Risk Analysis of District Assets

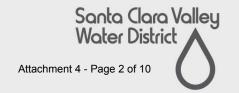
SCVWD Board of Directors
June 13, 2017



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Overview

- Background
- Risk Calculation
- ▶ Risk Management (Water Utility Assets)
- Next Steps



Background

Board Policy

- ► EL-6. The BAOs shall protect and adequately maintain corporate assets.
 - ► 6.4. Maintain an Asset Management Program
- Board Policy Planning Calendar:
 - Update on risk analysis of District assets

Risk Calculation

Business Risk Exposure (BRE) =

Probability of Failure (PoF) x Consequence of Failure (CoF)

- ▶ Index number ranging from 0 to 150 and used to:
 - ▶ Relatively rank assets by risk set priorities
 - Categorize assets as critical, moderate or low risk
 - Identify appropriate risk management strategy depending on risk category

Risk Calculation - Probability of Failure

- Measure of asset condition
- ▶ 1-5 scale (1 = new, 5 = failed)
- Scores vary over time







Risk Calculation - Consequence of Failure

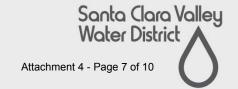
	Impact	None	Very Low	Low	Medium	High	Critical
	CoF Score->	0	1	2	3	4	5
Social (Score 0 to 10)	Service Delivery	impact	reduction in service	result in long term (> 30 days), local reduction in service	(<30 days), wide spread <u>reduction</u> in	to result in a long term (> 30 days), localized total loss in service	Failure of asset likely to result in a long term (> 30 days), wide spread total loss in service delivery
	Impact to Community Property		results in minor, localized damage to	results in minor, wide spread damage to	Failure of asset results in major, localized damage to community property	Failure of asset results in major, wide spread damage to community property	in catastrophic, wide
Environmental (Score 0 to 10)	Environmental Impacts	impact	environmental damage	(short term) repairable damage and expect recovery within one year	to cause medium-term repairable damage and expect recovery within 3 years	to cause long-term repairable damage and recovery requires more than 5 years and may significantly compromise habitat	Failure of the asset likely to cause environmental damage with lasting consequences (permanent change to habitat) and permanent damage to habitat
	Life Safety	Impact	could result in minor	result in significant			Failure of asset could result in death
Economic (Score 0 to 10)	Financial Impact	impact		in \$10,000 - \$50,000 rehab/replacement/ penalty cost	Failure of asset results in \$50,000 - \$100,000 rehab/replacement/ penalty cost	•	
	Impact to Reputation	impact	to cause minor impact	Failure of asset likely to cause minor public	Failure of asset likely to get attention of		Failure of asset likely to bring criminal pharges to District

Risk Calculation - Example

- ▶ PoF = 4
 - ▶ Major Renewal Required
- ► CoF = 23
 - ► Service Delivery = 5
 - ► Community Property = 5
 - ► Environmental Impacts = 3
 - ► Public Safety = 1
 - ► Financial Impact = 5
 - ► Impact to Reputation = 4
- ► BRE = 92

Pacheco Conduit Bifurcation 84-inch Butterfly Valve



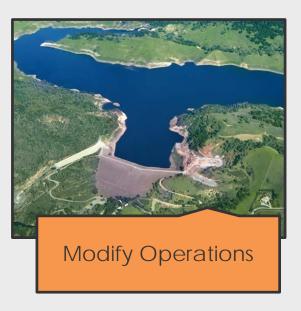


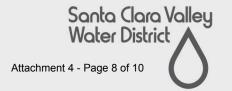
Water Utility Risk Management

Critical Risk (BRE 61-150)



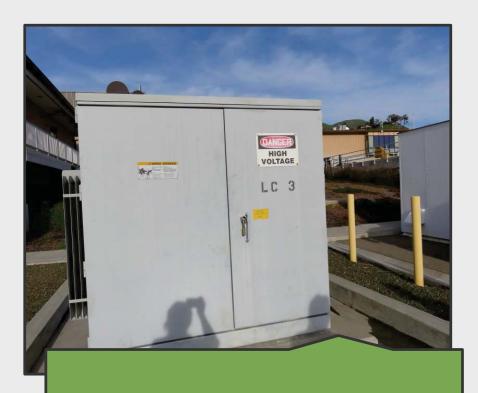






Water Utility Risk Management

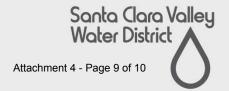
Moderate Risk (51-60)



Increase preventive maintenance



More frequent condition monitoring



Next Steps

- Develop risk maps
- Validate existing and develop risk scores for assets that have not yet been assessed
- Update BRE score thresholds for critical, moderate, and low risk categories

