

**City of Chula Vista**  
**Asset Management Program**  
**Advisory Committee**

**June 11<sup>th</sup>, 2014**



“above, below, and all around you”



***“INFRASTRUCTURE IS  
THE FOUNDATION FOR  
A SUSTAINABLE  
QUALITY OF LIFE.”***

**CITY OF CHULA VISTA**  
**Asset Management Program**  
**Advisory Committee**  
**“The Road Trip”**

4:30PM Meet and Greet (pizza/beverage)

4:40PM Staff Presentation: The Roadway Management System (RMS) and the Drainage Management System (DMS)

5:00PM Bus Tour (bus tour to highlight RMS and DMS issues in the field, demonstrations of pavement conditions/repair and drainage condition assessments)

6:30PM Close and depart from PWC

# CHULA VISTA'S PUBLIC ASSETS

- Approximately 460 center line miles of paved public streets
- Over 1,000 miles of sidewalks and trails and paths
- Over 500 miles of sewer pipes
- 268 traffic signals
- Over 9,000 street lights
- Over 27,000 street trees
- Over 500 acres of park land
- Over 2,000 acres of open space
- Over 4.2 Million LF of curb and gutters
- 249 miles of storm drains
- Over 550 kW of Solar Photovoltaic systems
- Athletic Fields, Bridges, Civic Center, Drainage Channels, Equipment Inventory, Fire Stations, Fences, Golf Course, Guardrails, Jails, Libraries, Museum, Nature Center, Pipelines, Police Headquarters, Pools, Public Works Center, Recreation Centers, Retaining Walls, Rohr Manor, Visitor Information Center, South Bay Regional Household Hazardous Drop-off Facility, Street Signs, Vehicle Fleet...

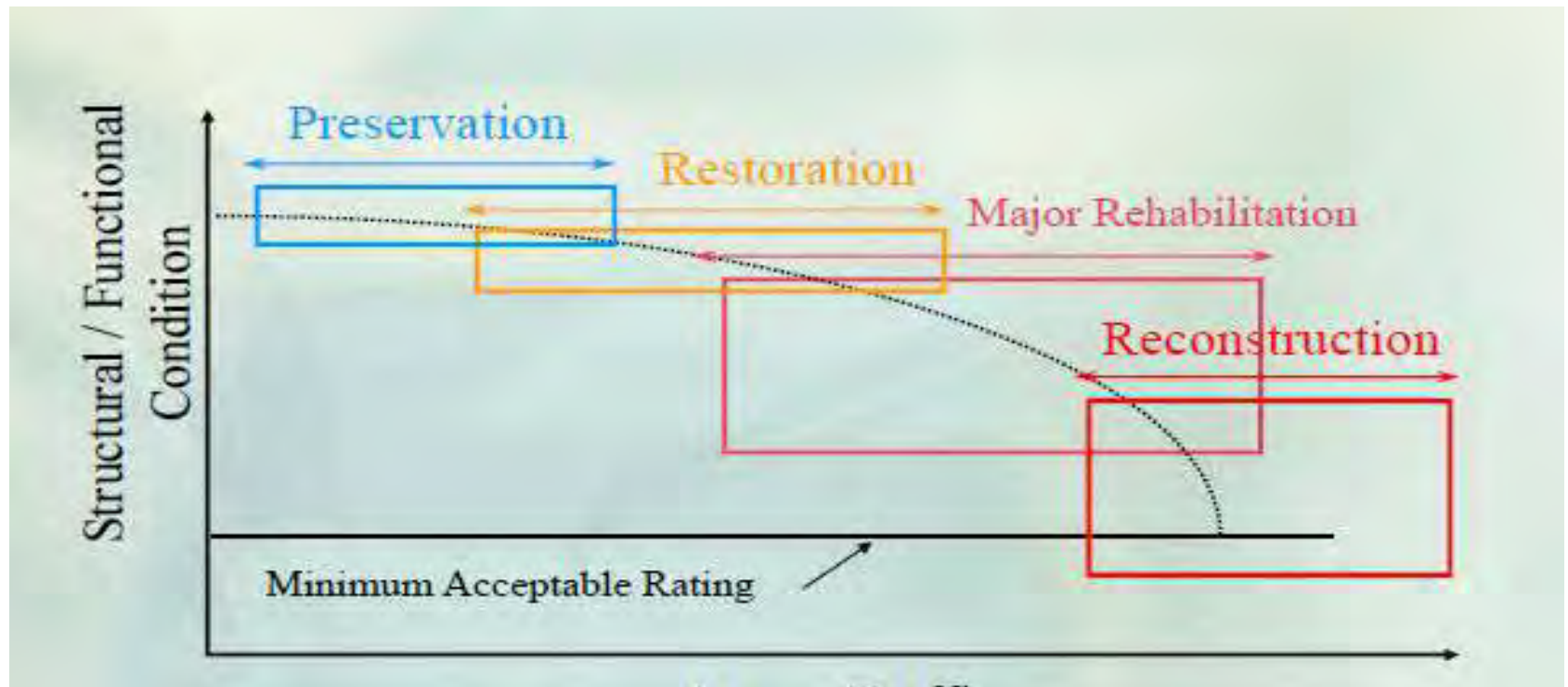


# Asset Management

Managing assets to minimize the life cycle cost of ownership while delivering the service level at an acceptable level of risk

***Optimized Stewardship***

# ASSET MANAGEMENT PERFORMANCE CURVE



# ASSET MANAGEMENT PROGRAM (AMP)

2012	→	2013		
GREEN		GREEN	Wastewater Management System	WMS
YELLOW		YELLOW	Parks Management System	PMS
YELLOW		YELLOW	General Government Management System	GGMS
YELLOW		RED	Building Management System	BMS
YELLOW		RED	Fleet Management System	FMS
RED		RED	Drainage Management System	DMS
RED		RED	Roadway Management System	RMS
YELLOW OSMS	→	GREEN	Open Space Management System	OSMS
	New	RED	Urban Forestry Management System	UFMS

...9 Asset Management Systems for 100 years of investments

# ROADWAY MANAGEMENT SYSTEM (RMS)

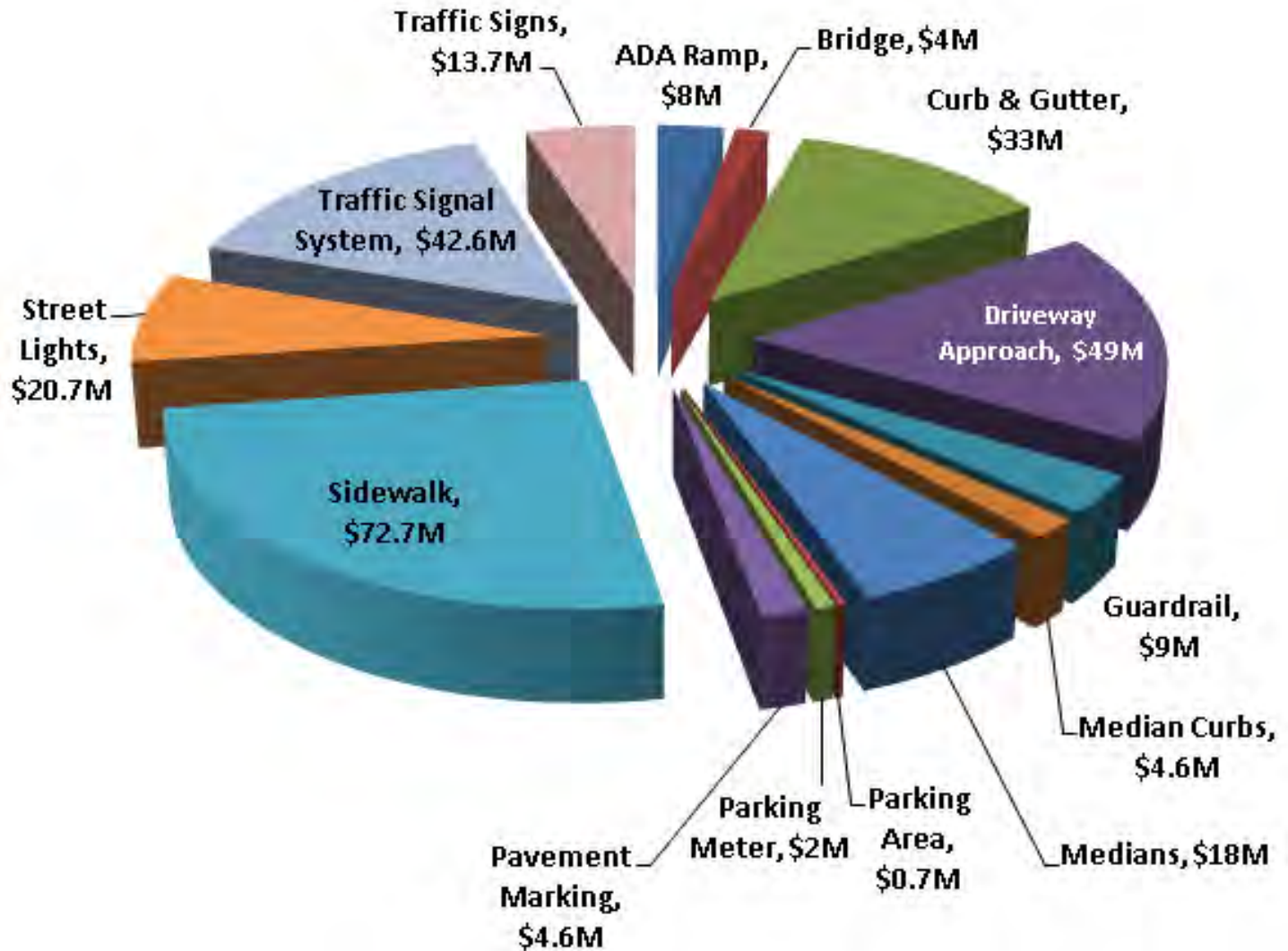
All City-owned assets in the Public Right-of-Way

- Sidewalks and Paths (Peds and Bicycles) (750 miles)
- Medians and Median Curbs (93 miles)
- Curb/Gutter and Cross Gutters (773 miles)
- ADA Ramps (5,497)
- Traffic Signals (260)
- Street Lighting (7,926)
- Guardrails (6.7 miles)
- Traffic Signs (27,324), Traffic Striping and Pavement Markings (587 miles)
- Bridges (21)
- Parking Lots (11), and Parking Meters (335)



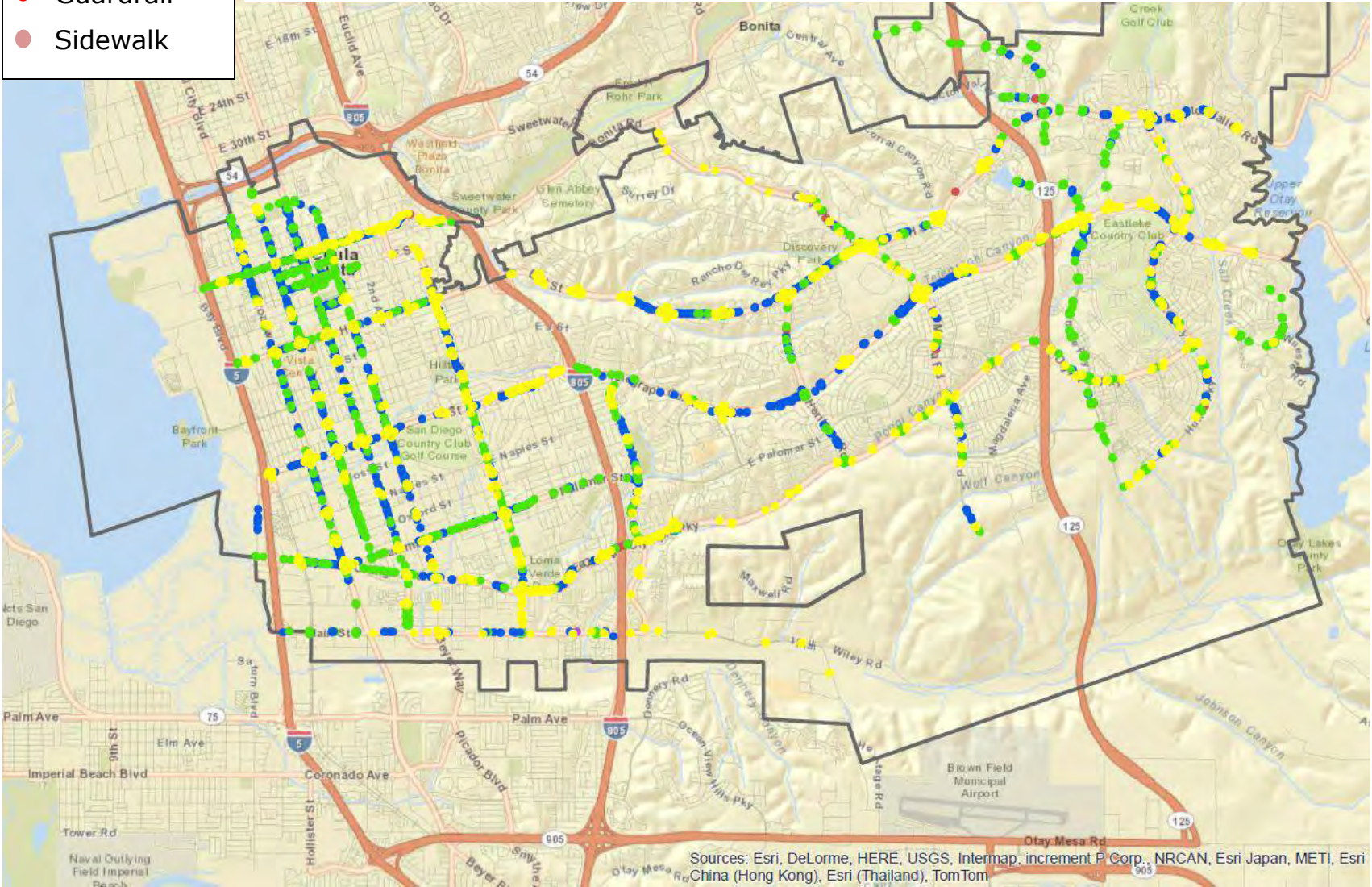


# RMS assets are worth approx. \$283M



- Signage
- ADA Ramp
- Curb
- Guardrail
- Sidewalk

# CONDITION ASSESSMENT WORK PROGRESS



Sources: Esri, DeLorme, HERE, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom

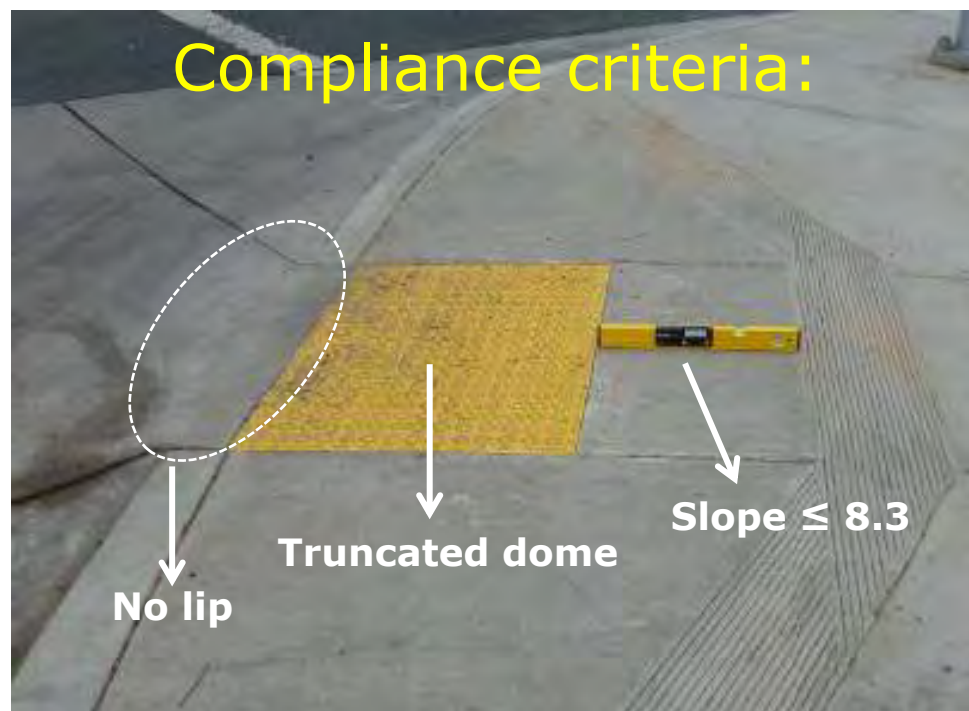
# TRAFFIC SIGN INSPECTION RESULTS

- Average age of sign inspected is 8 years
- Of all sign inspected, 71% passed retroreflectivity requirements

<b>Sign Type</b>	<b>Expected Life</b>
Black on Orange	10 years
Black on White	15 years
Black on Yellow	10 years
White on Green	5 years
Red on White	10 years
White on Red	20 years

# ADA RAMPS

- 1,227 ADA ramps inspected
- 528 new ramps are added to existing inventory
- Results:
  - 31% are fully compliant
  - 19% are partially compliant (missing 1 criteria)
  - 47% are only meet slope criteria
  - 3% are non-compliance



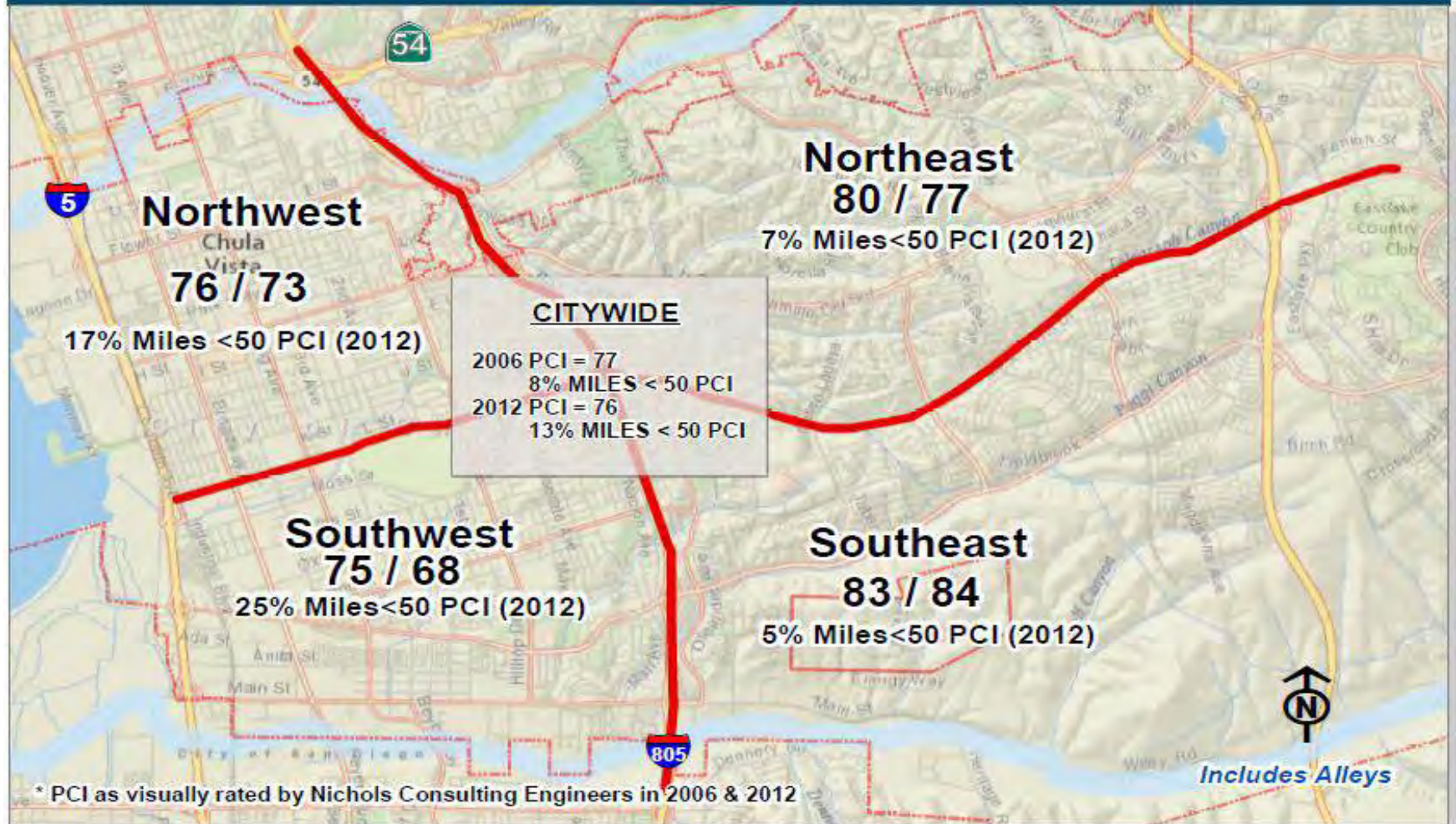
# SIDEWALKS

- 70 miles of sidewalks inspected
- Within the inspected sidewalks, there are 1,070 locations of trip hazards (uplift  $\geq 0.25$  in)
  - 63% are  $\geq 0.5$  in
  - 29% are  $\geq 1$  in
  - 7% are  $\geq 2$  in
- Most uplifts are due to close proximity to trees
  - Install root barrier when planting new trees



# PAVEMENT CONDITION INDEX

## PCI MAP 2006 PCI / 2012 PCI\* - AVERAGE BY AREA



# PAVEMENT ASSETS

<b>Category</b>	<b>Centerline Miles</b>	<b>Lane Miles</b>	<b>Area – Million Sq. Ft.</b>	<b>Current PCI*</b>	<b>Target PCI*</b>
Arterials	58.3	287.4	22.0	<b>80</b>	80
Collectors	77.7	223.2	19.8	<b>73</b>	75
Residential	316.4	642.5	56.4	<b>70</b>	70
Alleys	10.6	22.0	1.3	<b>51</b>	
<b>TOTAL NETWORK</b>	<b>463.0</b>	<b>1175.1</b>	<b>99.5</b>	<b>73</b>	

\*PCI – Pavement Condition Index June 2014



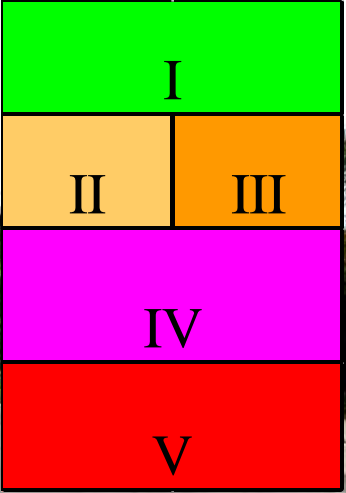
I	
II	III
IV	
V	



PCI = 75

Action = Crack or surface seal



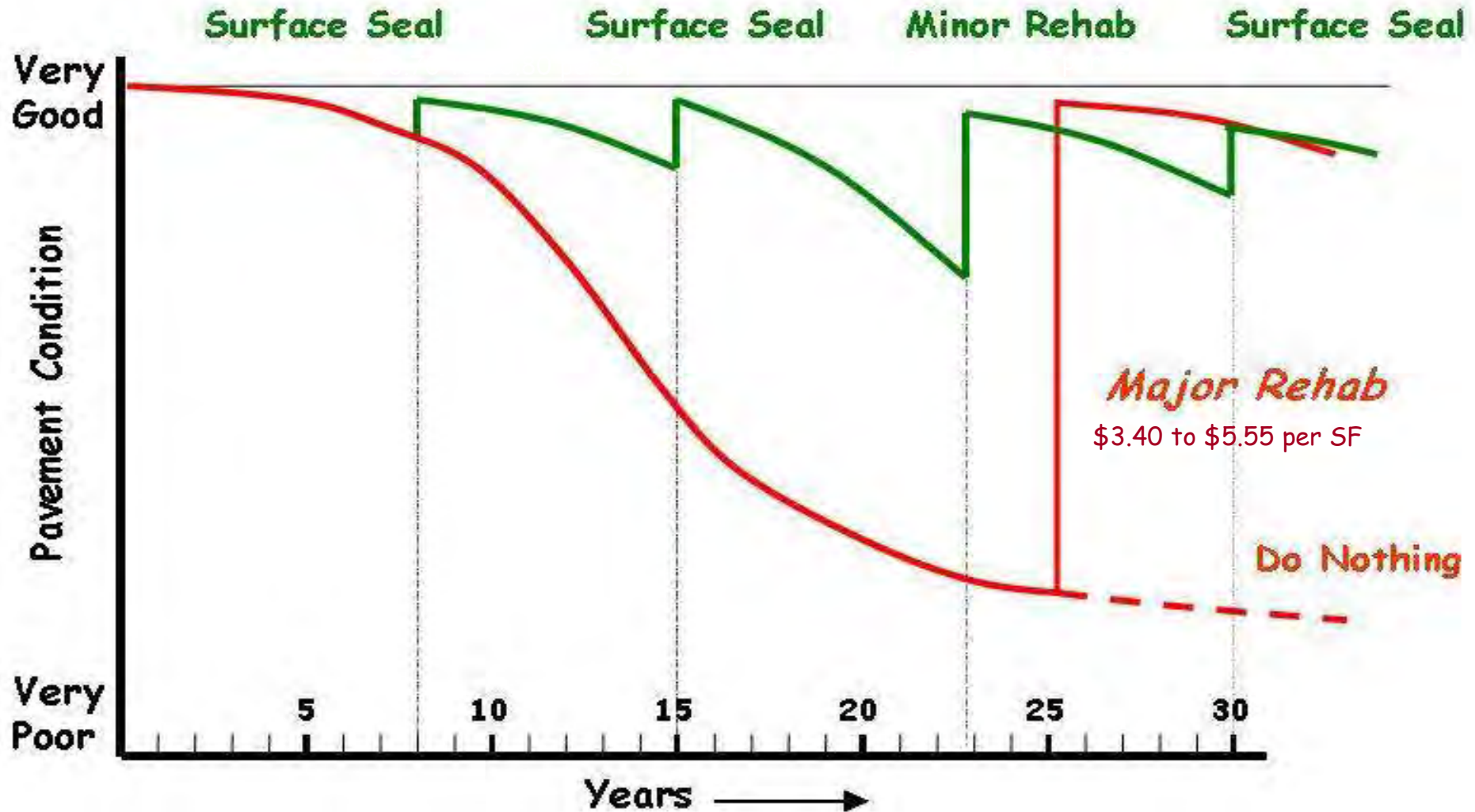


PCI = 40

Action = Thick overlay



# Pavement Preservation Strategies





**“Digout” repairs**

**Spot repairs:** Crack filling and “digouts” to repair potholes. Generally done by City crews



**Crack Filling**



**Slurry Seal:** A thin layer of asphalt emulsion, aggregate, water and additives

**Chip Seal:** A thin layer of asphalt emulsion covered by a thin aggregate cover



**Cape Seal:** Slurry seal applied over a Chip Seal



**Overlay:** A minimum 1½” thick asphaltic concrete layer applied on streets that show signs of structural failure

**Reconstruction:** Removal and replacement of both the asphalt concrete pavement and the aggregate base

**Full Depth Reclamation:**

Recycling and re-using the existing pavement, base and soil, which are pulverized and blended, and cement is added. 3" or 4" of asphalt concrete pavement is placed over the FDR base



# Roadway Management System Current Funding Mechanisms

- *TransNet Bond Measure*
- *Gas Excise Tax Increase*
- *Grants*
- *Assessment District (Alleys, Sect 108)*
- *ARRA Funds-Economic Stimulus*

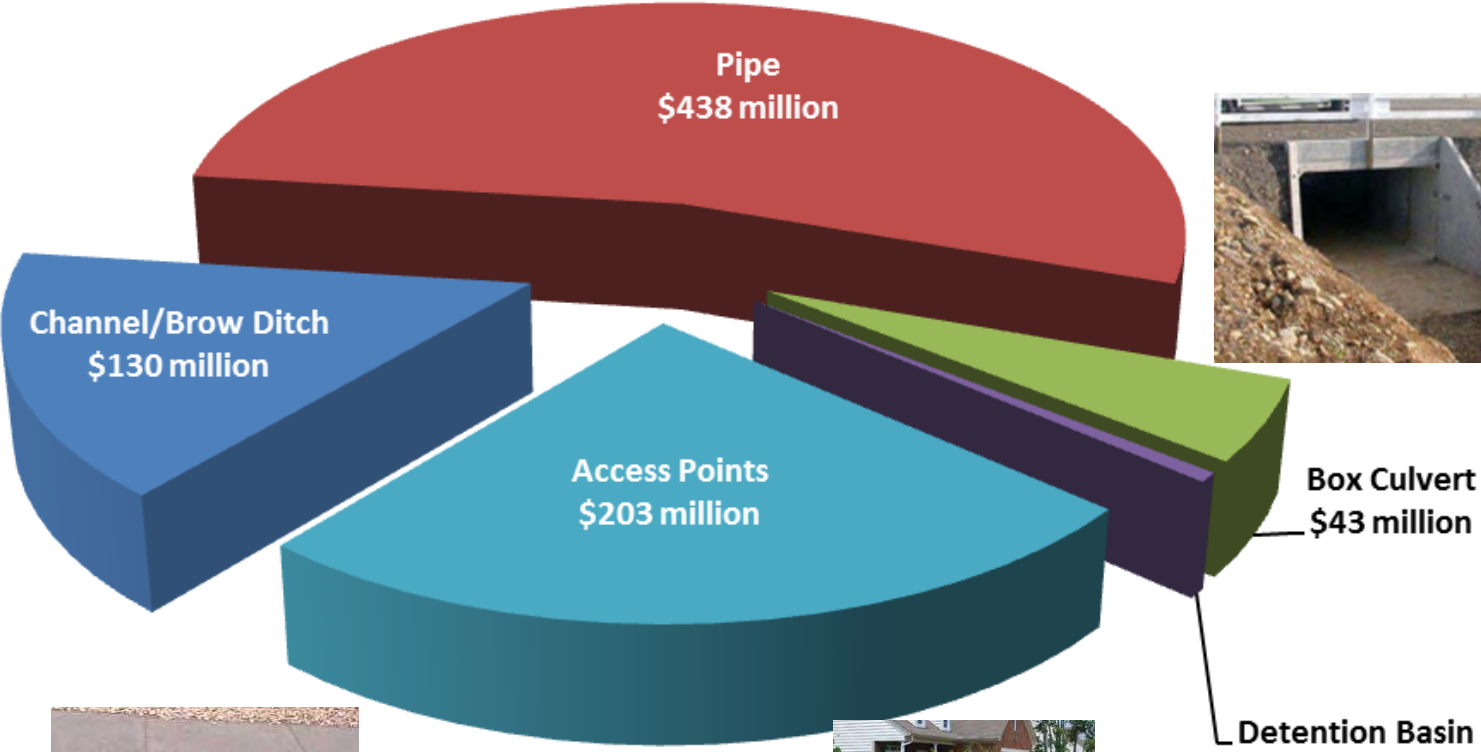
# DRAINAGE MANAGEMENT SYSTEM (DMS)

- **Approximately 1.5 million feet of pipe**  
(CMP, HDPE, PVC, RCB, RCP, VC) size ranging from 4" to 180"
- **Approximately 1.6 million feet of channel**  
(Brow Ditch, Concrete Lined Rectangular and Trapezoidal, Natural)
- **Approximately 13,000 Public Access Points**  
(Clean Outs, Head Walls, Inlets, Junction Structures, NPDES Structures, Outlets)
- **Approximately 150 Other Structures**  
(Desilting Basins, Detention Basins, Gabion Structures, Water Quality Basins)



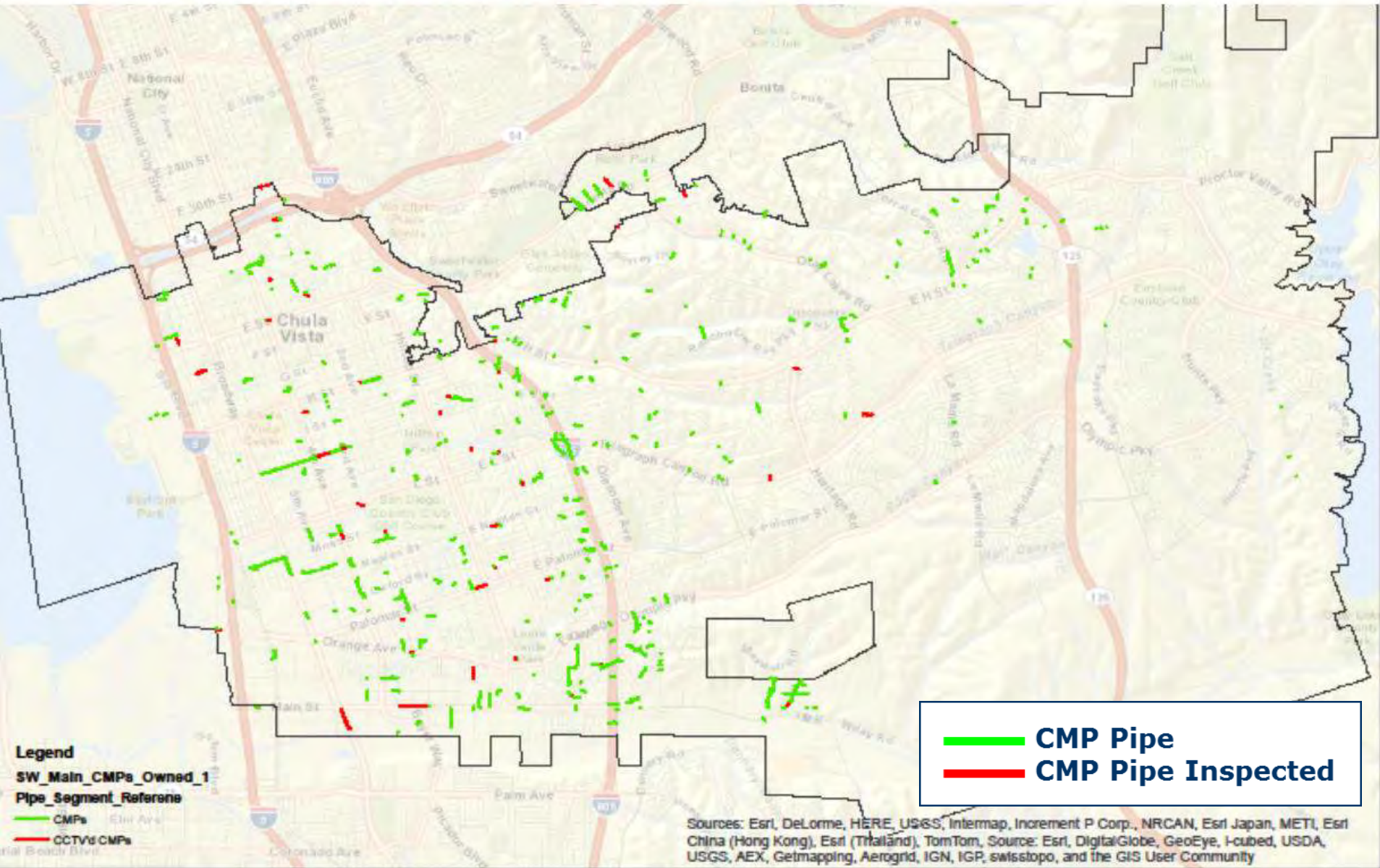


# DMS assets are worth approx. \$819M





# Corrugated Metal Pipes (CMP) Inspected



# DMS CHALLENGES

## **Low Confidence Level of Existing Data**

- Unknown material or different than actual
- Unknown size or different than actual
- Inconsistent asset definition
  - Where a pipe lies within a channel, two asset are not distinguished (one asset ID)
- Minimal condition assessment data
- Small Revenue from Drainage Fee (Sewer Bill)

# The Road Trip

via Main St 25 min

898 Melrose Ave

145 Jamul Ave

1201-1299 E Palomar St

25 min  
10.5 miles

Research Ct

3770-3798 Main St

895 Energy Way

Google Maps

Map data ©2014 Google

10:19 AM  
6/11/2014