# Ross Valley Sanitation District No. 1
# San Rafael, CA

**I.   Presenter:** Greg Norby, General Manager

**II.   Treatment Plant Characteristics:**

- Wastewater Collections
- 55,000 customers served
- 38 employees

**III.   Innovation:**

## A. Description

Ross Valley Sanitary District has over 200 miles of gravity sewer system, 9 miles of force-mains, and 19 pump stations. Much of this infrastructure is 50 to 75 years old and is past its service life. The new National Pollution Discharge Elimination System (NPDES) and Regional Water Quality control Board (RWQCB) requirements for wastewater conveyance systems have dramatically changed the acceptable levels of performance for the system, which has also been experiencing high rates of sanitary sewer overflows, due to the degraded infrastructure condition. Traditional capital improvements plan approaches are insufficient for dealing with allocation of limited capital funding sources in the face of potentially overwhelming needs for repair, replacement, and rehabilitation. To address the basic challenge of how to systematically allocate limited funds to address the failing infrastructure, Ross Valley Sanitary District has applied a combination of risk-based methods (minimizing the likelihood and consequences of SSO events) and Level of Service objectives – what our customers and the public at large consider desirable for their wastewater service. The risk/LOS model was developed in a combined Access database and GIS platform, and was used to develop a technically rigorous, cost-effective, and consistent basis for an initial five years. $75M capital improvements plan that will address the most critical system needs. The model is also an excellent communication tool for elected officials and the general public, as it visually demonstrates the application of the underlying, relatively complex methods in a simple, visual form.

## B. Type of Innovations

- Increased use of Information Technology
- Modification of workflow processes or classifications
- New approach to documentation, technical training, staff development, or knowledge management
- Optimization of existing resources

## C. Motivation for Innovation

The District had accumulated, through a series of plans going back to 2006, and driven primarily by the much tighter NPDES requirements along with clear signs of increasingly critical failures of existing infrastructure, a potentially overwhelming list of projects and related costs which were not feasible under funding, project execution capacity, and public support constraints. In March 2013, the District was issued a Cease and Desist Order (CDO) from the San Francisco Bay Area RWQCB, which mandated immediate actions to begin implementing the backlog of capital projects and out in place adequate financial resources to fund the capital program. The Risk/LOS-based approach, including the modeling tools, was developed into the on-going CDO compliance requirements.

## D. Barriers/Challenges

We are still working to implement the model, which requires continued condition assessment (CCTV for gravity sewers) and building up the remaining CMMS data sets. Getting engineering and Operation and Maintenance staff to embrace the Risk/LOS-based approach to capital projects and rehabilitation work is also an on-going process.

## E. Benefits

The District now has a standard, repeatable, defendable process for selecting and prioritizing its capital program projects. The GIS-based tools also provide an effective means for communicating with decision-makers such as electe Board officials, and the rate-payers. As the District continues to complete its remaining condition assessment work and complete each year's capital projects, the Risk/LOS-based tools will be iteratively applied to continually refine and update a rolling five-year capital program in a flexible and efficient manner.

### F. Effect on Staff Training

The use of risk-minimizing and LOS criteria has required greater IT systems use and training, and getting staff accustomed to less "firefighting" and more increased/planned actions.

### G. Lessons Learned

The process is relatively new and will be on-going for the next several years. Lessons learned include how the certain Level of Service criteria affected the model results (for example, proximity to streams, sewers in major roadways), and how differently various stakeholders (operations staff, Board members, customers) view what is important for Level of Service (e.g., cost/low rates, rapid responses to SSO's impacts to streams from sewer spills, disruption of major traffic areas).

## IV.    Information Sharing:

- Willing to host on-site tour

- Willing to visit another regional water/wastewater facility to provide presentation on innovation

- Willing for a staff member from another utility to conduct a follow-up visit to learn more about innovation

- Interested in on-line forum to discuss water/recycling/wastewater treatment issues