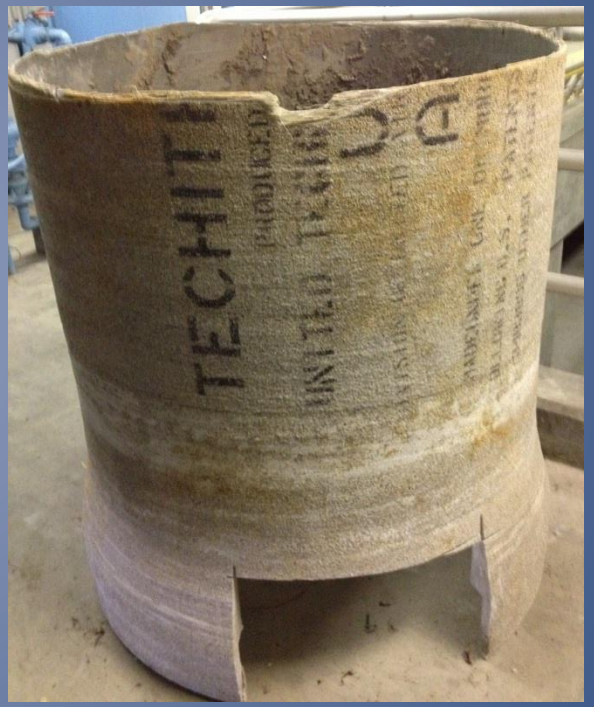
ROSS VALLEY INFRASTRUCTURE ASSET MANAGEMENT PLAN

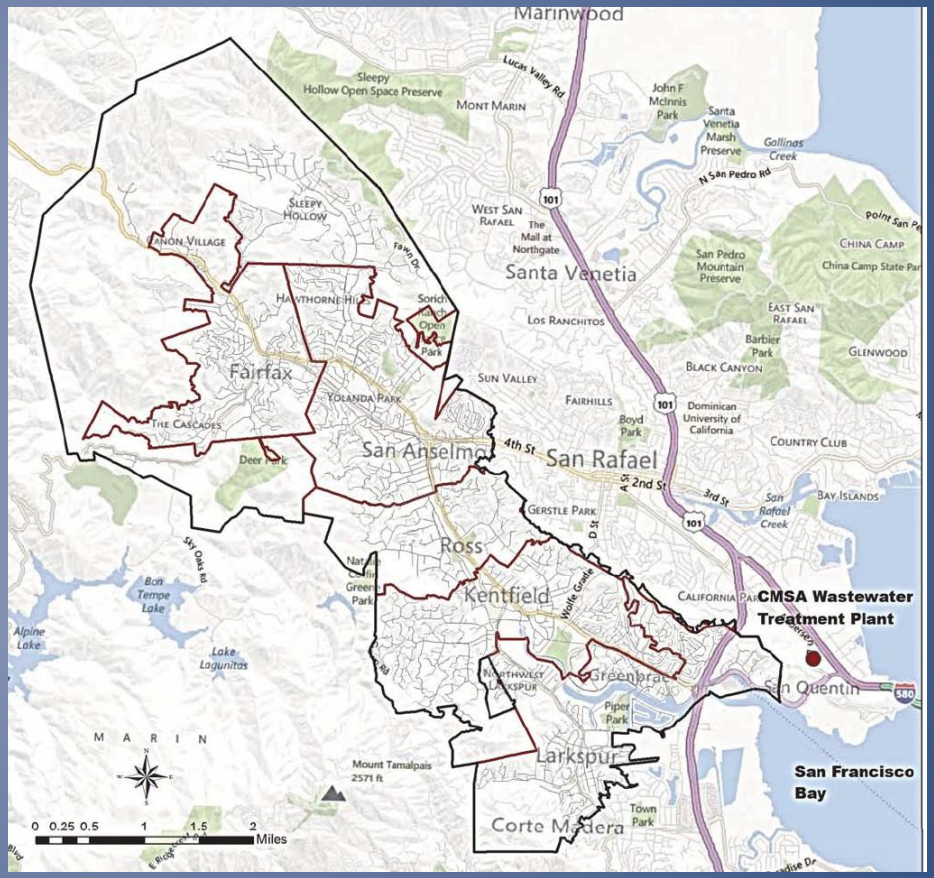
REDUCING THE RISK OF OVERFLOWS THROUGH STRATEGIC ASSET MANAGEMENT

North Bay Workshop on Wheels



ABOUT ROSS VALLEY SANITARY DISTRICT

- Established in 1899
- About 13 Square Miles
- Population of ~ 55,000
- 194 miles of gravity sewers
- 8.4 miles of force mains
- 19 pump and lift stations



THE CHALLENGE

- Aging infrastructure exceeding service life.
- More stringent NPDES requirements.
- Increasing rate, severity of SSO's.
- No consistent, technically sound process for prioritizing 200 miles of sewer lines.
- CCTV assessment results = information overload.
- Price tag keeps growing, public and elected officials not supportive of "fix it all… now!" approach.
- Last rate case rejected by Board in face of public opossition.

RECENT CHANGES IN O&M ENABLED A MORE STRATEGIC APPROACH TO ASSET REPLACEMENT PLANNING

- CCTV inspection initiated in 2009 is over 50% complete
- Zone Cleaning of the entire system completed in August 2013

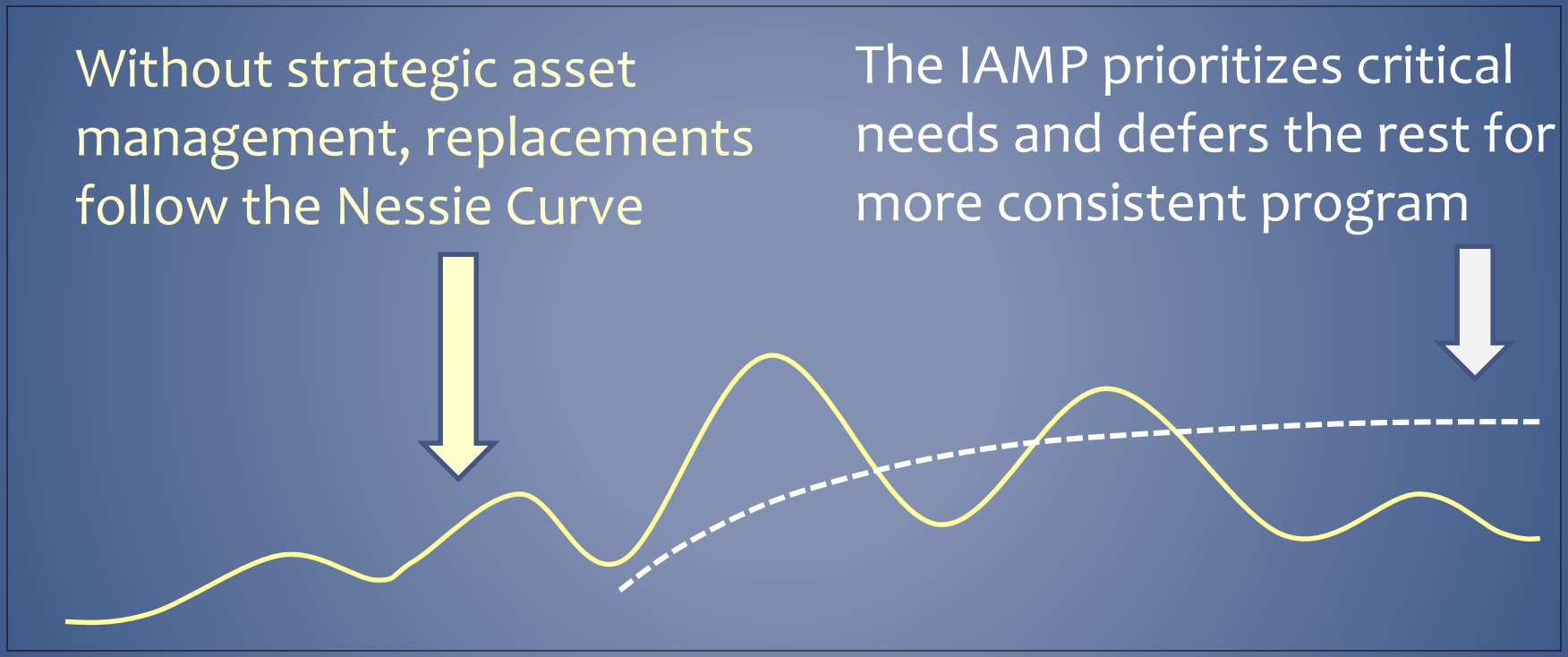
→ IMPROVED CONFIDENCE. Field data replaced assumptions about system condition that were largely speculative

→ COST EFFECTIVE SOLUTIONS. Repairs focus on bad pipes and maximize the service life of good pipes

THE DISTRICT'S IAMP LEVELS OUT REPLACEMENT NEEDS

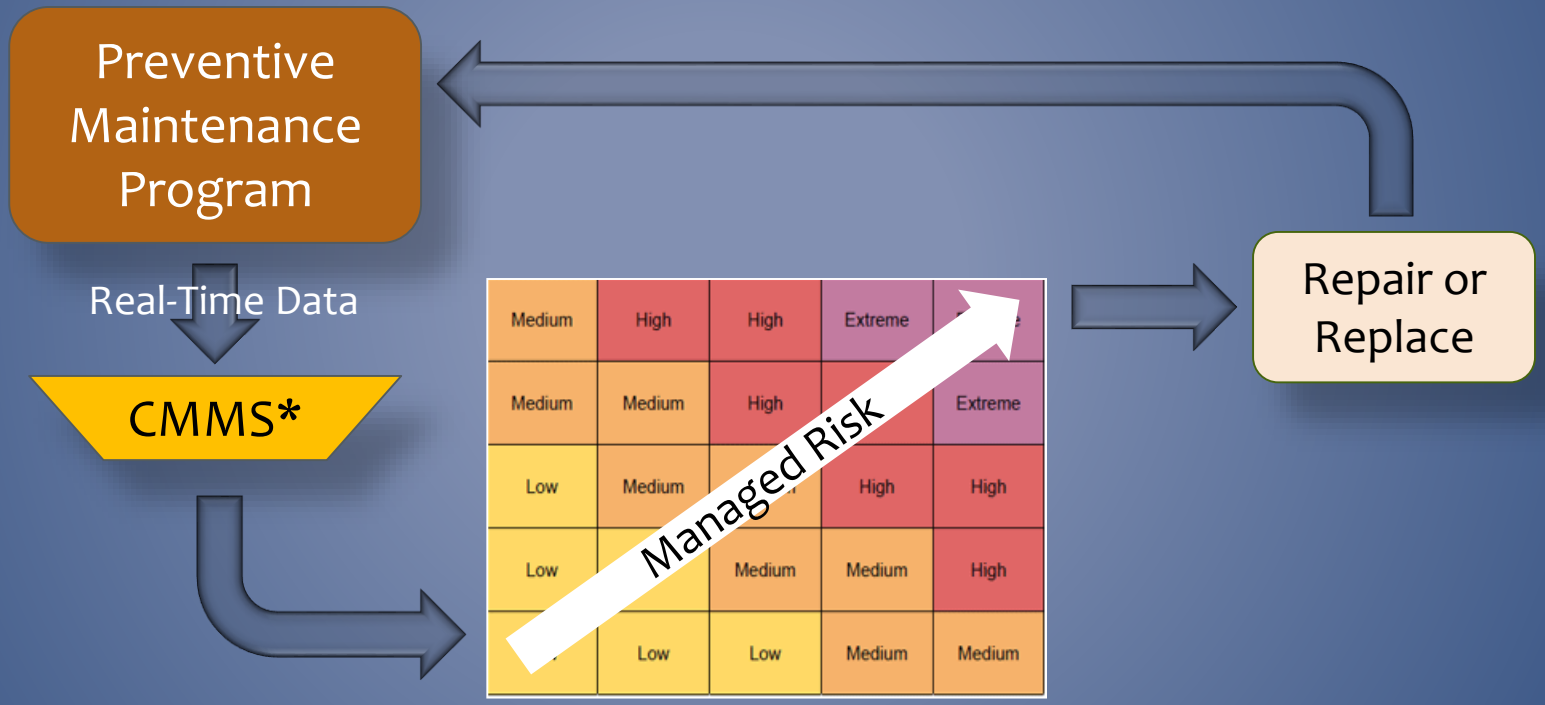
Without strategic asset management, replacements follow the Nessie Curve

The IAMP prioritizes critical needs and defers the rest for a more consistent program



Approximate pipeline replacement schedule based on original installation dates and 75-year service life

RISK REDUCTION IS GAINED THROUGH A CONTINUUM OF MAINTENANCE, DOCUMENTATION, AND REPAIR



* Computerized Maintenance Management System

BASIC COMPONENTS OF THE IAMP

- Level of Service Objectives
- Field Data – Lots of It
- Likelihood and Consequence of Failure Metrics and Scores
- Numerical Risk Model (SMARTool) for Pipelines
- Conventional Assessments for Pump Stations
- GIS to Analyze Results
- Prioritized CIP and Cash Flow

HOW THE IAMP RISK MANAGEMENT TOOL WORKS

Likelihood of Failure (from InfoNet CMMS)

- Material (Techite)
- Structural Condition
- O&M Condition
- Located in Bay Mud
- Located in Landslide Zone
- Capacity/SSOs
- Maintenance Needs

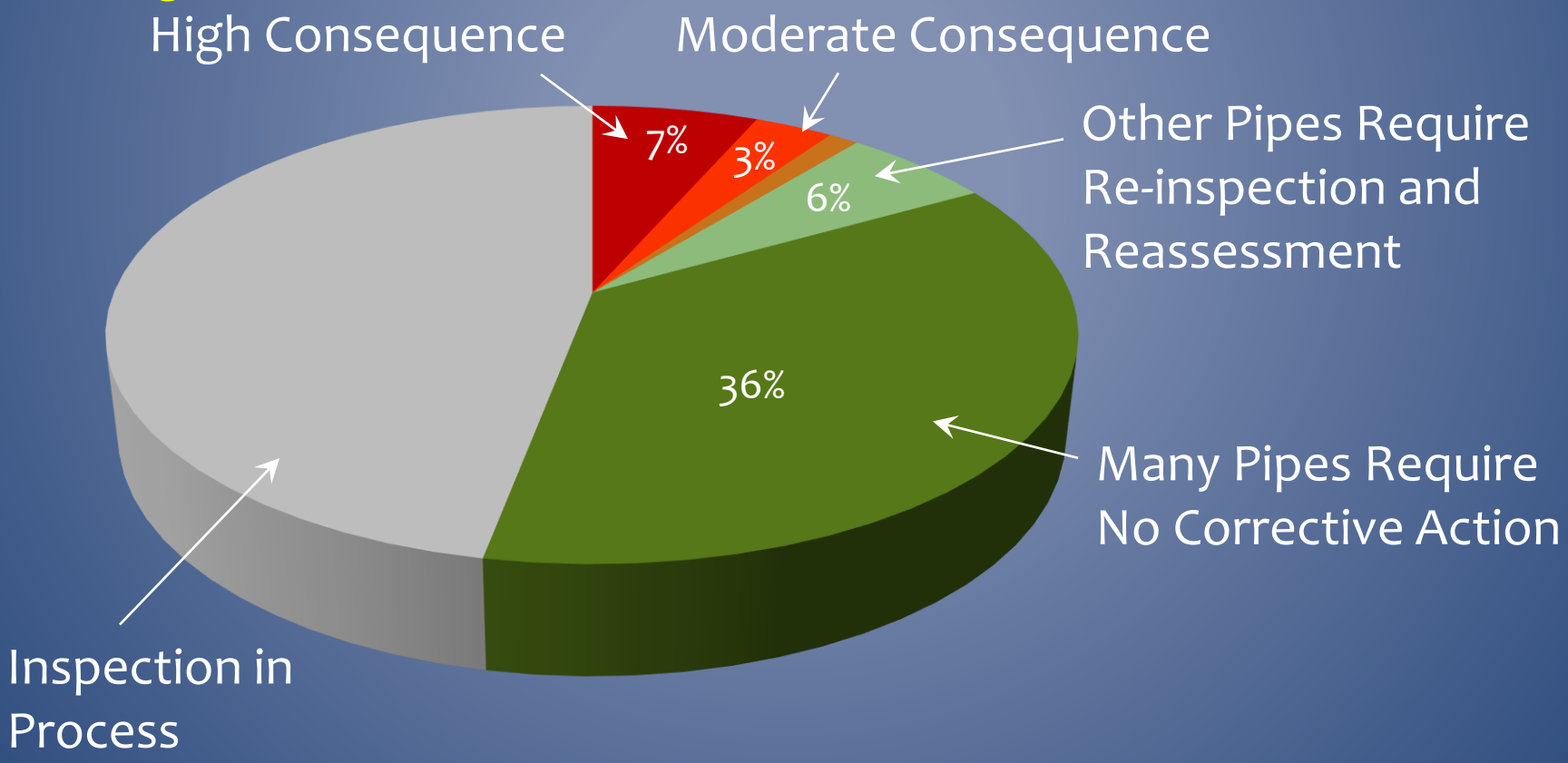
Consequence of Failure (GIS Data)

- Near Waterway
- Near School, Park
- Crosses Major Roadway
- Serves Large Area

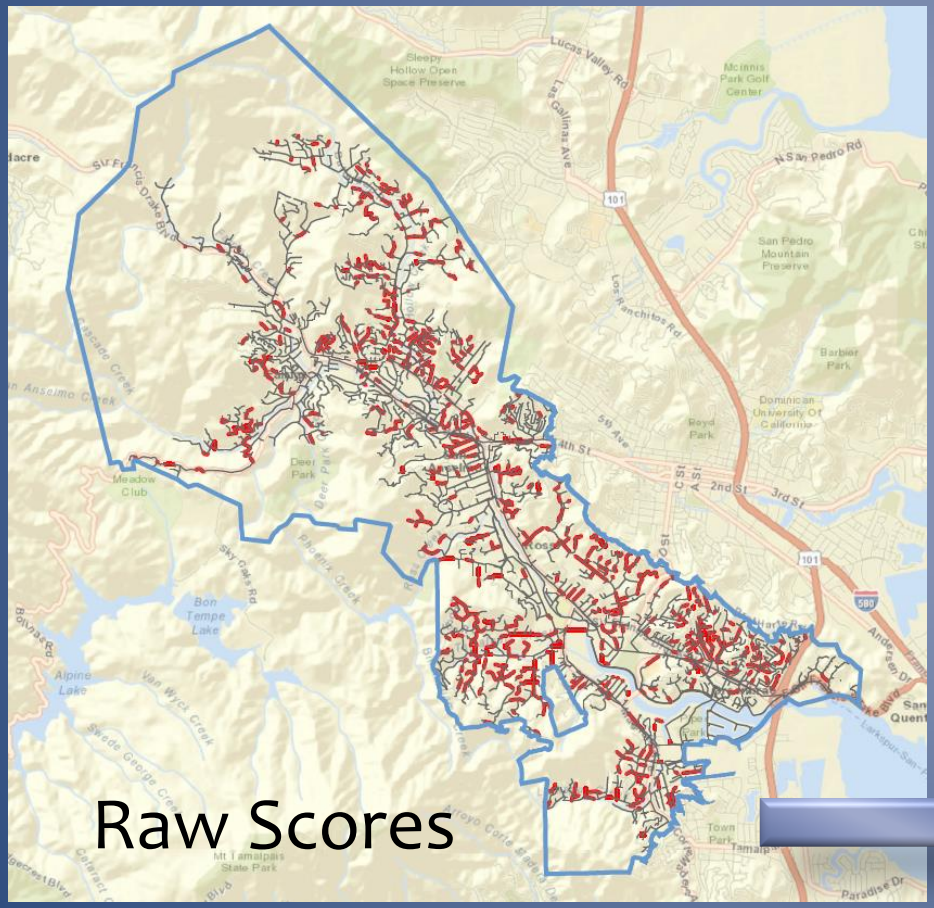
Risk Score for Every Pipe Segment

RISK TOOL SHOW THAT 10% OF THE SYSTEM'S PIPES CONTAIN THE HIGHEST RISK

Highest Risk Pipes Have PACP Str Gr5 or Techite plus..



A COMPARISON OF SYSTEM NEEDS BEFORE AND AFTER THE RISK TOOL SHOWS THE VALUE OF THE ASSET MANAGEMENT APPROACH



TOP FIVE THINGS TO TAKE AWAY FROM THIS PRESENTATION

- RSVD had the data, and now has the tools needed to implement Lifecycle Asset Management
- About ten percent of the system presents the majority of risk
- By prioritizing critical projects and deferring the rest, a high Level of Service can be achieved, with rapid early results
- Costs are controlled through a surgical approach to pipeline replacement
- The District and the Regional Board are now on the same page and ready to move forward

THANKS FROM THE ROSS VALLEY INFRASTRUCTURE ASSET MANAGEMENT PLAN TEAM

DISTRICT STAFF:

GREG NORBY, INTERIM GM
RANDELL ISHII, DISTRICT ENGINEER
JOHN CLARK, CHIEF OF OPERATIONS

CONSULTANT TEAM:

VIVIAN HOUSEN, V. W. HOUSEN & ASSOCIATES
BEN SHICK, SCHAAF & WHEELER
DARBY HOWARD, JDH CORROSION