- ▶ Ability to Respond and Return Asset to Service

Scores and weighting factors were established for each of the five categories listed above. The scoring for each category ranged from 10 (severely critical) to 1 (not critical). Each category was assigned a weighting factor based on its relative importance. The majority of individual lift station assets are considered to have negligible to low criticality, with only six percent of assets having low to moderate criticality (scores of 5 to 6).

RISK ASSESSMENT

After completion of the criticality and condition assessment process, the inspection findings were loaded into the WAM Condition Assessment Module. An inspection report providing a listing of each inspection criteria (defect type), inspection results (defect severity), and scores was created in WAM. The report included each asset's criticality rating and overall risk score.

The assets were sorted based on their risk scores to provide a prioritized list for further evaluation and development into R&R projects. Assets with the highest risk will be addressed first by the City's planning, engineering, and O&M staff.

NEXT STEPS

The City plans to use the asset risk scores developed during this project to prioritize R&R projects at the City's wastewater lift stations and stormwater stations. Operations and maintenance staff will also monitor performance and condition of high-risk assets and implement aggressive preventative maintenance until R&R projects can be completed.

The next major step in the City's asset management program is to perform condition and criticality assessments at its water and wastewater treatment facilities. The City plans to initiate these assessments during 2013.

An extended version of this article will be published in an upcoming issue of the Florida Water Resources Journal.

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Sarasota County WQ: Numeric Nutrient Criteria (NNC) and Low Impact Development (LID) Manual

by Theresa Connor, P.E. - Executive Director, Environmental Services for Sarasota County

Abstract

To give an update on the status of U.S. EPA's NNC initiative and County's LID manual, and based on recent case studies performed, Ms. Connor will share how County is implementing Water Quality strategies as part of existing and future environmental regulations and policies.

Theresa Connor

Ms. Connor is the Executive Director of Environmental Services for Sarasota County, providing an oversight for the Integrated Water (Stormwater and Utilities) and Solid Waste Divisions. Her professional experience includes extensive work with stormwater, potable water, wastewater and natural systems. She holds masters degrees in Environmental Engineering and Business Administration. Theresa is the current president of the Florida Stormwater Association (FSA) and in her free time enjoys kayaking in the beautiful waters of Sarasota County.

Reorganized District: Water Resources Permitting and Cooperative Funding

by Blake Guillory, P.E., Executive Director, Southwest Florida Water Management District

Abstract

To provide an update on environmental policies/regulations as they relate to water resources permitting and cooperative funding opportunities for eligible activities, during tight economical conditions. A new triage process for assessing permit applications has helped expedite approval of small ERP permits within 48 hours of the submittal. The District has also been able to retain its successful Cooperative Funding program to partner with local governments and other water users on water resource projects.

Blake C. Guillory

Blake Guillory has 25 years of varied water resources experience throughout Florida and the Southeast United States. Prior to joining the District he served as vice president and the Florida Gulf Coast area manager for Brown and Caldwell, a national consulting firm providing water supply, wastewater, stormwater,

infrastructure, business consulting and environmental sciences expertise to public and private clients. Prior to this, he was vice president and Southeast water resources division manager for PBS&J, now Atkins North America.

Guillory holds a bachelor's degree in petroleum engineering from Texas A&M University and a master's degree in civil engineering, and a master's degree in business administration from the University of South Florida. He is a professional engineer and a diplomate of water resources engineering.

Guillory is a past president of the Florida Stormwater Association and past Chairman of the Florida Floodplain Managers Association. He is also a member of the Florida Engineering Society, Florida Water Environment Association, American Water Works Association, American Water Resources Association and the American Society of Civil Engineers.

TROYER'S DUTCH HERITAGE RESTAURANT

3713 Bahia Vista Street, Sarasota, FL 34232
 Registration - 11:15 • Welcome/Buffer - 11:30
 Presentation - 11:45 (*will begin promptly*) • Q&A - 1:00

Cost: \$15

No credit card payments day of event – check (made payable to FWEA) or cash only please

Pre-registration deadline: Friday, May 11

REGISTRATION FORM

Registration can be made by mail, phone, fax, or e-mail, with payment mailed in advance or collected at the door.

| Name | Company/Affiliation | Phone |
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