

AN INTRODUCTION TO CITY INFRASTRUCTURE

CAMP Committee - August 15, 2016

Purpose

- To educate the committee on the types, amounts, and general condition of assets the City owns and operates.
- To help understand the breadth of the infrastructure we are managing.
- Not to become experts in infrastructure management methods.

Disclaimers

- The data collection efforts are not yet complete and results have not all been fully quality-checked.
- All dollar figures included in this presentation are estimates based on information available at the time.
- “Common Problems” does not necessarily mean a high frequency of occurrence.
- “Exposure” does not necessarily mean a high frequency of claims or City liability.

Overview of Infrastructure

□ Roadway-Related

- Streets
- Curb & Gutter
- Sidewalks
- Pedestrian Ramps
- Street Lights
- Traffic Signals
- Traffic Signs
- Hardscape Medians
- Landscaped Medians & Backing Lots
- Bridges

□ Non-Roadway

- Parks & Plazas
- Trails
- Buildings
- Walls
- Public Artwork
- Storm Drains
- Trees

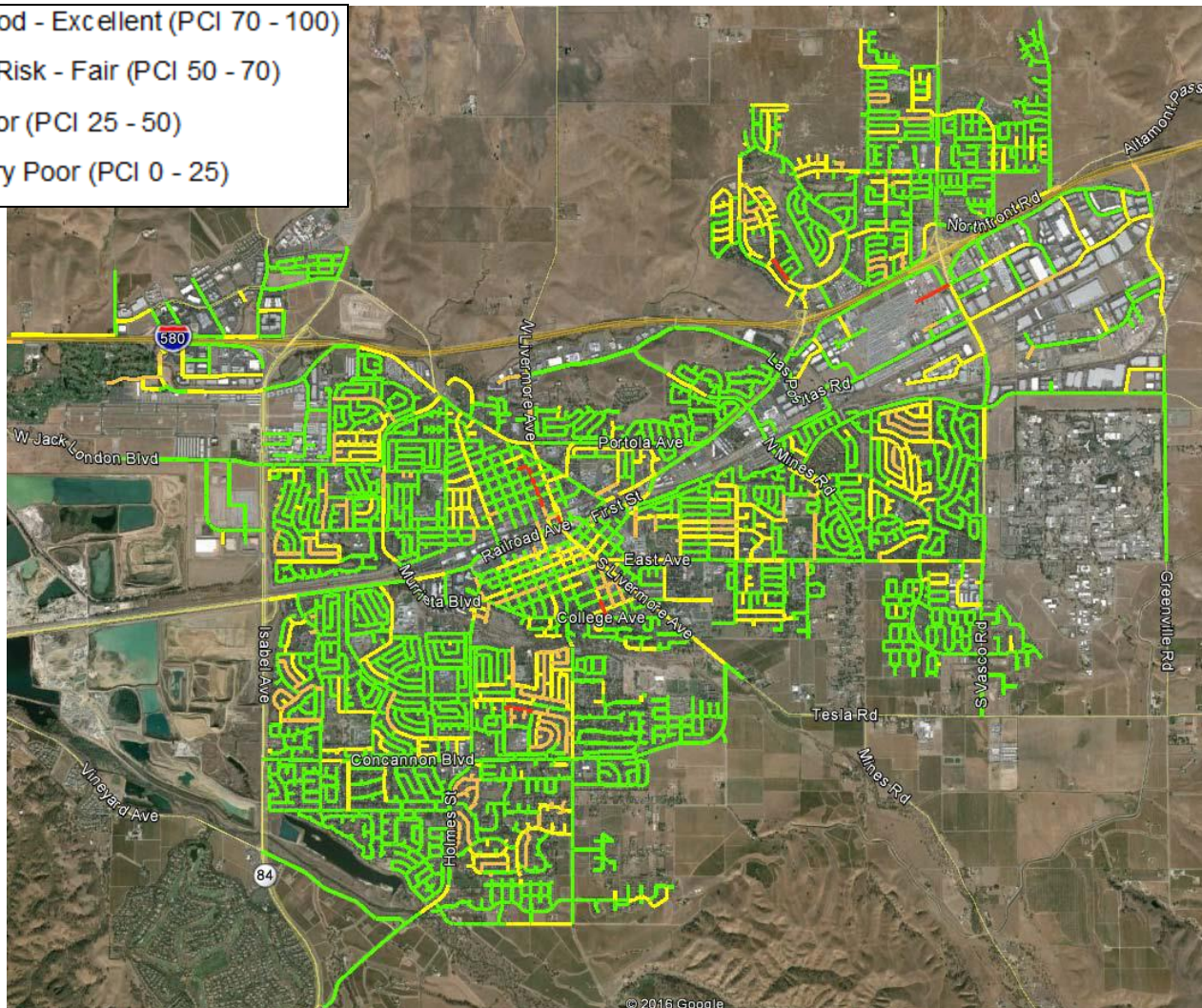
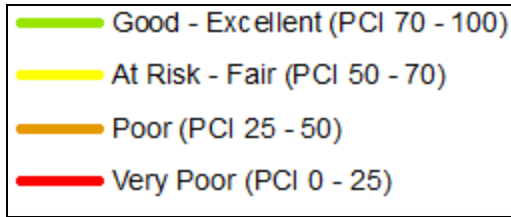
Condition Ratings

- 1 – Like New
- 2 – Good
- 3 – Fair, as expected, based on age
- 4 – Poor, action required in 1-2 years
- 5 – Very Poor, immediate action required

Streets

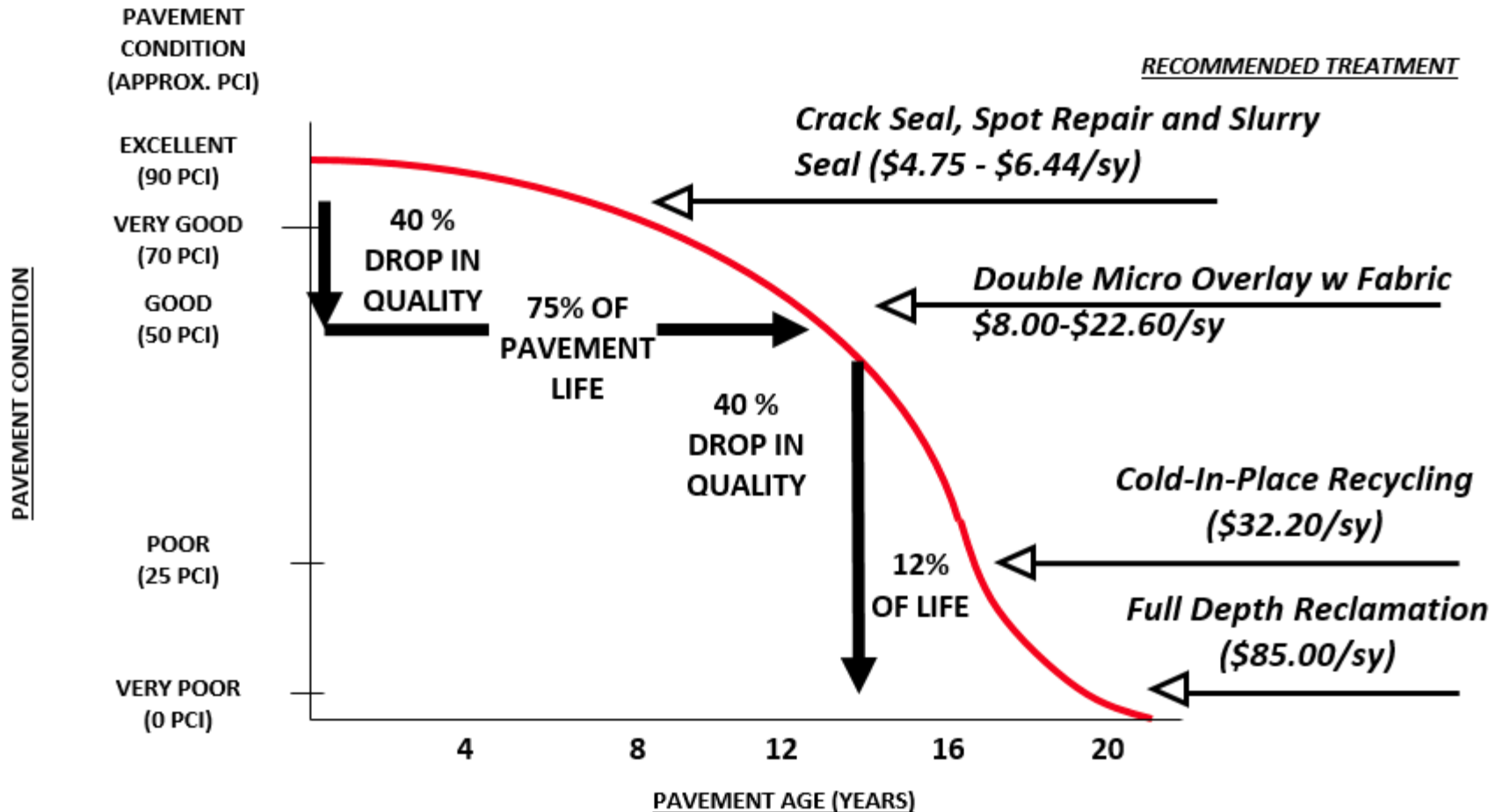
- Inventory: 680 Lane Miles (43 mil sqft)
- Common Problems: Cracking, Water Infiltration, Fading of Striping, Potholes, Surface Abrasion
- Exposure: Liability from claims, traffic collisions
- Management Strategy: Proactive, Average Network PCI Condition
- Replacement Cost: \$533 mil

Streets – Current Conditions



Streets

PAVEMENT LIFE CYCLE



Streets



**Minor Cracking
and/or surface
abrasion =
Surface Treatment**

Streets



**Alligator Cracking,
Base Failure, Water
Pooling =
Expensive Reconstruction**

Curb & Gutter

- Inventory: Estimated 530 miles
- Common Problems: Water Pooling, Cracking, Root Upheaval
- Exposure: Liability from claims, increased damage to adjacent pavement, claims for flooding damage
- Management Strategy: Reactive
- Replacement Cost: Unknown (could be \$80+ mil)

Curb & Gutter



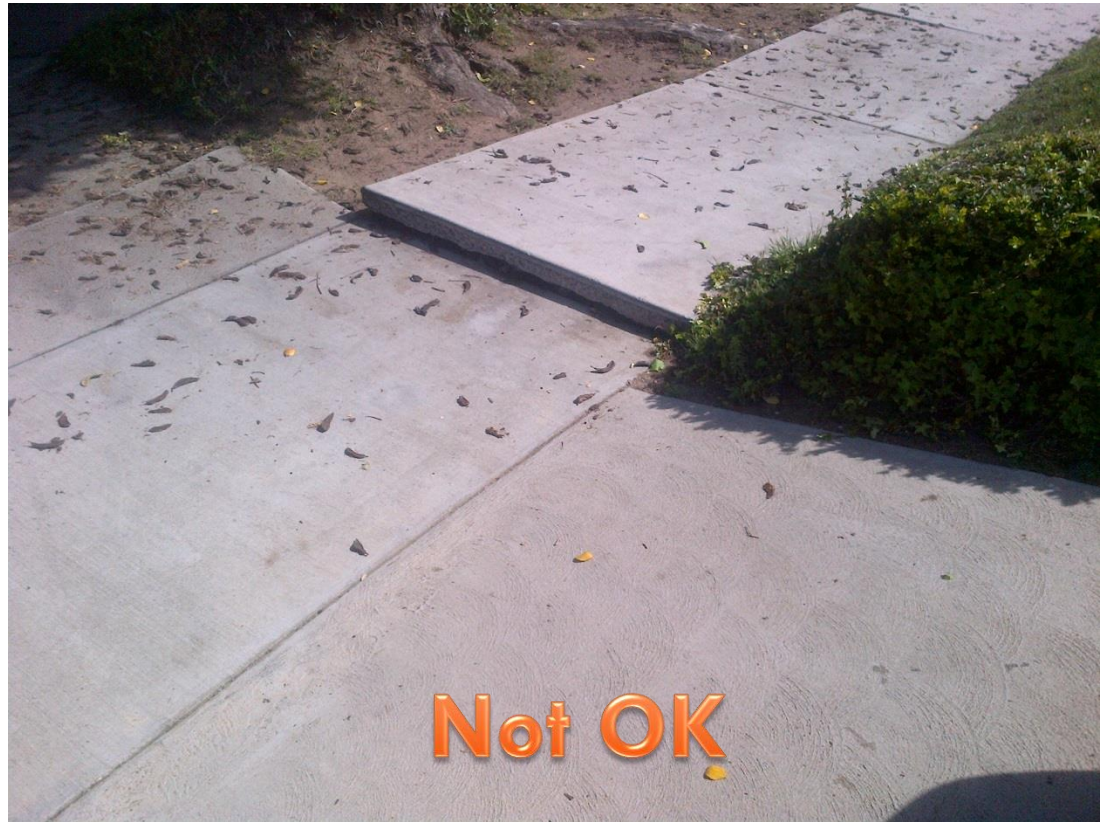
Curb & Gutter



Sidewalks

- Inventory: 16.2 mil sqft
- Common Problems: Uplifting, Horizontal Separation, Damage from Tree Roots
- Exposure: Liability from trip and fall claims
- Management Strategy: Sidewalk Program – Primarily Reactive
- Replacement Cost: \$200-400 mil

Sidewalks



Pedestrian Ramps

- Inventory: In Progress (estimated 6-9,000)
- Common Problems: ADA Non-Compliance
- Exposure: Liability from trip and fall claims, ADA Non-Compliance
- Management Strategy: Proactive when coupled with pavement projects, reactive otherwise
- Replacement Cost: Unknown (est \$25-35 mil)

Pedestrian Ramps



Street Lights

- Inventory: 7,000 to 8,000
- Common Problems: Failure of Photocells, Failure of Fixtures, Damaged by Vehicles
- Exposure: Fixtures Falling, Claims regarding dark areas being unsafe
- Management Strategy: Reactive
- Replacement Cost: \$25-45 mil

Street Lights



Post-Top

Decorative



Cobrahead

Traffic Signals

- Inventory: 106
- Common Problems: Switch to Flash, Loss of Power, Damaged by Vehicles
- Exposure: Liability from claims, traffic collisions
- Management Strategy: Proactive Maintenance, regular checks and testing of conflict monitors
- Replacement Cost: \$40-60 mil

Traffic Signals



Traffic Signs

- Inventory: approx 13,000
- Common Problems: Fading, Non-compliance with Retroreflectivity Guidelines, Vandalism, Damaged by Vehicles
- Exposure: Liability from claims, traffic collisions
- Management Strategy: Proactive, replacement by zone every 12 years
- Replacement Cost: \$3-6 mil

Traffic Signs



Hardscape Medians

- Inventory: In Process
- Common Problems: Traffic Collisions, Wear and Tear
- Exposure: Unknown
- Management Strategy: Reactive
- Replacement Cost: Unknown

Hardscape Medians



Backing Lots & Landscaped Medians

- Inventory: In Process
- Common Problems: Needs Routine Maintenance, Irrigation Problems
- Exposure: Liability from claims, Aesthetic Concerns
- Management Strategy: Routine Maintenance, Reactive Replacement
- Replacement Cost: Unknown

Backing Lots & Landscaped Medians



Bridges

- Inventory: 33 Vehicle, 10 Pedestrian
- Common Problems: Wear and Tear, Surface Wear, Railing Corrosion
- Exposure: Liability from trip and fall claims
- Management Strategy: Reactive, with proactive inspections for most road bridges
- Replacement Cost: Unknown

Bridges



Parks and Plazas

- Inventory: 21 Parks or Plazas
- Common Problems: Vandalism, Wear and Tear, Irrigation, Requires Routine Maintenance, Litter
- Exposure: Liability from claims, Aesthetic Concerns
- Management Strategy: Mix of Proactive & Reactive
- Replacement Cost: Unknown

Parks and Plazas



Trails and Walkpaths

- Inventory:
 - Walkpaths
 - 53,000 sqft
 - Trails
 - 13.5 miles owned/maintained
 - +6.5 miles owned/LARPD-maintained
- Common Problems: Graffiti, Failure of asphalt, Needs Routine Maintenance, Irrigation Problems, Vandalism
- Exposure: Liability from trip and fall claims
- Management Strategy: Reactive
- Replacement Cost: Unknown

Trails and Walkpaths



Buildings

- Inventory: 40 (Historical and Non-Historical)
- Common Problems: Wear and Tear, Expensive Component Failure, Roof Leaks
- Exposure: Liability from claims
- Management Strategy: Reactive, with some preventative maintenance
- Replacement Cost: Unknown

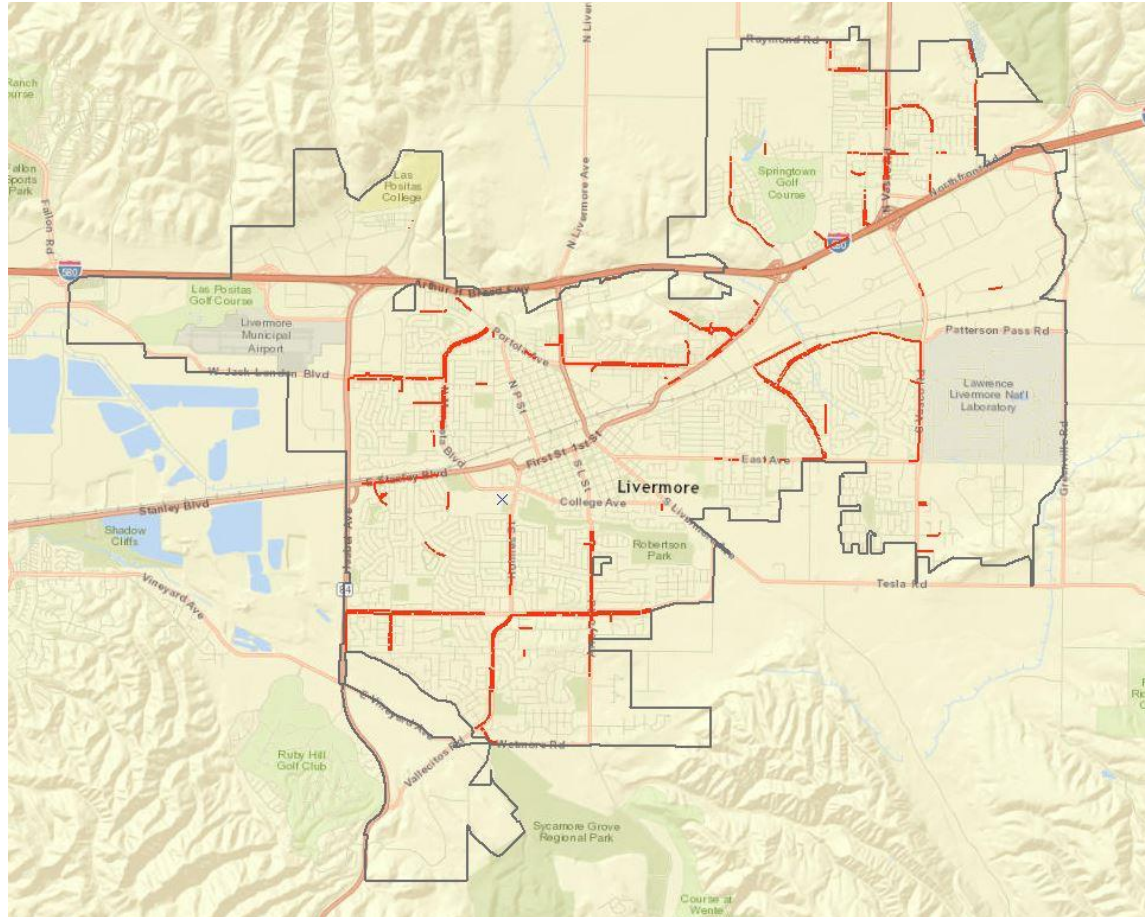
Buildings



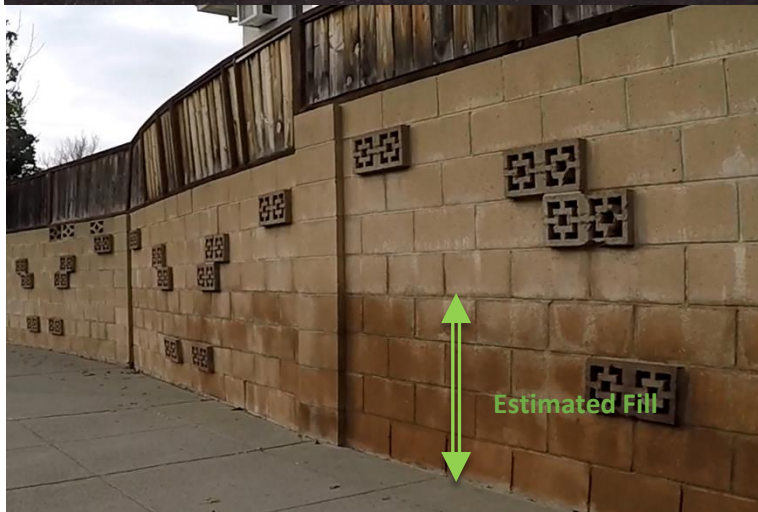
Walls

- Inventory: 34 miles, built from a variety of materials
- Common Problems: Paint Peeling, Soil Loading, Partial Collapse, Aesthetic Concerns
- Exposure: Liability from Claims, Aesthetic Concerns
- Management Strategy: Reactive
- Replacement Cost: Unknown (may be \$100+ mil)

Wall Locations



Walls

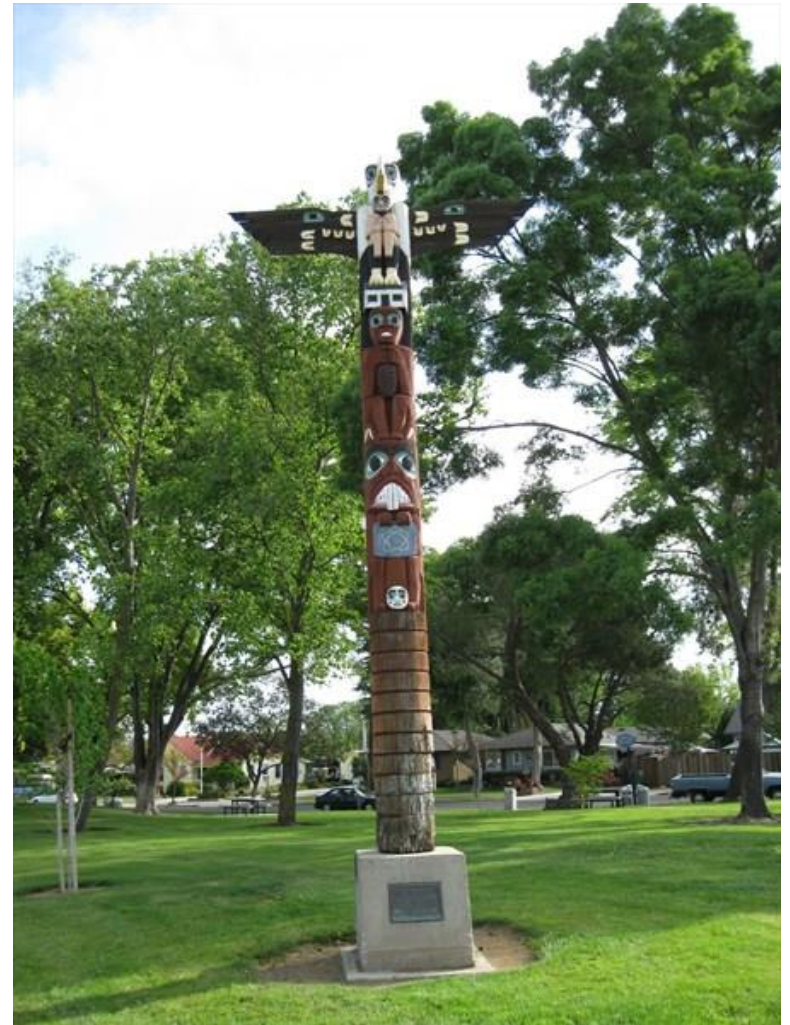


Public Artwork



- Inventory: In Progress
- Common Problems: Vandalism
- Exposure: Liability from claims, Theft
- Management Strategy: Reactive
- Replacement Cost: Unknown

Public Artwork



Storm Drains

- Inventory: In Progress:
 - ▣ Pipe: Estimated 250 miles
 - ▣ Catch Basins: Estimated 5,300
 - ▣ Manholes: Estimated 2,000
 - ▣ Pump Stations: 3
- Common Problems: Pipe Failure, Blockages, Flooding
- Exposure: Liability from claims, Flooding
- Management Strategy: Reactive
- Replacement Cost: Unknown

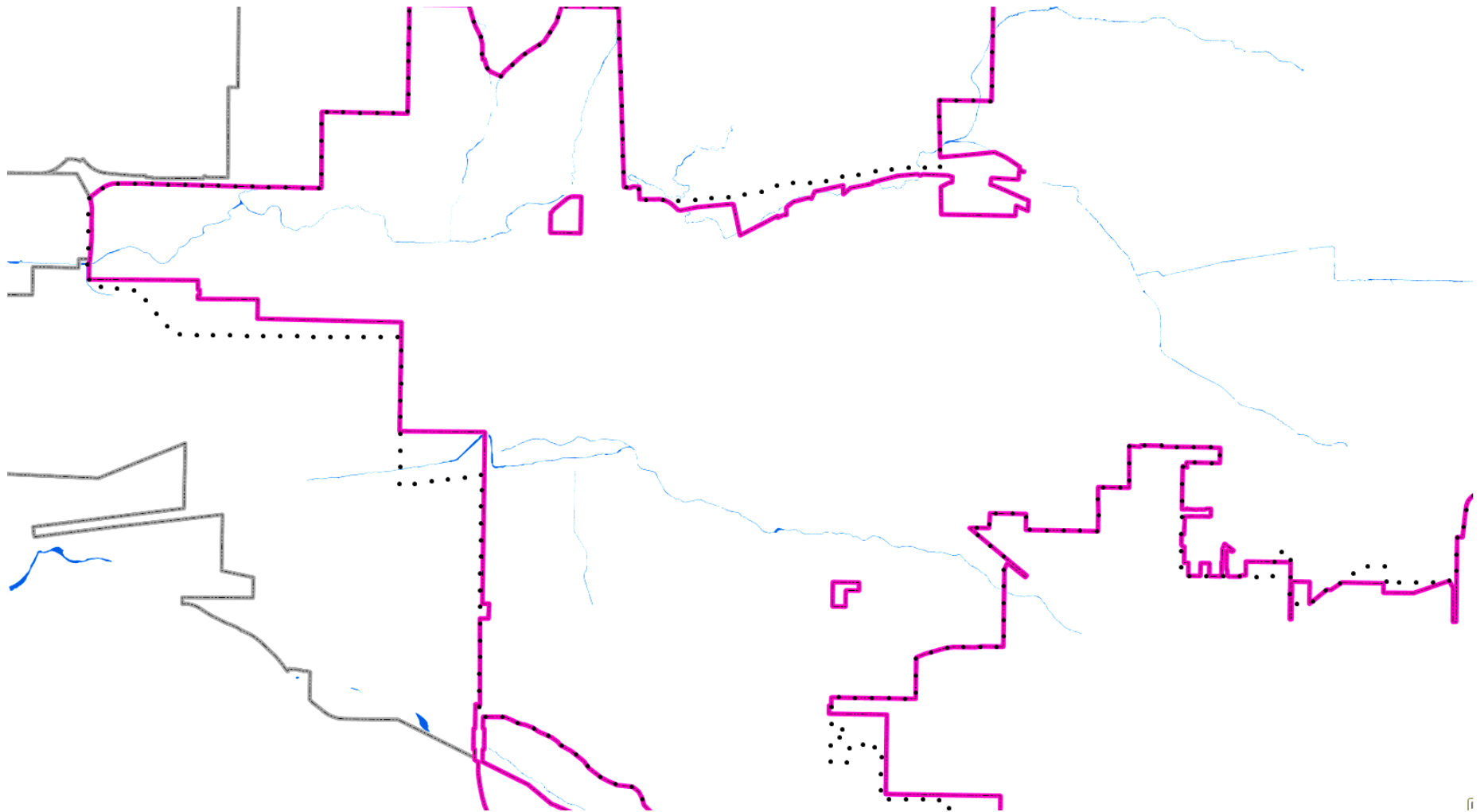
Storm Drains



Waterways

- Inventory: In Progress
 - ▣ Natural Waterways
 - ▣ Concrete Channels
- Common Problems: Blockages, Flooding, Build-up of Sediment, Litter, Dumping
- Exposure: Liability from claims, Flooding
- Management Strategy: Reactive
- Replacement Cost: Unknown

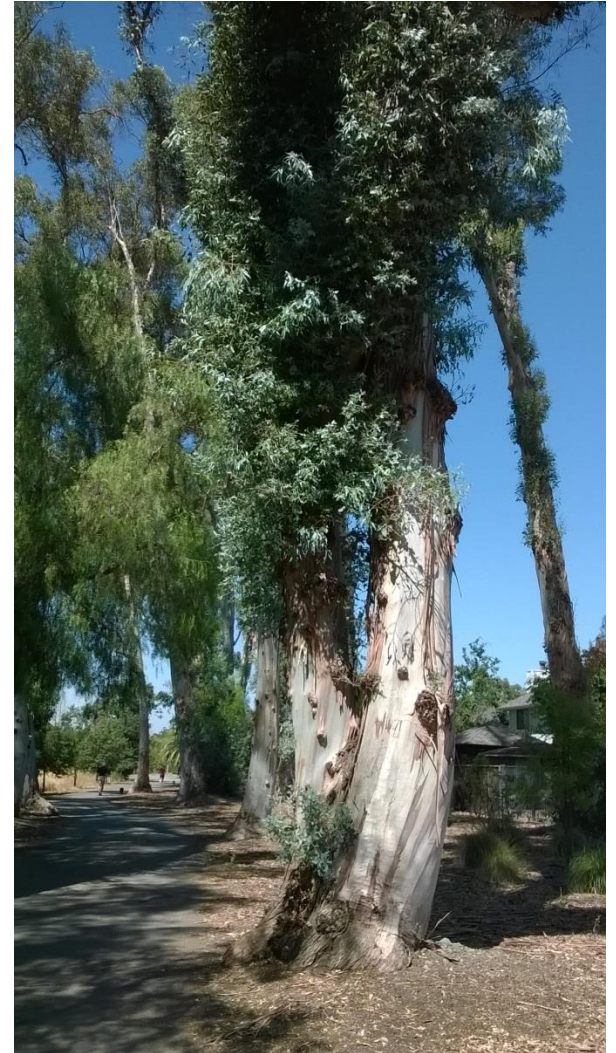
Waterways



Trees

- Inventory:
 - On City Facilities: 2,400
 - Downtown: 1,250
 - Street Trees: Estimate in Progress (Arterials 11,700)
- Common Problems: Tree Death, Branches Falling, Power Lines
- Exposure: Liability from claims
- Management Strategy: Reactive, with some proactive maintenance
- Replacement Cost: Unknown

Trees



Questions?

