



Infrastructure Asset Management

Southwest Chula Vista Civic Association
April 26, 2007



Chula Vista's Municipal Infrastructure

- Pavement*
- Alleys
- Parking Lots
- Sidewalks*
- Curbs*
- Gutters*
- Corners*
(including ped ramps)
- Bridges
- Retaining Walls
- Stairways
- Guardrails
- Trees
- Traffic Signals
- Streetlights
- Street Signs
- Pavement Markings
- Parking Meters
- Wastewater Collection System
(pipelines and pump stations)
- Storm Water Conveyance
System*
- Public Buildings
(including parking structures)
- Parks
- Open Space

* First phase focus areas

Underlying Beliefs

Infrastructure Asset Management

- Ongoing preventative maintenance to preserve infrastructure and avoid catastrophic failure
- Proactive infrastructure management is necessary to manage risk and liability
- Catastrophic failure means higher expense repairs, more impact to the public
- Pay now or pay more later

The Elements of Infrastructure Asset Management

- Inventory
- Condition and Capacity Assessment
- Determine desired/required service level
- Gauge current service level
- Estimate amount of funding required to close the gap between current and desired service level
- Establish criteria for choosing priorities
- Identify projects
- Prioritize projects
- Identify funding
- Deliver project
- Automated system to manage related data (inventory, condition, capacity, maintenance history, work orders, work in the right-of-way, etc.)

Partial Estimated Funding Need

Infrastructure Component	Total Funding Need (2006 Dollars, Rounded)
Pavement	\$192,000,000 over 10 years \$ 19,200,000 per year
Drainage	
CMP Storm Drain Pipe	\$ 29,000,000
Priority 1 Tier	\$ 28,800,000
(Funded Projects)	(\$ 4,400,000)
Priority 2-4 Tiers	\$ 6,300,000 to \$8,900,000
Priority 5 Tier	\$ 1,310,000 to \$2,300,000
Missing Infrastructure	\$139,400,000
<i>Total Partial Infrastructure Funding Need</i>	<i>\$392,400,000 to \$396,000,000</i>
Utility Wire Undergrounding	\$275,000,000

Utility Wire Undergrounding

- Not typically included with municipal infrastructure
 - Utility company asset
 - Restricted funding source (\$2 million/year 20A funds)
- \$30.4 million since 1986
- \$30.2 million obligated thru 2018
 - Bayfront: \$20.0 million
 - Six other districts: \$10.22 million
- GIS Map for more detail

**Total Estimated Funding Gap = \$275 million
138 years**

- Infrastructure Workshop #2

Missing Infrastructure

(Sidewalks, Curbs, Gutters, Ped Ramps, Cross Gutters)

- Missing Sidewalk: 162,000 lineal feet (\$24 million)
- Missing Sidewalks, Curbs and Gutters: 148,000 lineal feet (\$107 million)
- Missing Ped Ramps: 1,223 missing ramps (\$8.0 million)
- GIS Map for more detail

Total Estimated Funding Gap = \$139 million

- Problematic Cross Gutters: 87 to date (\$10,000 to \$100,000 each)
- Infrastructure Workshop #2

Pavement



Pavement Facts

- Largest Municipal Backbone Asset
- \$659 million replacement value
- Often assumed to be a primary municipal responsibility
- Highly visible/High public expectations
- Dedicated non-municipal funding is ***not*** sufficient to meet growing need
- Last General Fund contribution:
\$0.9 million for landscape beautification
with H Street reconstruction between
Broadway and I5



Why Have a Pavement Management System?

- Required to obtain funding from State transportation improvement programs
- Chula Vista implemented in 1986
- Applies cost effective treatments early and throughout pavement life
- Focus on preservation and extending service life, not “worst first”



General Information

- 1,113 lane miles (2,841 street sections)
- **\$ 659 million replacement value**

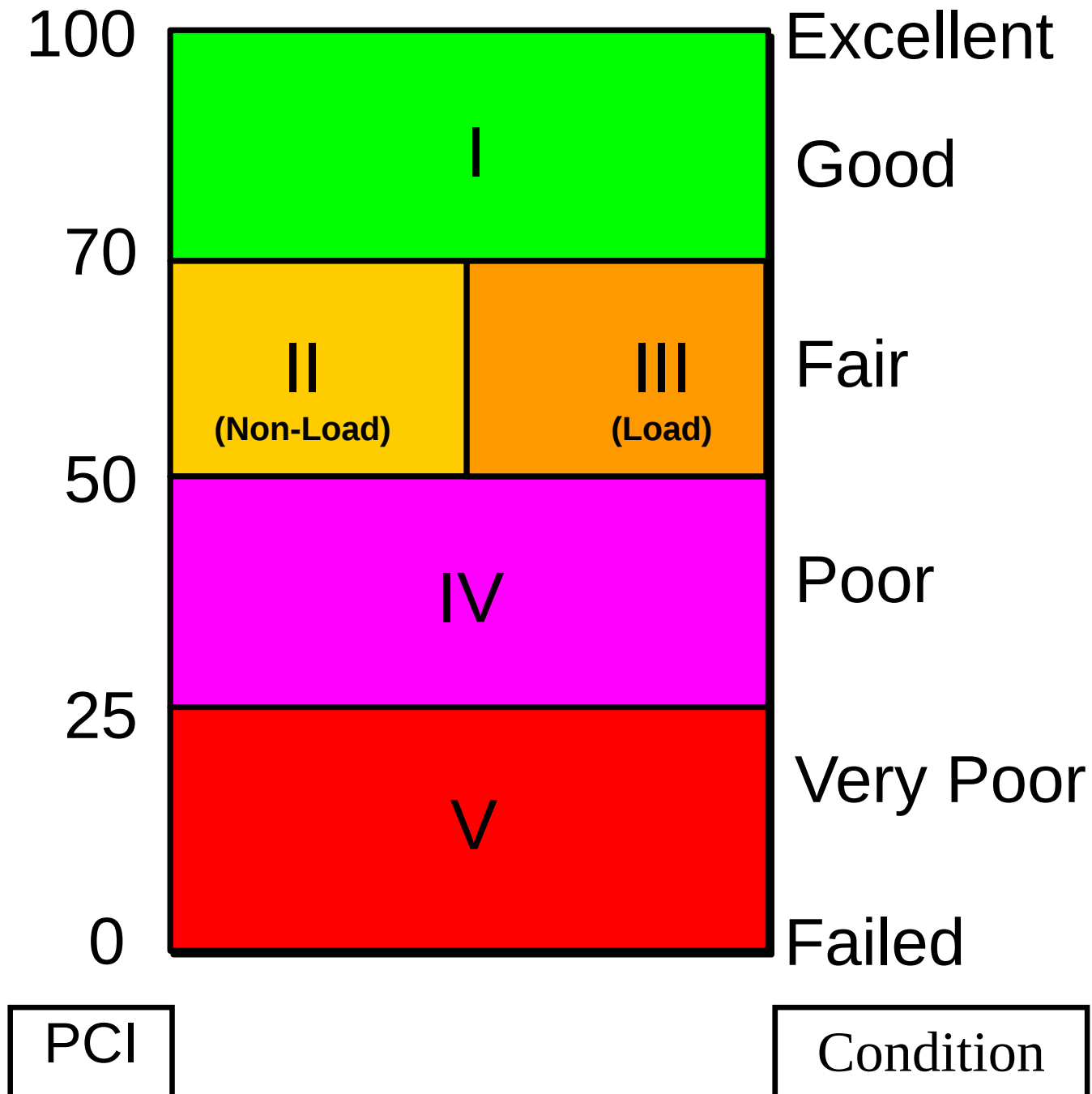
Functional Class	Total Mles	Lane Mles
Arterials	46.5	231.3
Collectors	74.4	208.5
Local/Alleys	320.0	673.9
Total	440.9	1113.7

How large is Chula Vista's network?

- 1113 lane miles
- Chula Vista to Vancouver, WA
- At 35 mph it takes ~32 hours (4 days) to cover the distance



How do we measure pavements?





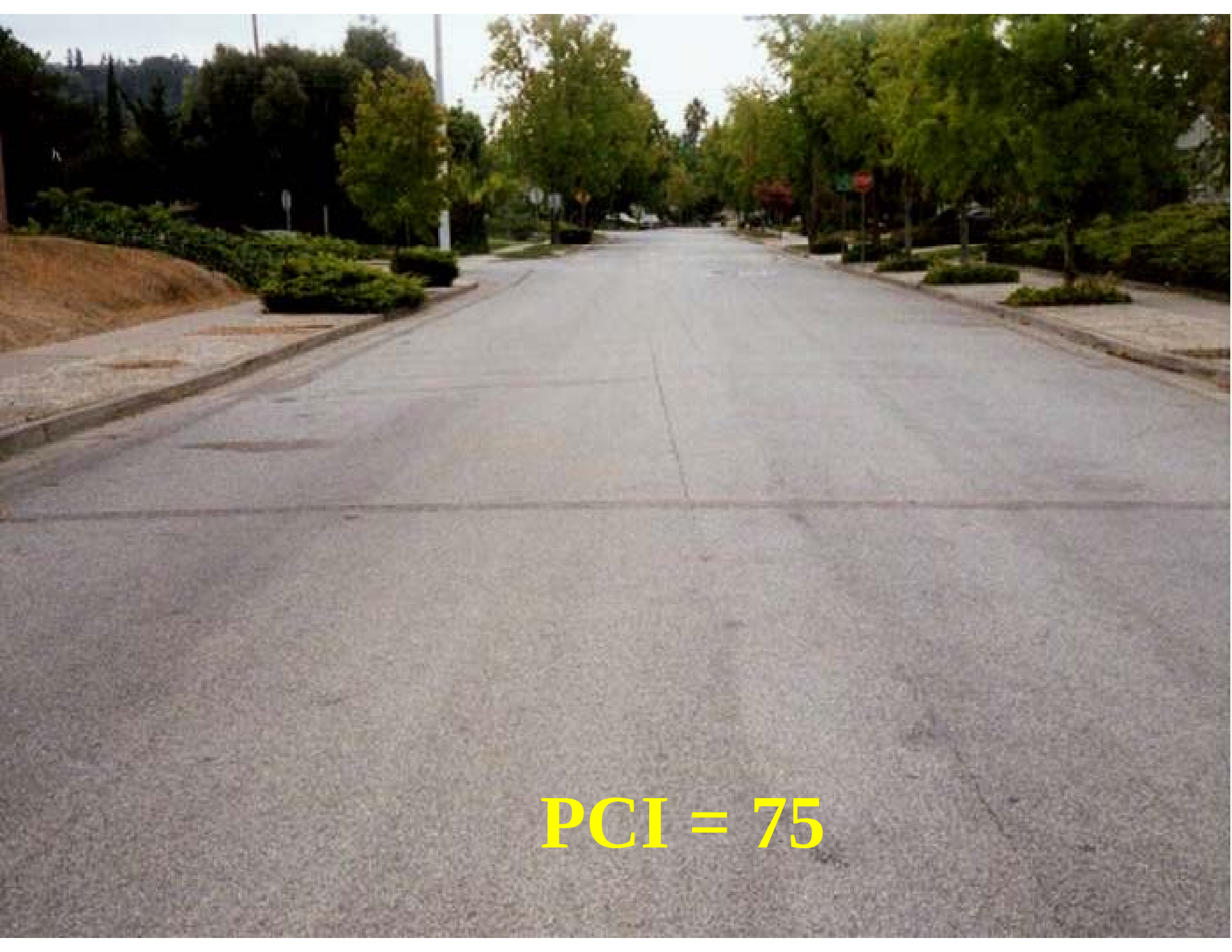
PCI = 95
Action = Do Nothing



PCI = 21

Action = Reconstruction

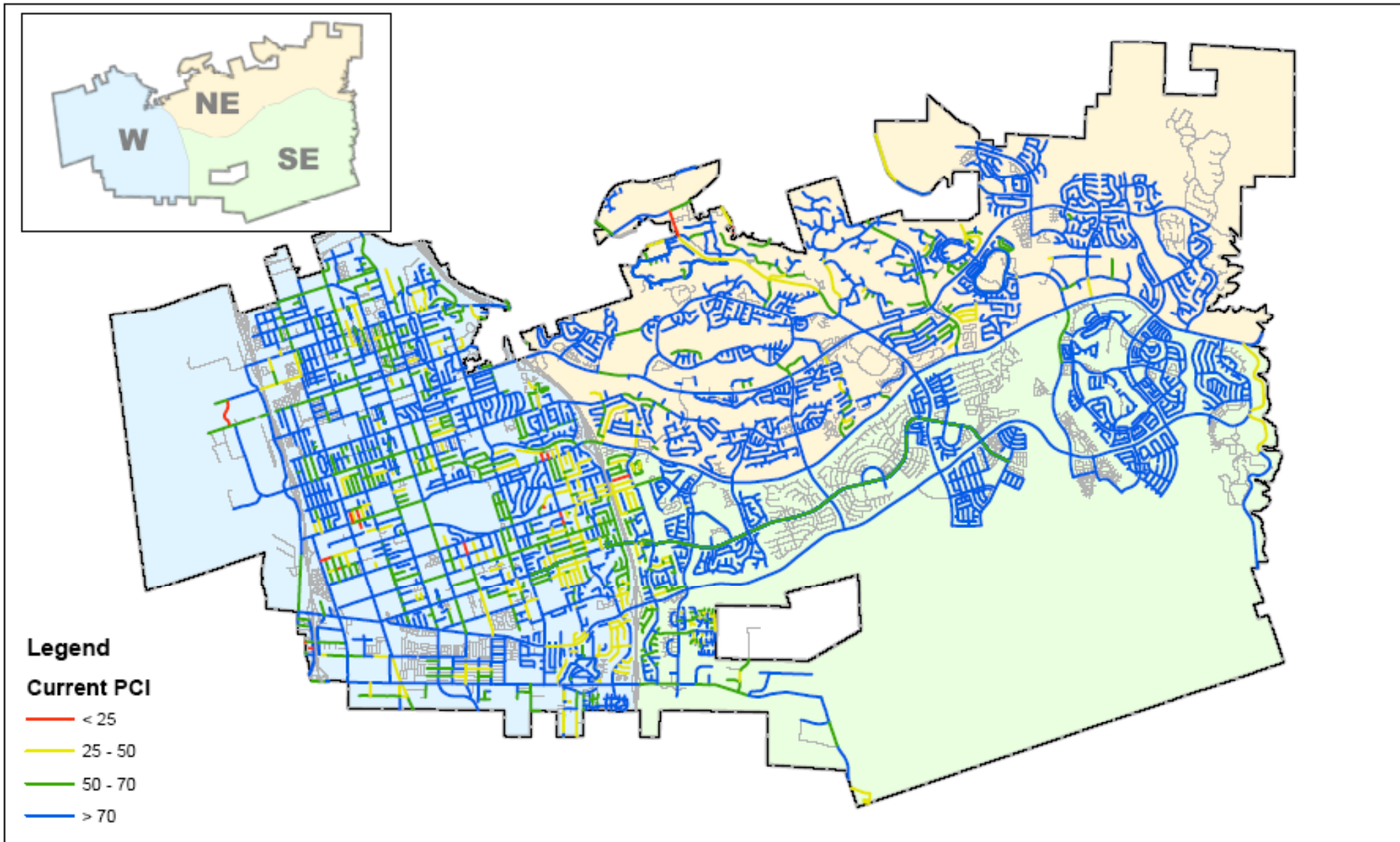




PCI = 75

Current 2006 PCI

(Average PCI = 79 Backlog \$43 million)



“Pay Now or Pay More Later”

Pavement Condition

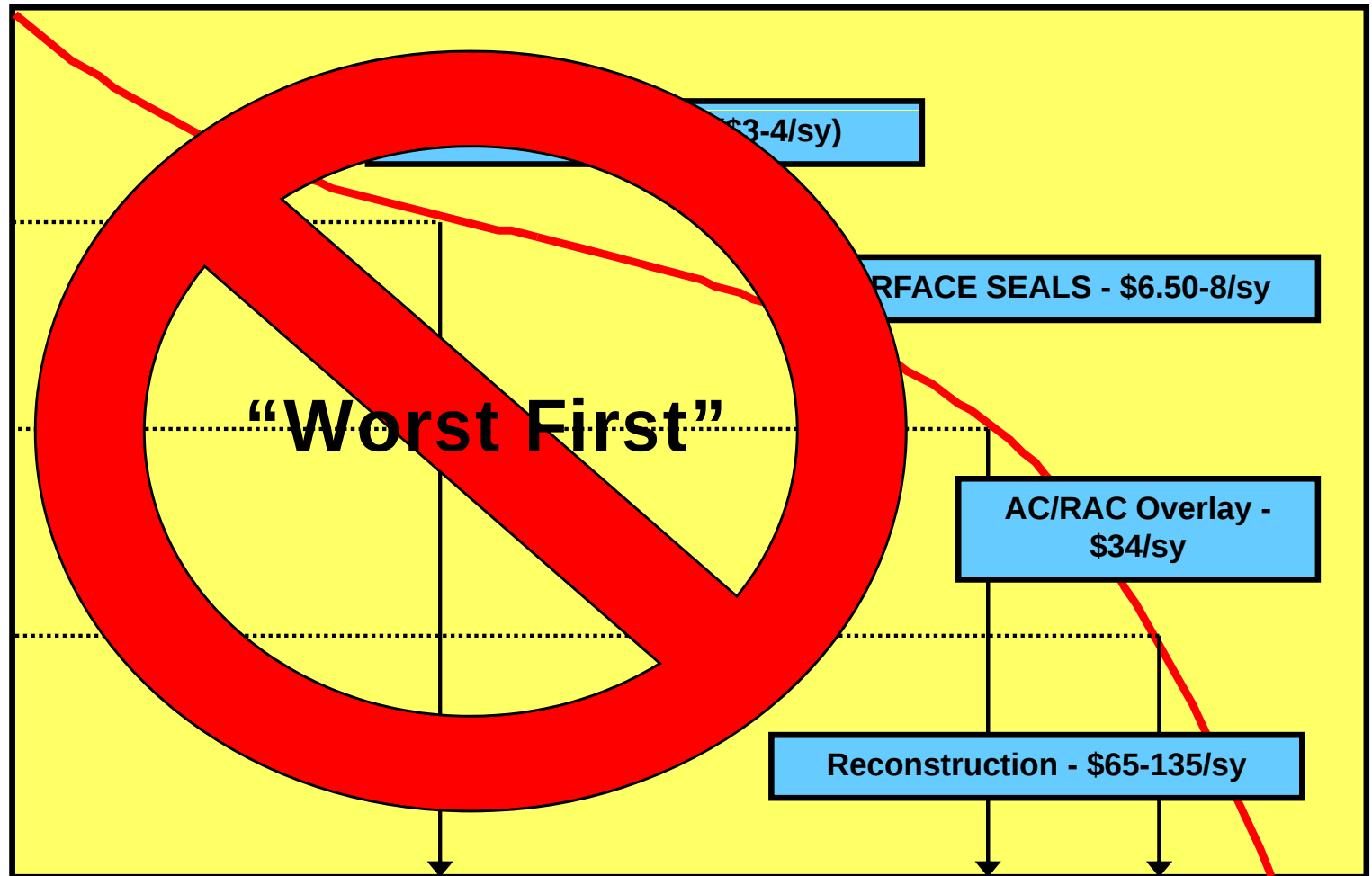
Excellent

Good

Fair

Poor

Very Poor

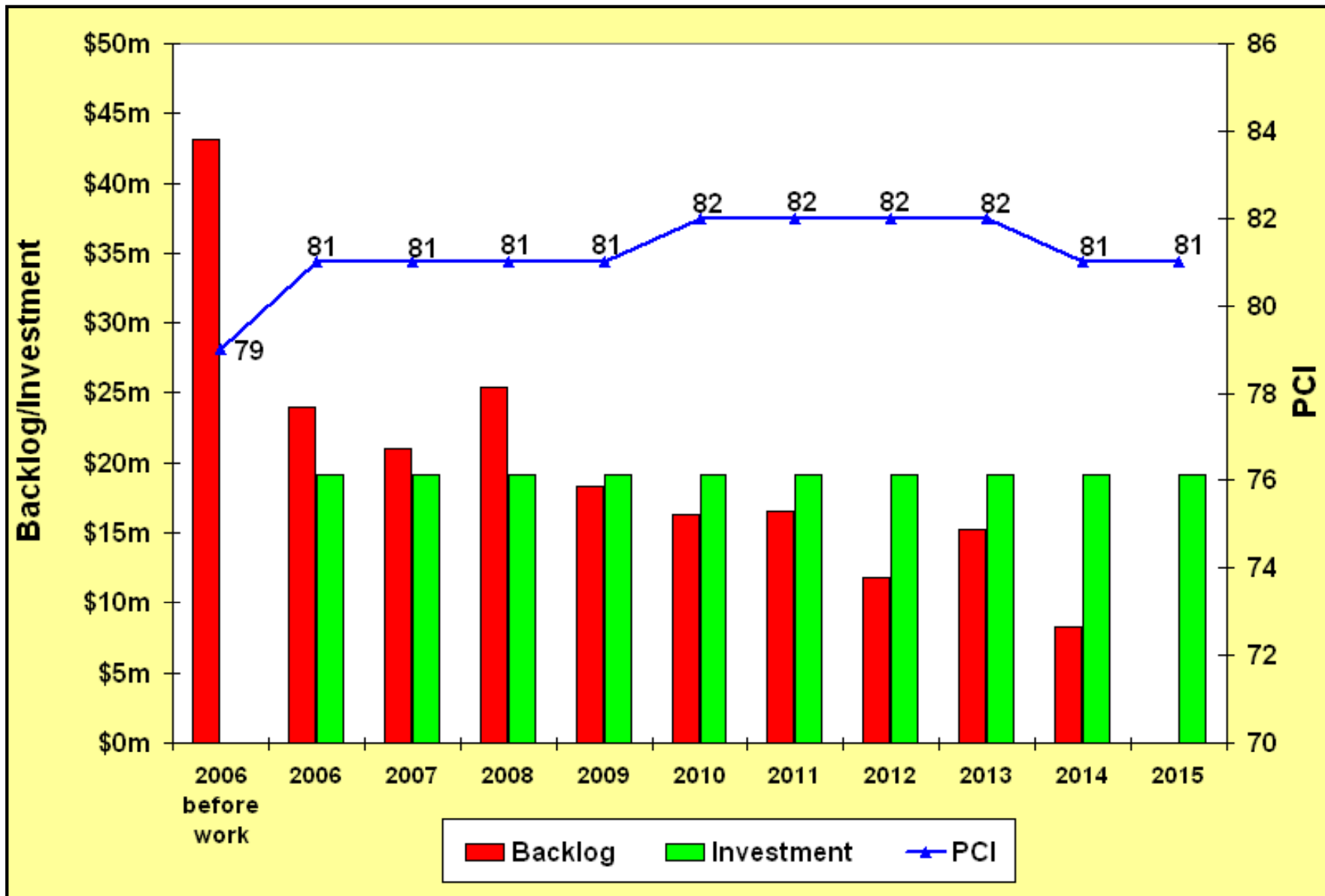


Time

Scenario 1: Ideal Budget

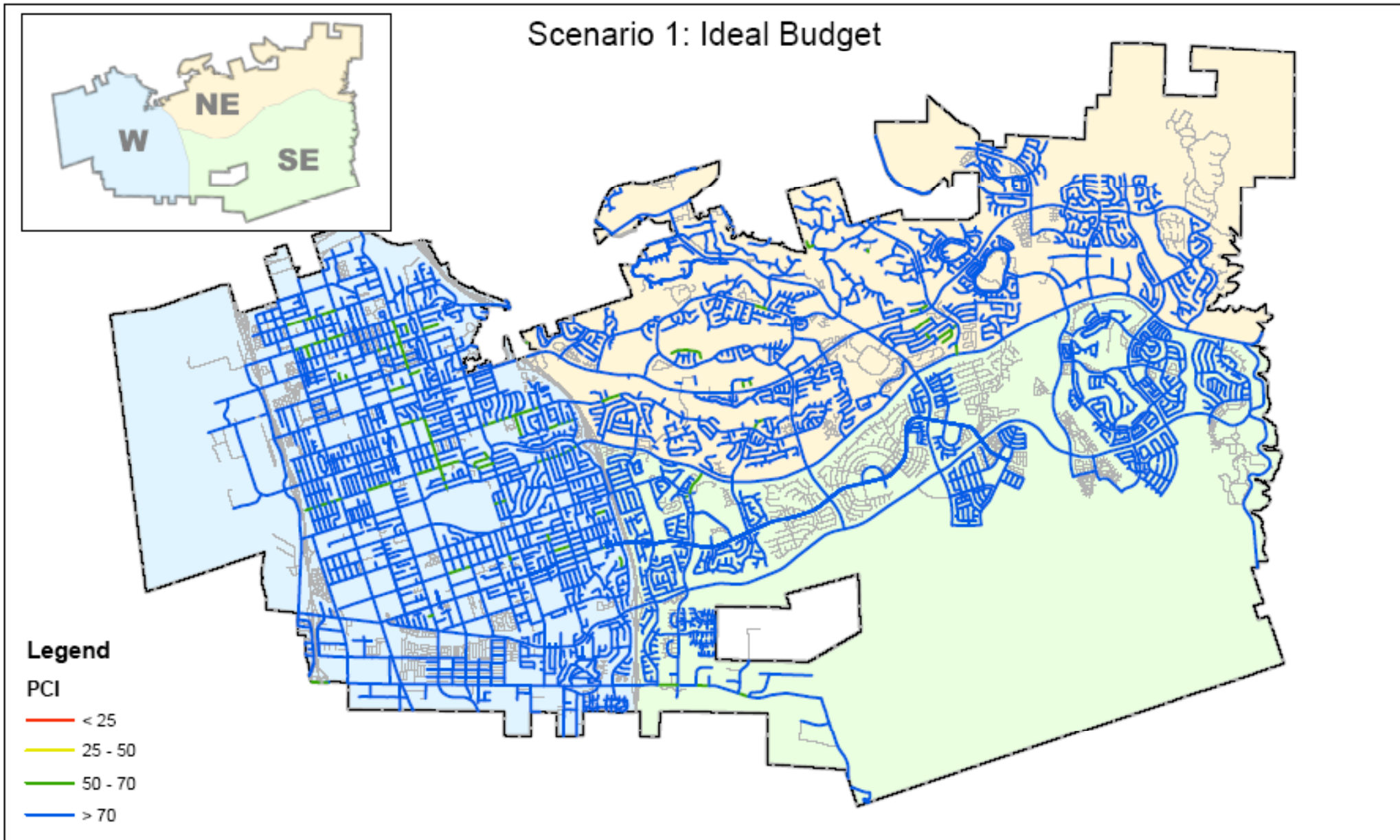
(\$19.2 m/year – Ending PCI is 81)

Backlog \$0

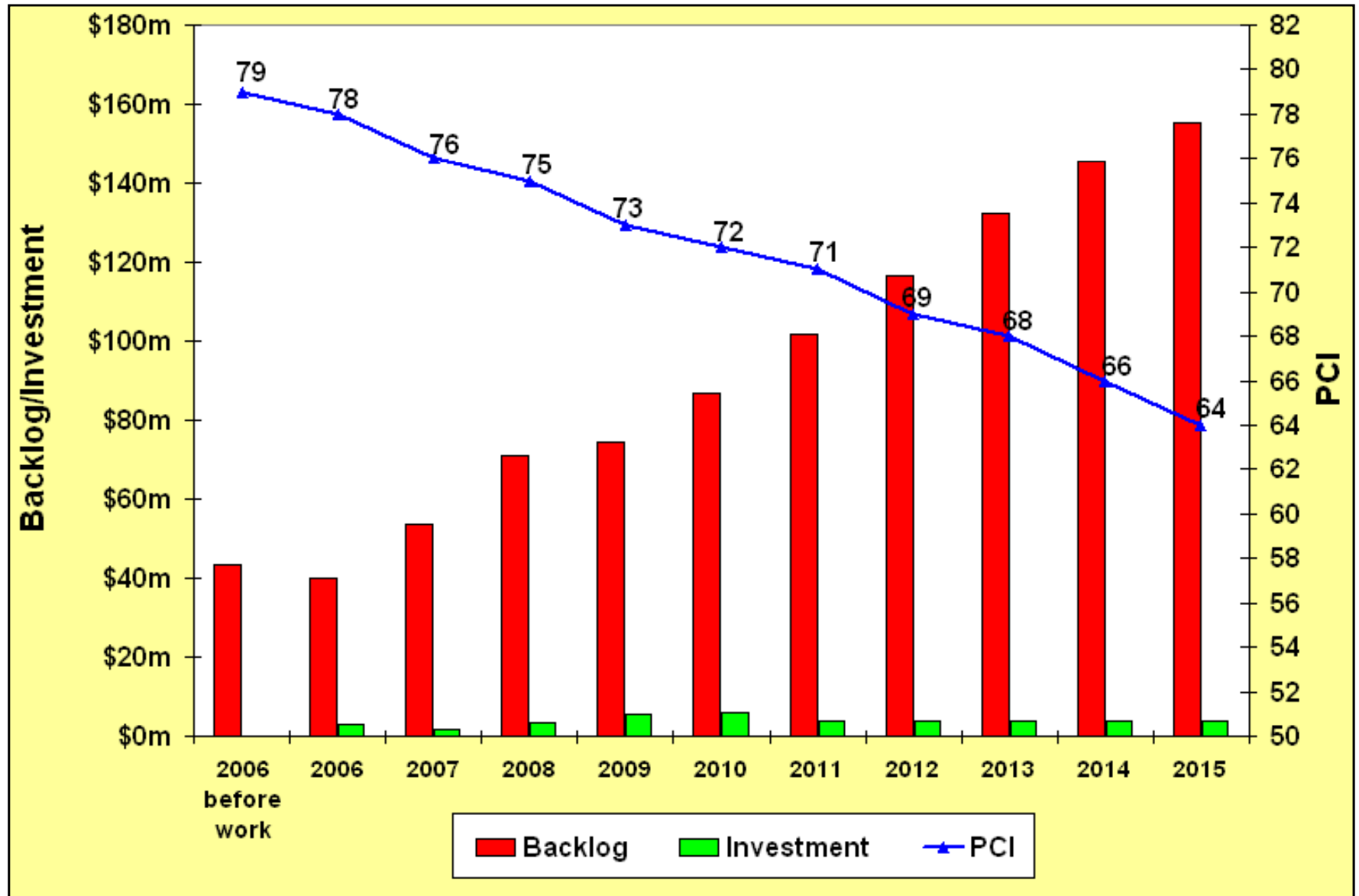


Scenario 1: Ideal Budget

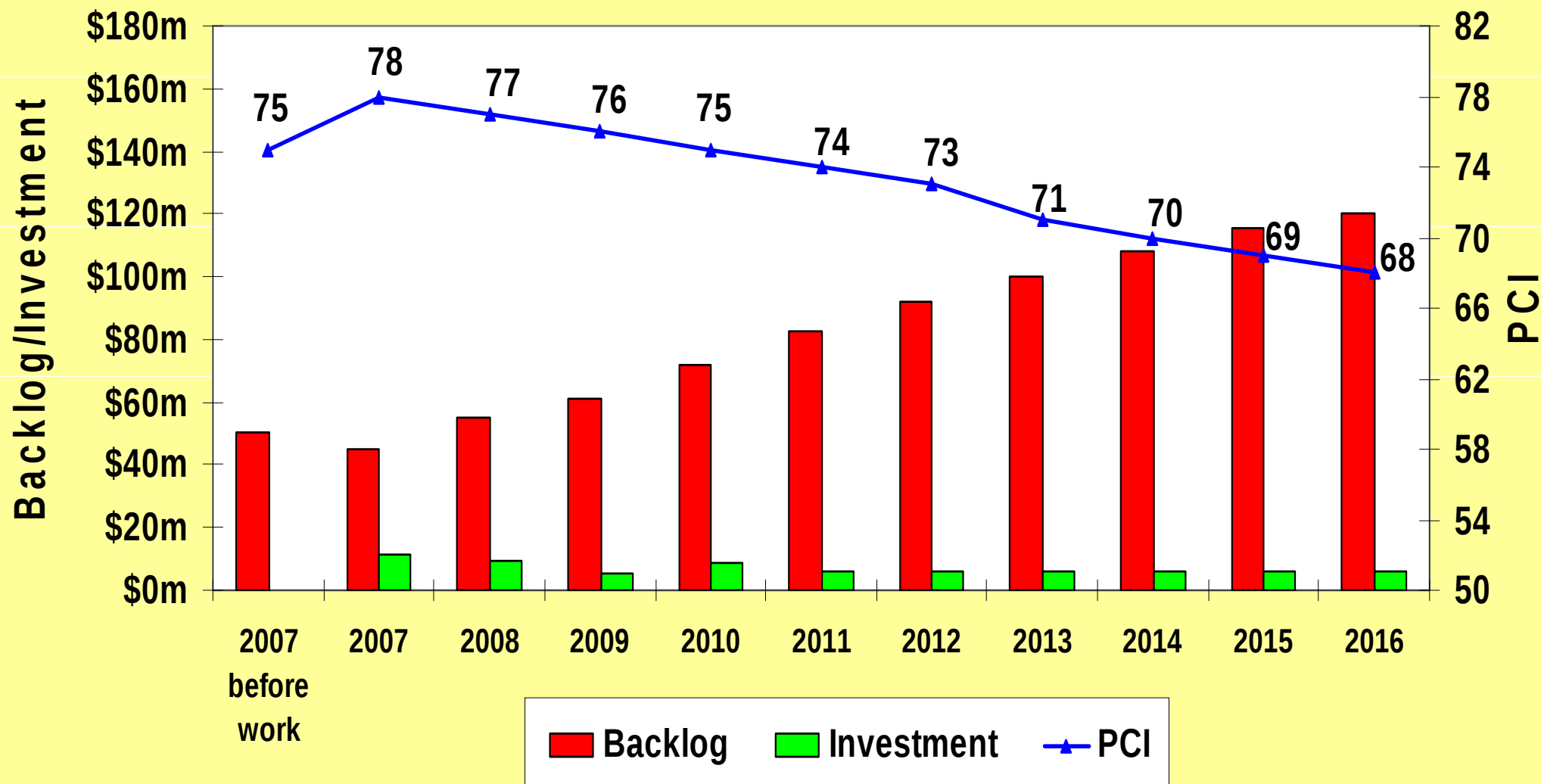
(\$19.2 m/year – Ending PCI is 81)



***Scenario 4: Existing Budget
(\$4 m/year – Ending PCI is 64)
Backlog: \$160 million***



Scenario 5: Recom. Budget: 2 year high (Ending PCI = 68 Backlog = \$115 million)



Conclusions

- City has pavement network in “good” condition
 - will deteriorate to “fair” under current budget
- With no change in funding, deferred maintenance will grow from \$43m to \$160m in 10 years
- Allocate sufficient funds to reduce deterioration
- Preserve good roads first!

The Case Against “Worst-First” Strategy

- Pavements typically selected for treatment are those that are closest to failure
- Quickly depletes available funding focusing on streets where most cost is already the case
- Meanwhile, acceptable streets slip into “needing major rehabilitation”
- Backlog quickly grows to a point of no recovery
- When funding constraints are present, preventative maintenance and worst-first strategies are incompatible

Drainage



What is “Drainage”?

- Pipes, culverts, channels (lined and natural), detention basins, etc. to manage urban runoff and provide flood control
- Mandated water quality best management practices (pre-treatment devices)
- Includes Corrugated Metal Pipe (CMP)



Drainage Assessment

Capacity



Condition



Drainage Challenges

- Lack of dedicated Federal, State and Regional funding
- City's 70¢/month/residence not adequate
- Continually increasing water quality mandates
- Flood control and maintenance requirements frequently conflict with regulatory agency requirements and procedures
- Projects are expensive, not widely understood, usually not seen as a high priority
- Last General Fund contribution: \$0.2 million in FY 2003

Priority Tiers

- ***CMP:***

Immediate red flags considered Priority 1 due to potential for catastrophic failure

- ***Priority 1:***

Frequent flooding and/or high chance of personal injury or property damage

- ***Priority 2:***

Occasional flooding with a chance of personal injury or property damage

- ***Priority 3:***

Frequent nuisance flooding

- ***Priority 4:***

Occasional nuisance flooding

- ***Priority 5:***

Frequent or routine maintenance manages problem, CIP project could eliminate problem

Recommended Drainage Priorities

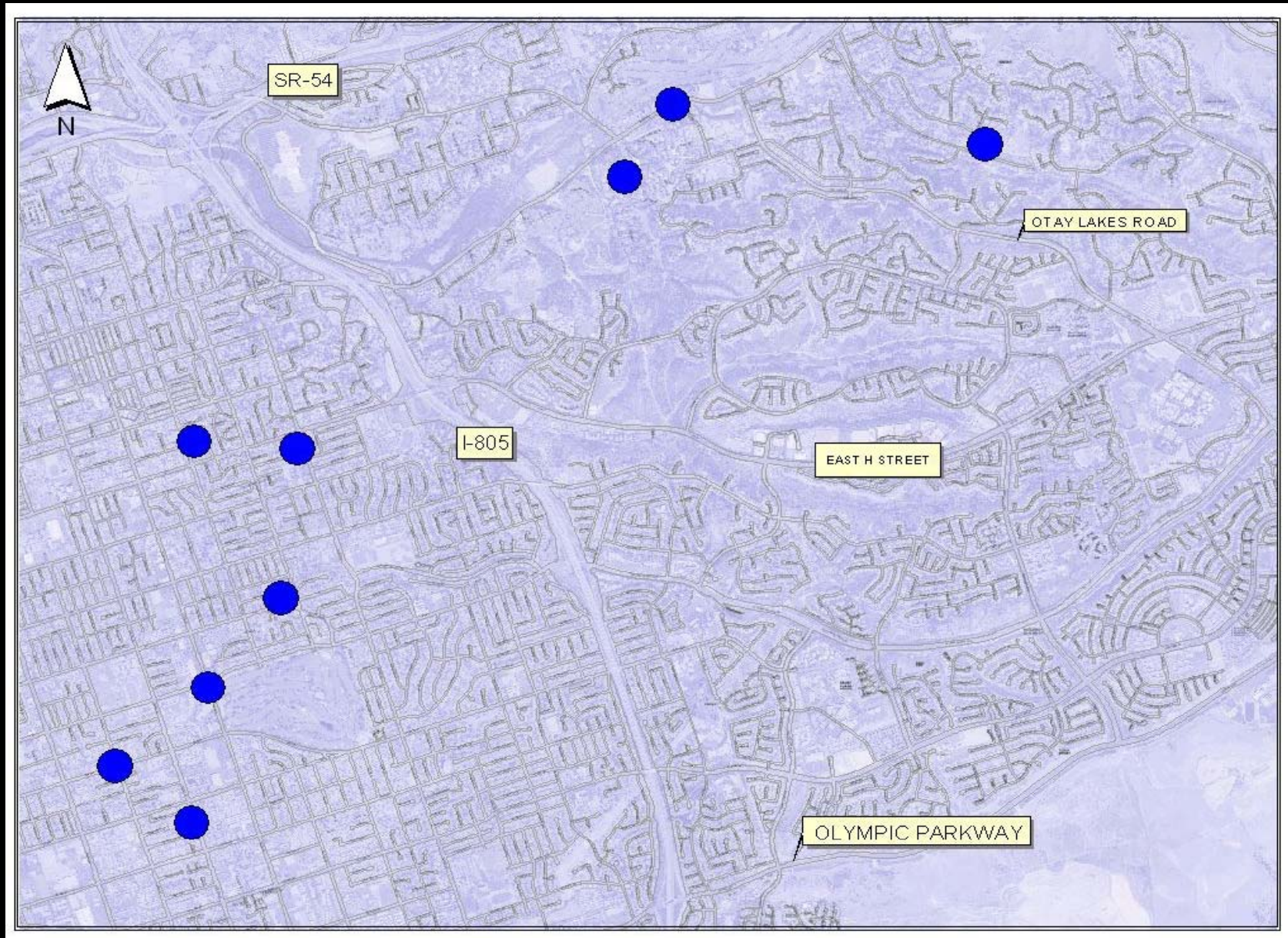
- *CMP Immediate Red Flags*: \$0.8 million
- *Priority 1 Tier*: 9 projects, \$24.4 million
 - Other CMP (\$28.2 million)
- *Priority 2 Tier*: 5 projects, \$4.4 to \$6.1 million
- *Priority 3 Tier*: 2 projects, \$0.3 to \$0.6 million
- *Priority 4 Tier*: 3 projects, \$1.6 to \$2.2 million
- *Priority 5 Tier*: 8 projects, \$1.3 to \$2.3 million; unable to estimate two projects

**Total Estimated Funding Gap =
\$61.0 to \$64.6 million**

Priority 1 Tier Drainage Projects

Location	Preliminary Cost Estimate (2006)
Bonita Basin: Bonita Road and Allen School Road	\$ 500,000
Bonita Basin: Canyon from Terra Nova to Bonita Road	\$ 3,900,000
Central Basin: East of Second, North of H	\$ 1,500,000 (funded)
Central Basin: Hilltop s/o H to Shasta	\$ 1,800,000
Long Canyon Basin: Canyon, Corral Canyon and East H to channel	\$ 4,600,000
Telegraph Canyon Basin: Country Club Drive culvert,channel and First Avenue culvert; Hilltop Park upstream of First and Millan; east of Hilltop, south of Telegraph Canyon	\$ 5,600,000
Telegraph Canyon Basin: Fourth to Third Avenue channel and L Street culvert	\$ 7,100,000
Telegraph Canyon Basin: Moss and Fifth	\$ 900,000
Telegraph Canyon Basin: Third and Emerson to 900' west	\$ 2,900,000 (funded)
Total Priority 1 Tier Unfunded Projects	\$24,400,000

Priority 1 Tier Drainage Project Locations





Funding Chula Vista's Infrastructure Needs

Historical Infrastructure Funding

- Pavement Funding
 - Transnet
 - Gas Tax
 - CDBG
 - Recently, Proposition 42
- Other Infrastructure Funding
 - Western Chula Vista Financing Program
 - Residential Construction Tax
 - Gas Tax
 - Storm Drain Revenue
 - Grant Funds

New Infrastructure Funding

- November's Infrastructure Bonds
 - Primarily Transportation
 - Already assumed within recommended pavement scenario
- Proposition 84
 - Small potential for drainage projects
 - Small potential for storm water projects

Dedicated non-municipal funding is not sufficient to meet growing need





Potential New Funding

- Vehicle Registration Fees (State legislation)
- Grants
- Federal Earmarks
- Local Bond Measure
- Local Sales Tax Increase (sunset clause)
- Tax Increment
- Citywide Assessment Districts

