Condition Assessment of Pipes on Bridges and Crossings

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PWB Service Level Indicator Goal

- Must meet at least 80% of established standards for inspection, testing, repair and replacement of assets that are identified as medium, high or extreme risk.

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Risk Ratings -

Likelihood	Consequences				
	1 Very low	2 Low	3 Moderate	4 High	5 Very high
Very low (1)	VL	VL	L	M	M
Low (2)	VL	VL	M	M	H
Moderate (3)	L	L	H	H	E
High (4)	L	M	H	E	E
Very high (5)	L	M	H	E	E

E = extreme
H = high
M = medium
L = low
VL = very low

Large Valves
Pump Stations
Buried Pipes
Pipes on Bridges
System Pressure Regulators
Tank Sites

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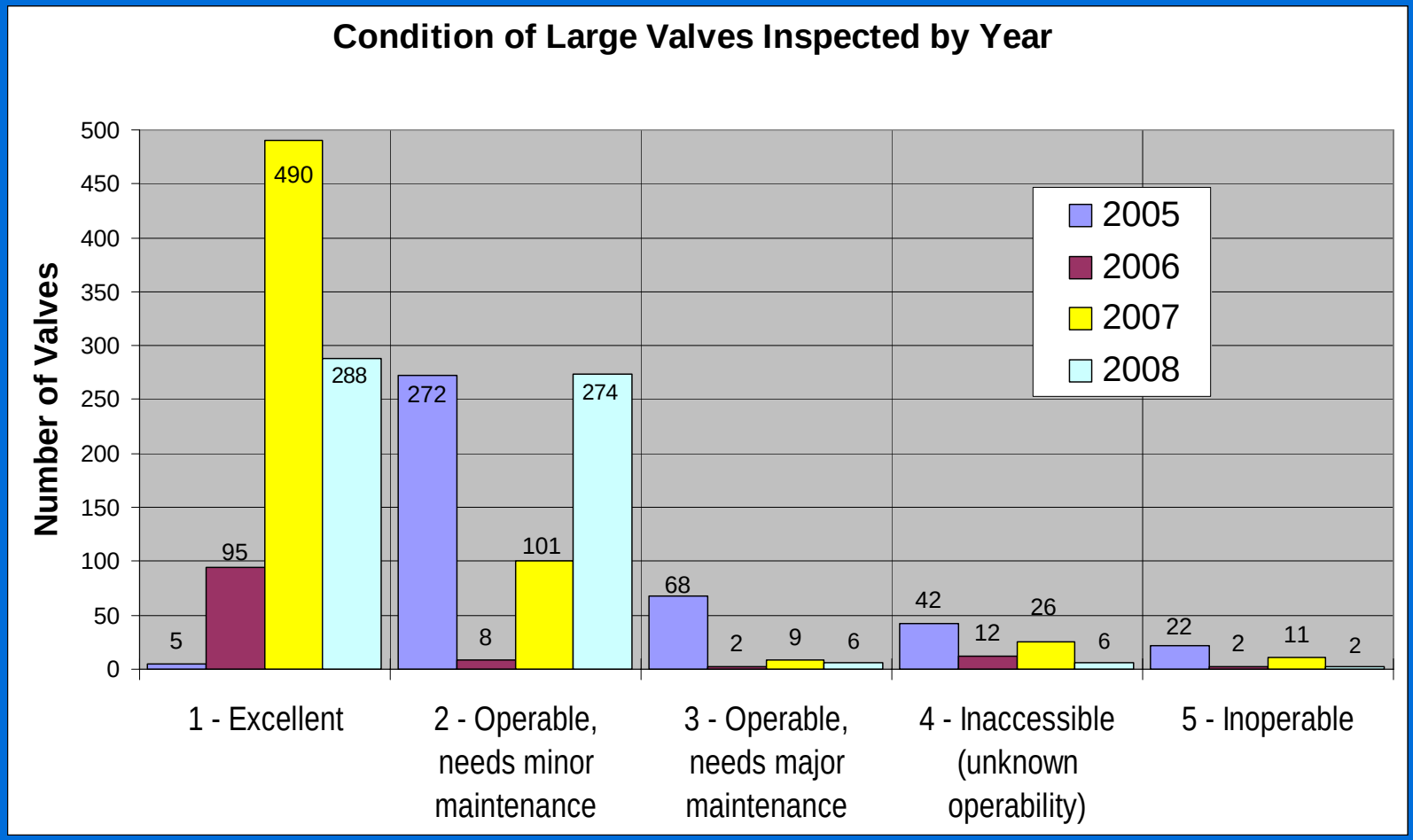
Large Valve Condition Assessment



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Assets included in CA – System Pressure Regulators

– PoF related to time between rebuilds.

- CoF related to use

Stations inspected and rebuilt depending on risk rating

Pump Stations and Tanks Condition Assessment

- 2007 system wide inspection program

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Business Case - Pump Stations and Tanks CIP Improvements from CA

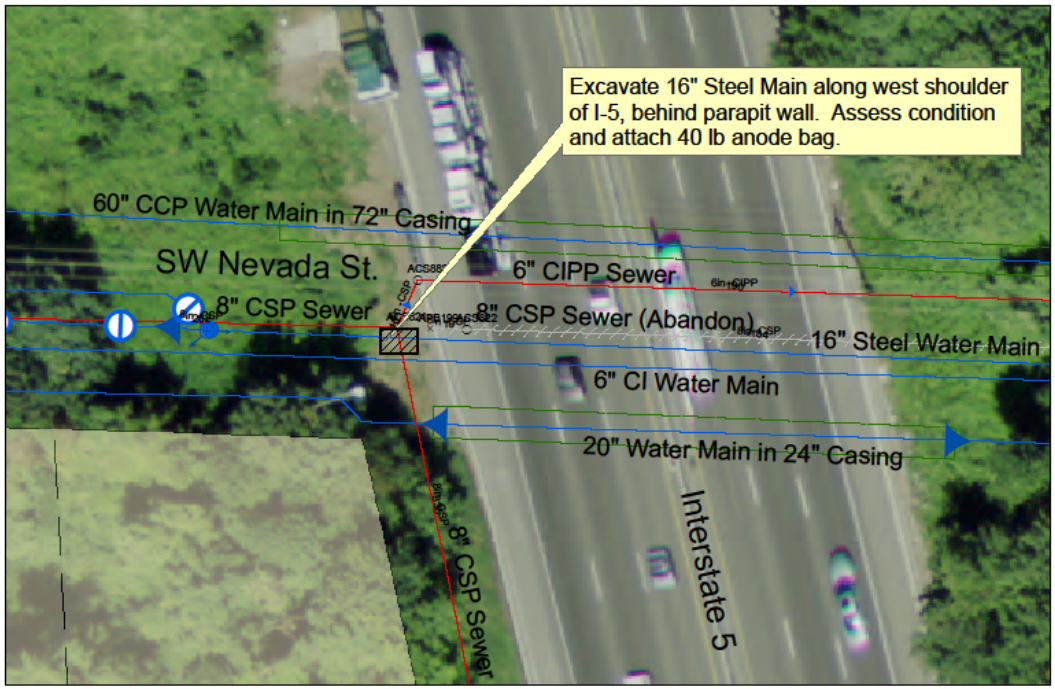
Fulton Pump Station

- Poor Pipe Condition
- Adjacent 60” Pipe

- Risk Rating is “Extreme”

Condition Assessment of Buried Pipes

- *Fulton Pump main under I-5*. Excavation on freeway shoulder during scheduled night closure.



16" Steel Main Condition Assessment at I-5 and SW Nevada St.

0 25 50 100 Feet

N

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Buried Pipes Cont.

- Pipe and coating in very good condition. Cathodic protection added. CLEM rating reduced from Extreme to High.

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CA of Pipes on Bridges and Crossing

- Initial list determined using the CLEM process.
- 25 crossings were rated as high or medium risk.

CA of Pipes on Bridges and River Crossings – Data Management

- GIS generated Facility ID Number
- Current Data – As built drawings, work orders, previous photos

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Inspection Process

- Identifying Access
  - Bridge ownership and land usage
- Visual Inspection
  - High powered photography
  - Testing

Inspection

Serious - Leaks, Pitting, Misalignments, Safety items

Non Serious – Graffiti, Landscaping, Coating Repair

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Analysis and Recommendations

- AM evaluates the data
- Action taken on extreme rated rating.

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Condition Assessment – Immediate Action

- O & M
  - Fixes

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Close up of Inspection Area

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Close Up - Defect

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Case Study – Grand Ave. Crossing of I-84 Freeway

- Prior to inspecting the crossing was rated as High risk on BRE. The pipe spans over 200 feet and crosses the I-84 freeway, railroad and commuter train tracks.

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Case Study – Grand Ave.

- 16” Steel Pipe misaligned causing a snaking effect.

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Case Study – Grand Ave.

Zoom view of Misalignment

Pipe Brace Sheered Off

Case Study – Grand Ave.

- After inspection the pipe rating was changed to “extreme”

Zoom view of dressing coupler

North Abutment support slippage

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Case Study – Grand Ave.

- Immediate Action Taken
  - Pipe is currently shut down
  - In house expert review
  - Contract Documents Produced
  - Pipe risk rating will drop to a “medium” rating.

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Condition Assessment - Next Steps

Finish condition assessment of Extreme, High and Medium Risk pipes on bridges and river crossings by summer 2010.

Link the condition assessment process with the asset management plans for the Water Bureau.

Use the data for capital improvement planning budget.

Continue condition assessments of other assets with high risk ratings.

Acknowledgements:

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