



Maintenance and Operations

CTAC III

Tuesday, March 29, 2011



The State of the Infrastructure

Not Just a Local Issue

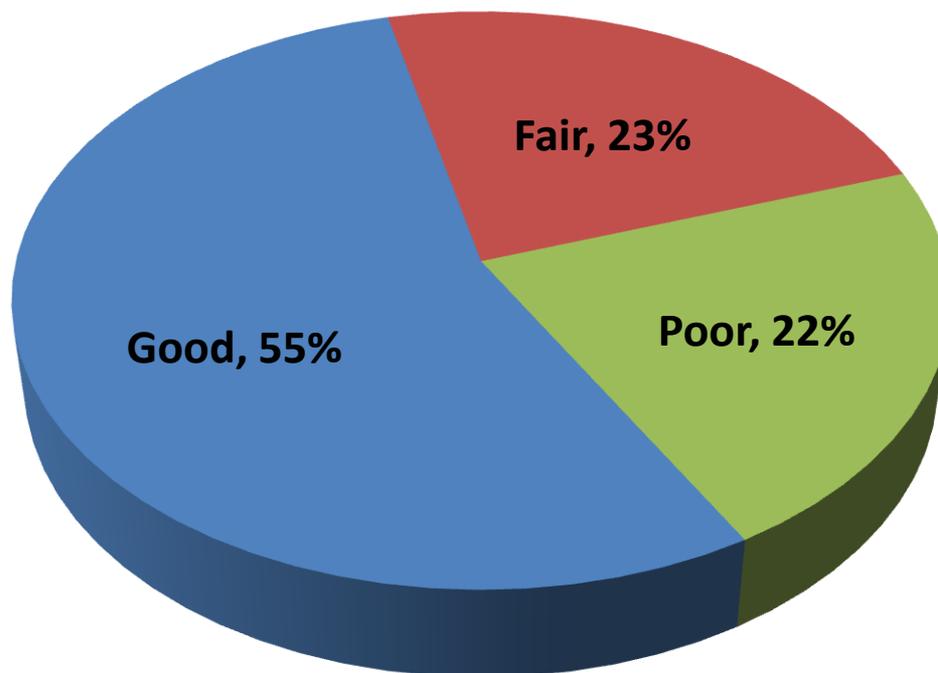
- “Our infrastructure used to be the best – but our lead has slipped. . . when our own engineers graded our nation’s infrastructure, they gave us a ‘D’.”
 - President Obama, 2011 State of the Union
- One third of Washington State’s major roads are in poor or mediocre condition.



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Seattle's Transportation Asset Condition

- Under current budget conditions, the percentage of transportation assets in poor condition gets larger
- This includes assets as large as bridges and as small as signals and guardrail

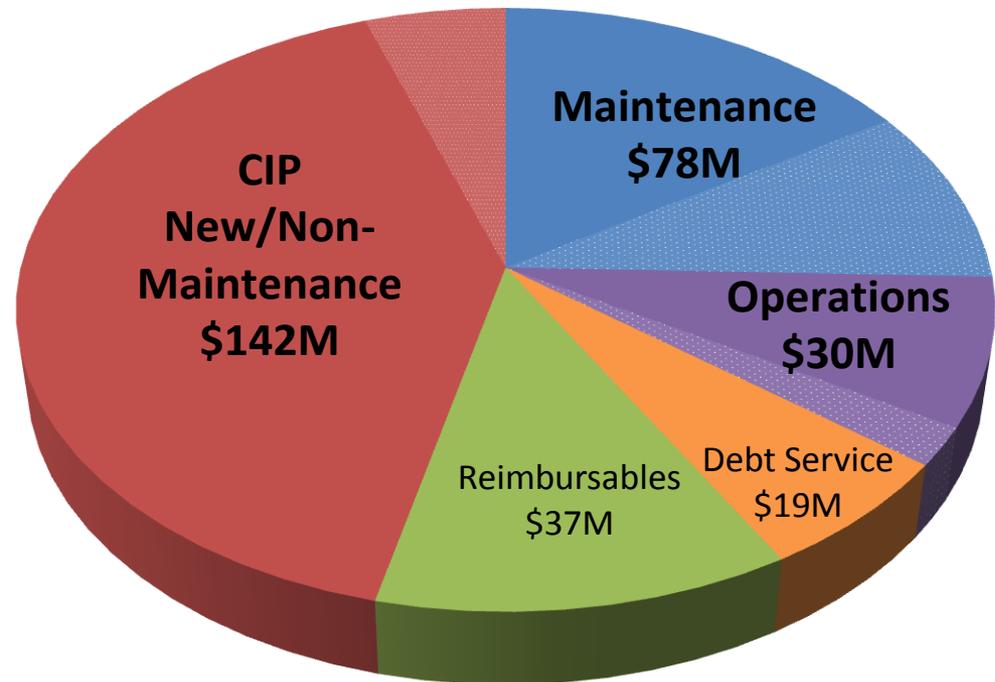




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SDOT's Maintenance Budget

- \$306 million total
- Approximately **46 percent** of the budget is new/non-maintenance capital projects
- Maintenance represents about **25 percent** of the budget
- Operations represents **10 percent** of the budget





Operations and Maintenance

- Operations keeps the system running and in good order on a daily basis. Examples:
 - Street sweeping
 - Signal timing
 - Moveable bridge operation
- Maintenance prevents and repairs damage and maintains the condition of the system. Examples:
 - Pothole filling
 - Lane line re-marking
 - Bridge replacement



SDOT's Maintenance Program

- Routine Maintenance – improves the operation of the asset, but not the condition
- Preventive Maintenance – performed on a regular schedule that extends the life of the asset
- Emergency, or Stop-Gap, Repair
- Major Maintenance - performed on an infrequent basis; complex maintenance that extends the life or improves the condition of the asset
- Reconstruction or Rebuild – resets the asset's lifecycle



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Pavement

- 3,948 miles of 12-foot-wide lanes of pavement
 - 1,534 arterial lane-miles
 - 2,414 non-arterial lane miles
- \$40.2 million maintenance spending for 2010
- 28 percent of Seattle's arterial streets are in poor or worse condition





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Pavement Maintenance Program

- For arterials
 - Routine maintenance – spot repair
 - Major maintenance - mill and overlay
 - Stop-gap repair – pothole repair
 - Reconstruction
- For non-arterials
 - Emergency repair only



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Pavement Condition Index

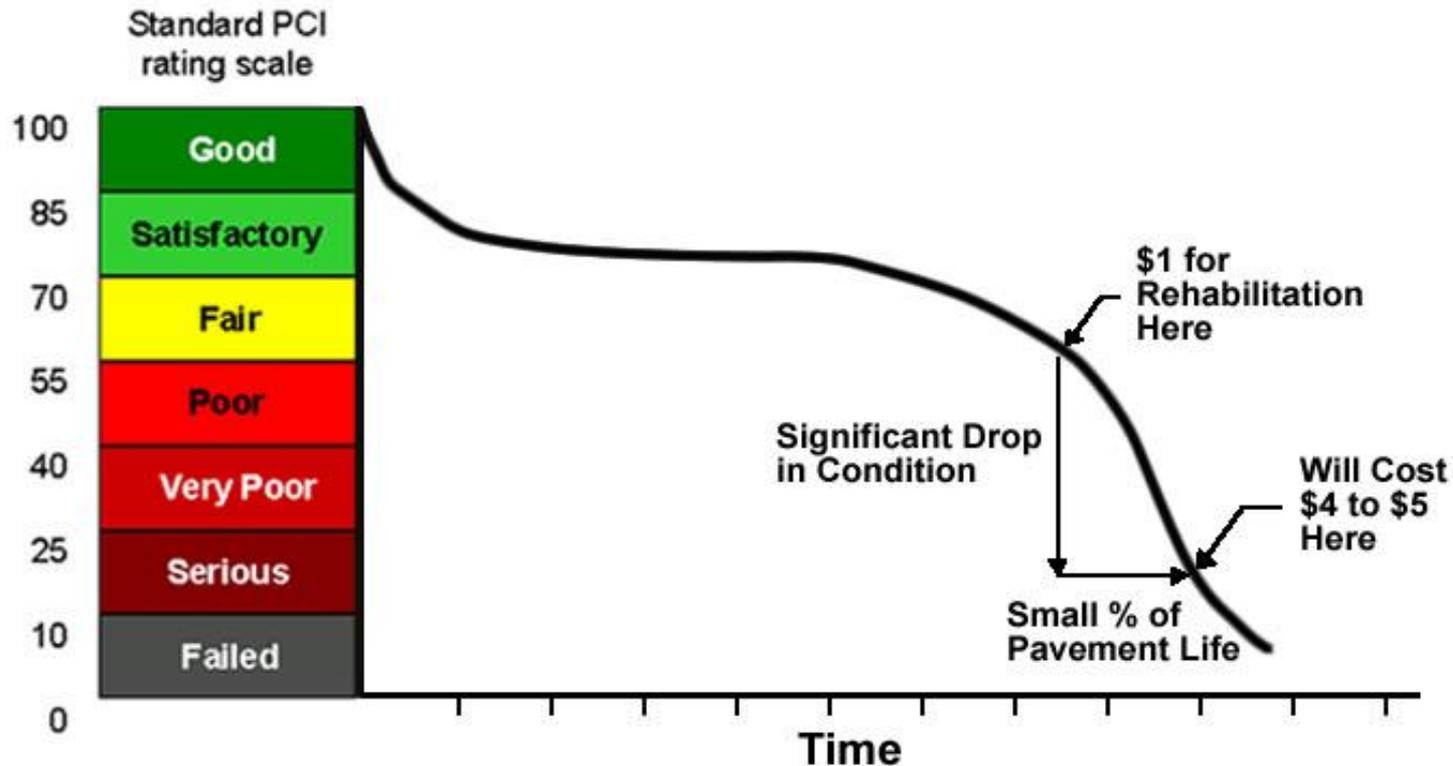
- National, standardized system of evaluating pavement condition
 - Pavement condition rating (PCR) – 0-100 scale
- Seattle's average PCR is 68.3 for arterials only.





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Pavement Deterioration Curve





Maintenance Continuum of Care

Why do the streets look like they do?

- Seattle funds stop-gap maintenance over preventive maintenance
- To respond to requests, Seattle frequently redirects preventive maintenance to fund stop-gap repairs
- Filling potholes does not improve the condition nor substantially prolong the life of pavement





Structures

Bridges

- 96 bridges
- \$26 million annual maintenance
 - 39 percent poor condition
- Maintenance Program
 - Annual backlog of structure defects is more than \$6.5 million
 - Major maintenance deferred stands at \$3.1 million per year
 - Rehabilitation and replacement backlog currently more than \$700 million
- Average age of bridges is 55.6 years





Signs

Regulatory, Warning and Street Name Signs

- Approximately 140,000 signs
- \$1.1 million annual maintenance
- No current condition rating
- Maintenance Program
 - Graffiti removal and cleaning
 - Damage replacement
 - 30-year replacement cycle on a 12-year lifecycle





Signal System

Traffic Signals

- 1,053 signals
- \$2.9 million annual maintenance
 - Annual backlog of maintenance is more than \$1.5 million
- 68 percent poor condition
- Maintenance Program
 - Preventative maintenance
 - Emergency repair
 - Signal intersection rebuild





Parking System

Pay Stations

- 2,200 pay stations
- \$4.0 million annual maintenance
- Maintenance Program
 - Preventative maintenance
 - Emergency repair
 - Replacement
- Upcoming capital replacement:
 - Approaching 10-year lifecycle
 - \$4-9 million annual replacement cost

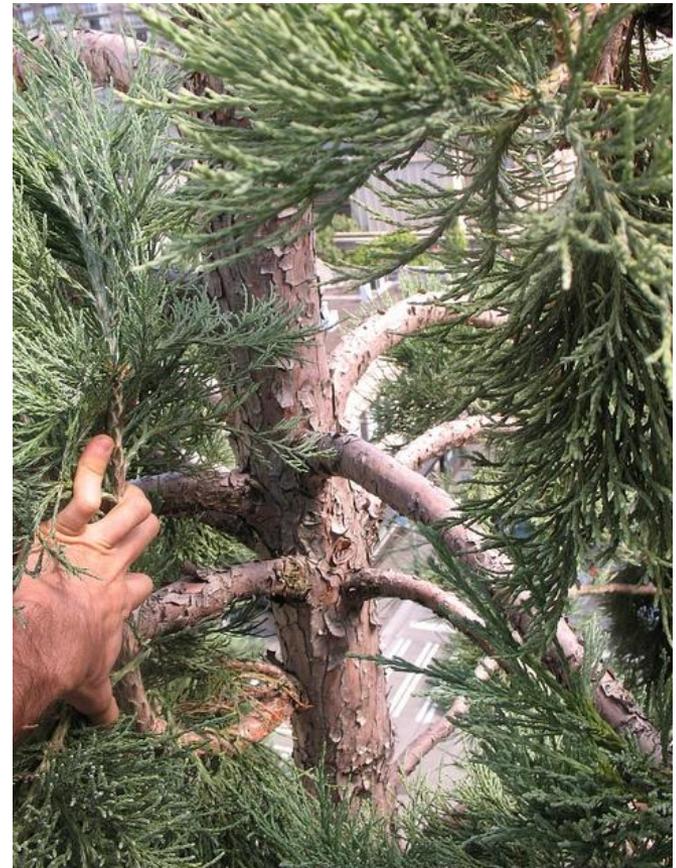




Urban Forest and Landscaping

Landscaped Complexes

- 206 landscaped areas
- \$1.9 million annual maintenance
- 33 percent abandoned due to lack of maintenance funds
- Maintenance Program
 - Litter pick-up
 - Weeding, pruning
 - Replanting/rebuilding





Operating the Infrastructure

Examples of Operations Activities

- Staffing bascule bridges
- Plowing snow
- Responding to citizen traffic concerns
- Timing signal corridors
- Programming pay stations
- Permitting special events





Operating the Infrastructure

Arterial Street Operations

- 550 citizen concerns annually
 - 220 investigations should result in operations change
- \$690,000 2011 budget
 - 550 investigations
 - 40 improvements
- As budgets decrease, the number of investigations remains constant; number of improvements must decrease, resulting in a backlog





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The Result to the Taxpayer

- Asset Management paints a clear picture of maintenance needs
- \$108 million in maintenance and operations
 - More than half is major maintenance, concentrated in paving and bridge rehabilitation funding from BTG
- Remaining funding allows us to chase complaints and little else
 - Little funding for programmed maintenance of assets
 - Little funding for operations changes based on priorities.