SDOT's Asset Management Strategy:
Pavement Management System Overview

City Council Transportation Committee

April 16, 2024

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Our Vision, Mission, Values, & Goals

Seattle is a thriving equitable community powered by dependable transportation. We're on a mission to deliver a transportation system that provides safe and affordable access to places and opportunities.

Core Values & Goals:

Equity, Safety, Mobility, Sustainability, Livability, and Excellence.

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Presentation overview

- Asset Management Strategy
- Pavement Management System & Principles
- Street network overview
- Seattle pavement type and condition
- Preservation strategy
- Delivery mechanisms

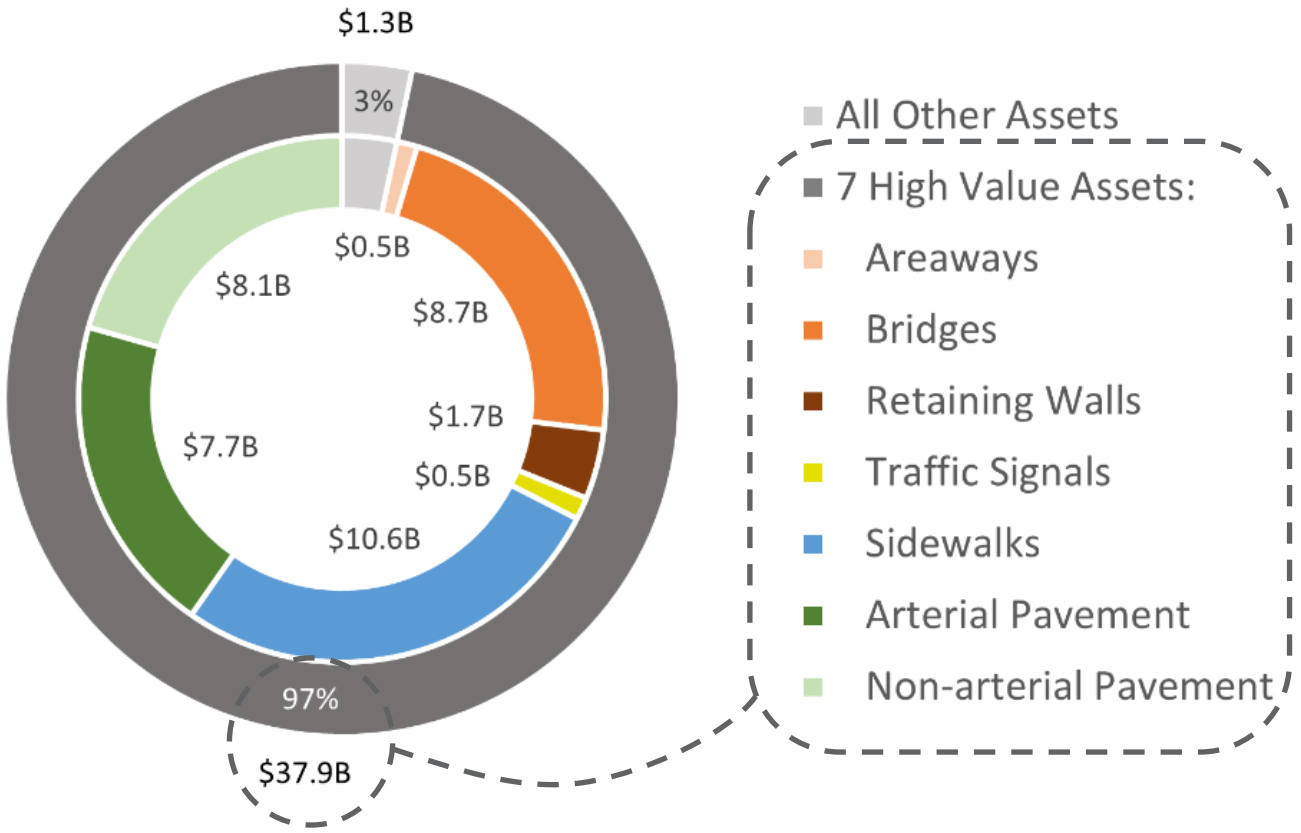
Reminder: SDOT Asset Management Strategy

Seattle's transportation infrastructure is complex, diverse, and includes the following assets:

- **1,548 lane-miles** of arterial streets
- **2,396 lane-miles** of non-arterial streets
- **2,293 miles** of sidewalks ✓
- **135 bridges** ✓
- **584** stairways
- **537** retaining walls
- **2.2 miles** of seawalls
- **1,132** signalized intersections
- **47.9 miles** of multi-purpose trails
- **165 miles** of on-street bicycle facilities
- **39,049** street trees
- **1,589** pay stations
- **35,872** curb ramps
- **203,000** signs

✓ Recent Transportation Committee presentations

Replacement value



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Pavement Management System & Principles

Overview of Pavement Management System

- Collect asset and condition information
- Develop preservation strategy
- Predict network condition based on funding scenarios
- Recommend **the right treatment right time** at a network level

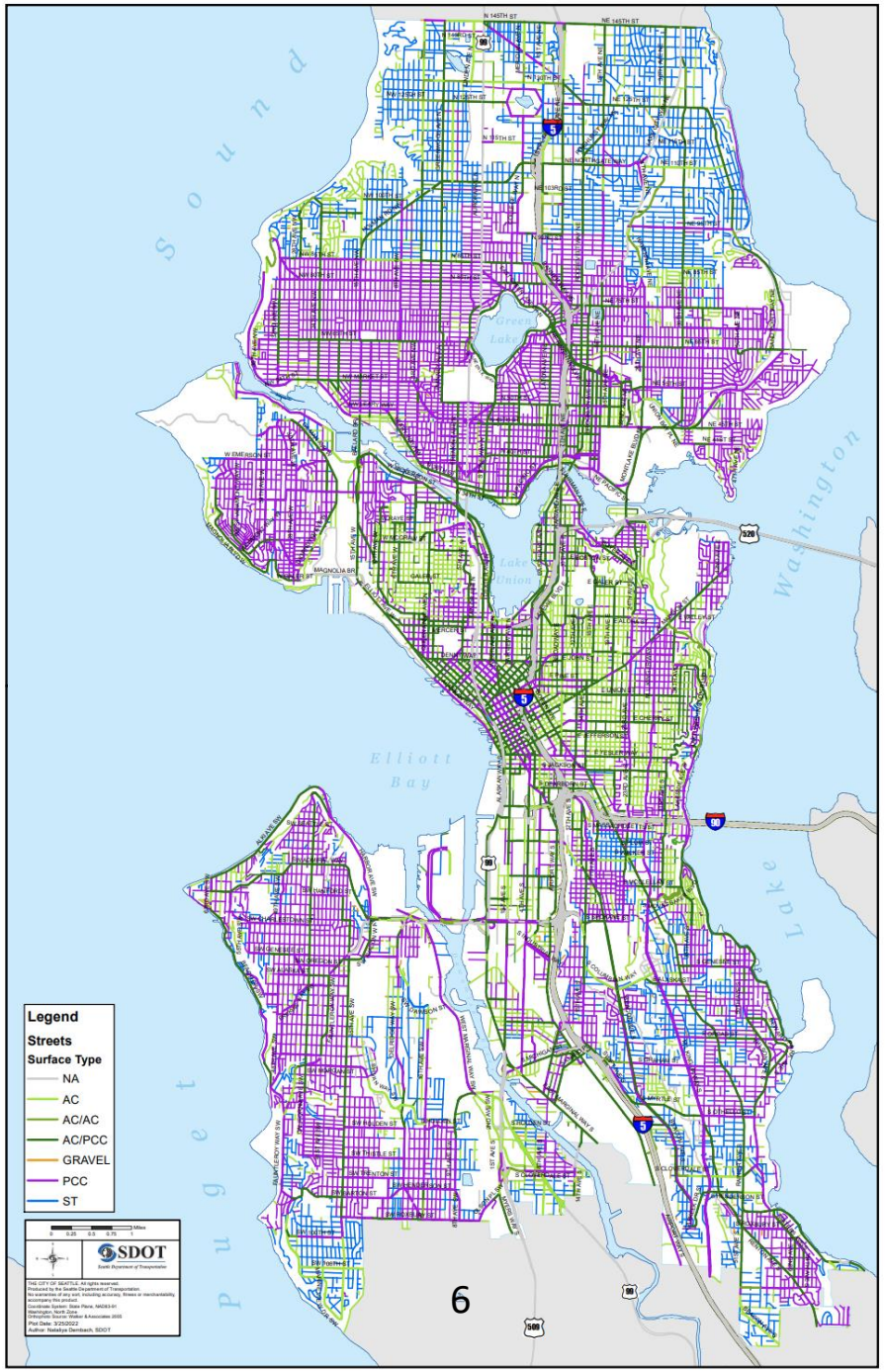
Seattle's Pavement Management System

- Transition to StreetSaver pre-2000
- Continue routine inspections on arterials and less frequent non-arterial inspections
- Consider other City policies
- Select the right preservation method

Distribution of pavement types

Table 1. Pavement Area by Functional Classification and Surface Type

Pavement Surface Type and Pavement Management System Identifier	*Arterial Streets*		Non-arterial Streets		All Streets	
	Area (12′ lane-miles)	*Fraction*	Area (12′ lane-miles)	Fraction	Area (12′ lane-miles)	Fraction
Asphalt Flexible (AC, AC/AC)	*132*	*8.5%*	558 [1]	23.3% [1]	690	17.5%
Portland Cement Concrete Rigid (PCC)	*562*	*36.3%*	1,264	52.8%	1,826	46.3%
Composite (AC/PCC)	*846*	*54.6%*	9 [1]	0.4% [1]	855	21.7%
Bituminous Surface Treatment – Chip Seal or Microsurfacing (ST)	*7*	*0.5%*	545	22.7%	552	14.0%
Stone Block or Other (O)	*1*	*0.1%*	10	0.4%	11	0.3%
Gravel (GR)	---	---	10	0.4%	10	0.2%
TOTAL	***1,548***	***39.2%***	**2,396**	**60.8%**	**3,944**	**100.0%**



Pavement types in Seattle

Asphalt Concrete

- Asphalt flexible (AC) pavement on 16th Ave SW in Riverview

Portland Cement Concrete

- Rigid concrete (PCC) pavement on SW Barton St in Roxhill.

Composite Surface

- Asphalt over jointed plain concrete composite (AC/PCC) pavement on 15th Ave S in Beacon Hill.

Bituminous Surface Treatment

- Slurry seal bituminous surface treatment (BST) pavement in Wedgwood.

Stone Block

- Stone block or sett (sometimes referred to as "cobblestone") other (O) pavement on E Blaine St in Queen Anne.

Dirt / Gravel

- Dirt or gravel (G) pavement on S Chicago St in South Park. Recently paved with SDOT/SPU South Park partnership project.

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Pavement condition

Good

Poor

Serious

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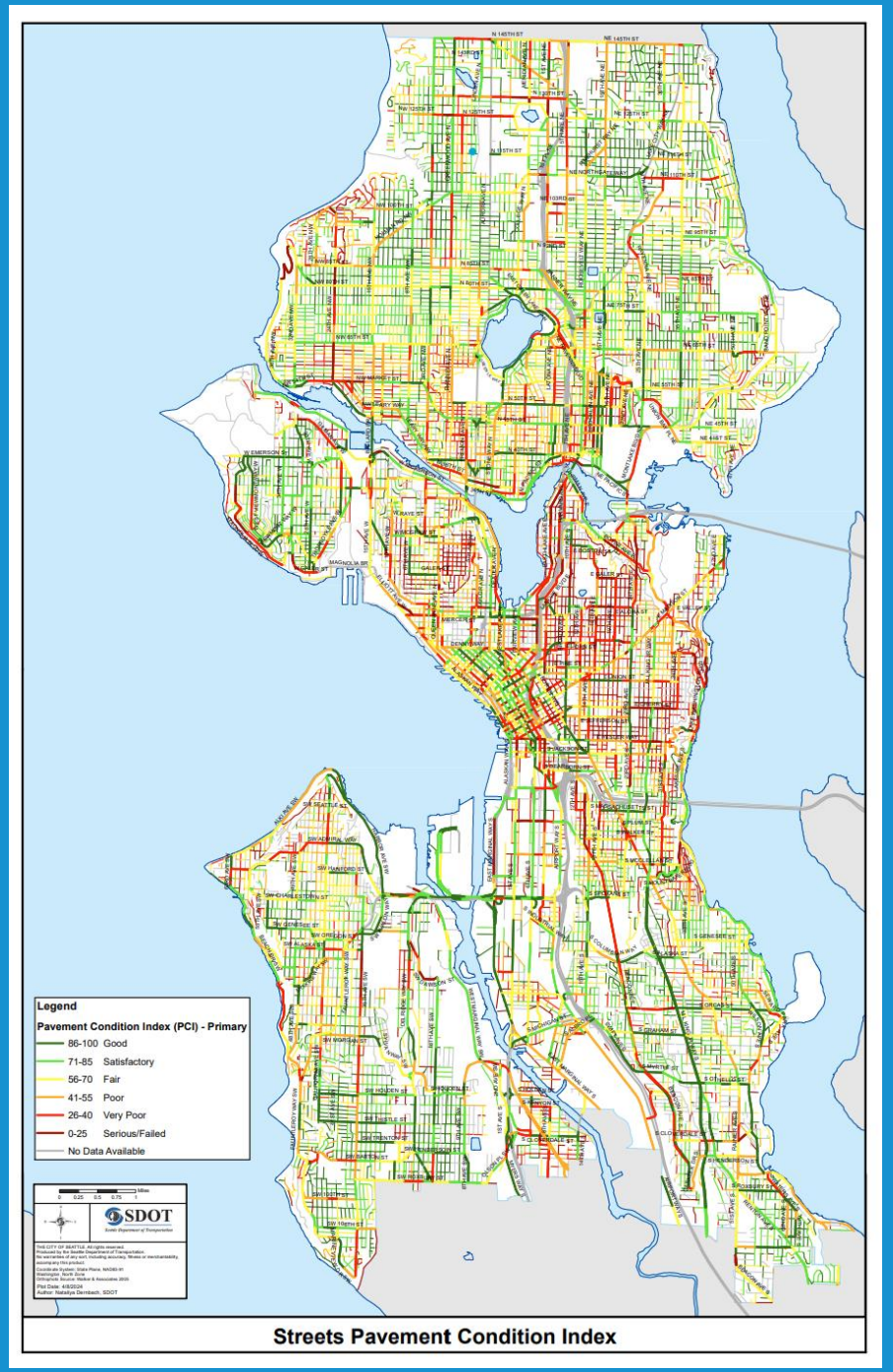
Seattle's pavement condition



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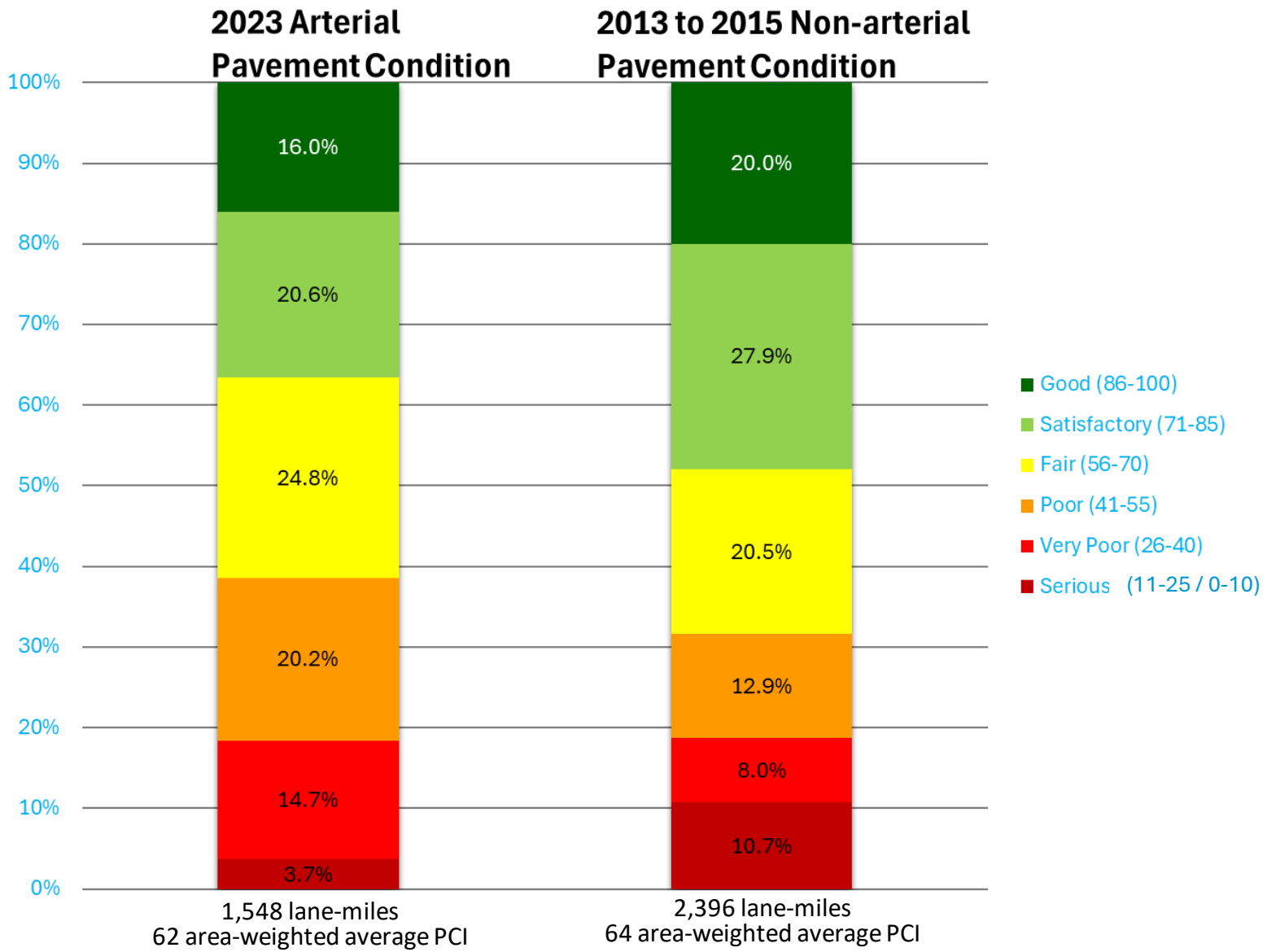
Seattle's pavement condition



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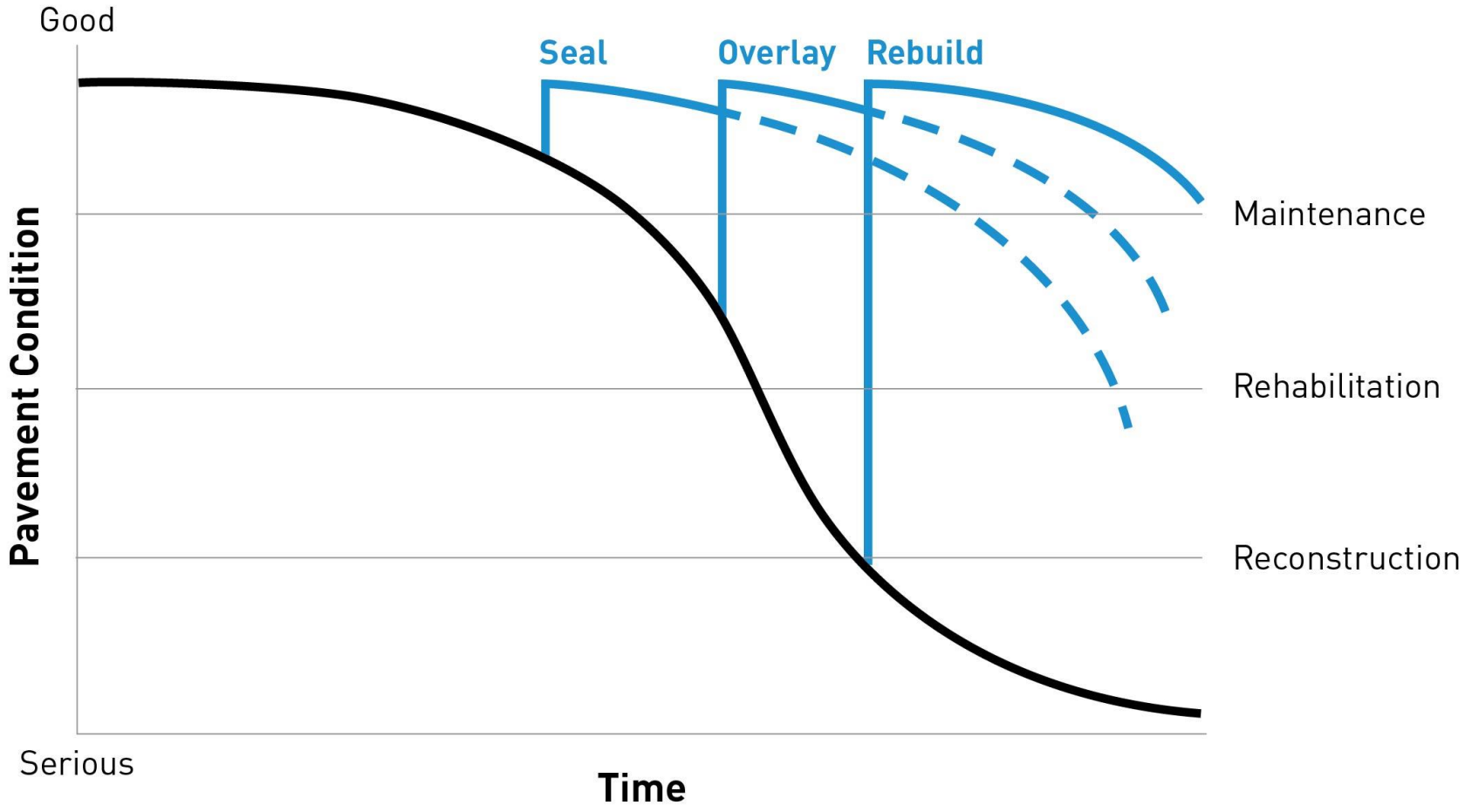
Preservation strategy - Maintenance treatments

Pavement Condition Rating	Pavement Condition Index	Typical Maintenance Treatment	Examples
Good	100-86	Preventive maintenance	Do nothing
Satisfactory	85-71		Slurry seal / Crack seal
Fair	70-56	Major maintenance / minor rehabilitation	Asphalt Overlay Select concrete panel replacement
Poor	55-41		
Very Poor	40-26	Major rehabilitation / reconstruction	Partial or full reconstruction
Serious	25-0		

Preservation strategy



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Project example – Preventive maintenance

- Crew and Contractor delivered
- Streets in fair/satisfactory condition
- Time driven, annual grid approach
- Slurry Seal and Crack Seal
- Surface treatment with isolated structural repairs
- Life extension 1 to 10 years

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Project examples – Major Maintenance / Minor Rehabilitation

- Crew or contractor delivered
- Streets in fair to poor condition
- Condition driven
- Asphalt overlay
- Addresses some structural damage
- Life extension 1 to 15 years

NE Northlake Way & 8th Ave NE- Before

NE Northlake Way & 8th Ave NE- After

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Project examples – Major Maintenance / Minor Rehabilitation

- Crew or contractor delivered
- Streets in fair to poor condition
- Condition driven
- Select concrete panel replacement or asphalt overlays
- Minimal subgrade repairs
- Life extension 1 to 15 years

Delridge Way SW & SW Juneau St- Before

Delridge Way SW & SW Juneau St- After

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Project example – Major rehabilitation / reconstruction

- Contractor delivered
- Streets in very poor or serious condition
- Concrete or asphalt reconstruction of the pavement and underlying base.
- Condition driven, lifecycle of asset has expired
- Rebuild; reimagine corridor
- Addresses structural damage
- Life extension 30-50 years, asset lifecycle reset

E Marginal Way Corridor Improvement Project
Critical for heavy haul freight and bike connection

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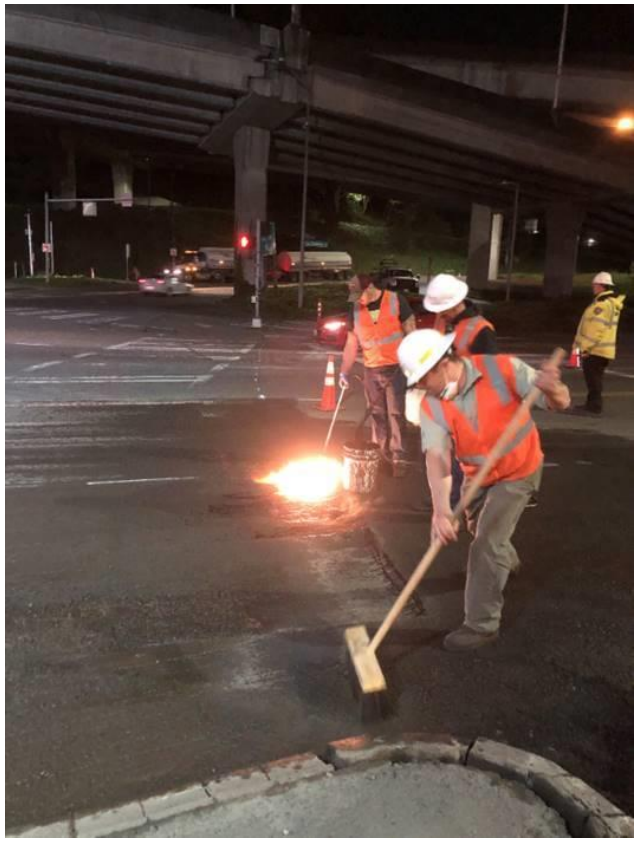
Project example – Stop gap pothole repair

- Crew response
- Streets in very poor or serious condition or isolated defects
- Customer driven
- Pothole repairs
- Temporary repair, does not repair structural damage
- Life extension 0 years; reoccurring

Crews repairing potholes

Project example – Surface Overlay

- Crew delivered
- Streets in very poor or serious condition or isolated defects
- Customer driven
- Large areas of potholes
- Temporary repair, does not repair structural damage
- Life extension 0 years; reoccurring



Crews completing overlay

Delivery teams

Right of Way Maintenance & Urban Forestry

- Crew response
- Geographic area
- First response to pavement issues
- Stop gap response (pothole filling, road closures, warning signs, etc.)

Pavement, Signs, and Markings

- Crew response
- Project based
- Second response to pavement issues
- Planned reactive maintenance (panel replacement, small scale overlays)

Capital Projects

- Contractor delivered
- Project based
- Long-term response
- Pavement management (rehabilitation, rebuild)

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Delivery mechanisms

- Crews deliver 7-8 lane miles and 60+ spot improvements annually
- Slurry Seal contractors deliver 30-40 lane miles annually
- Arterial Asphalt and Concrete delivers large preservation and reconstruction through Capital Projects
- Crews manage stop gap efforts such as pothole repair

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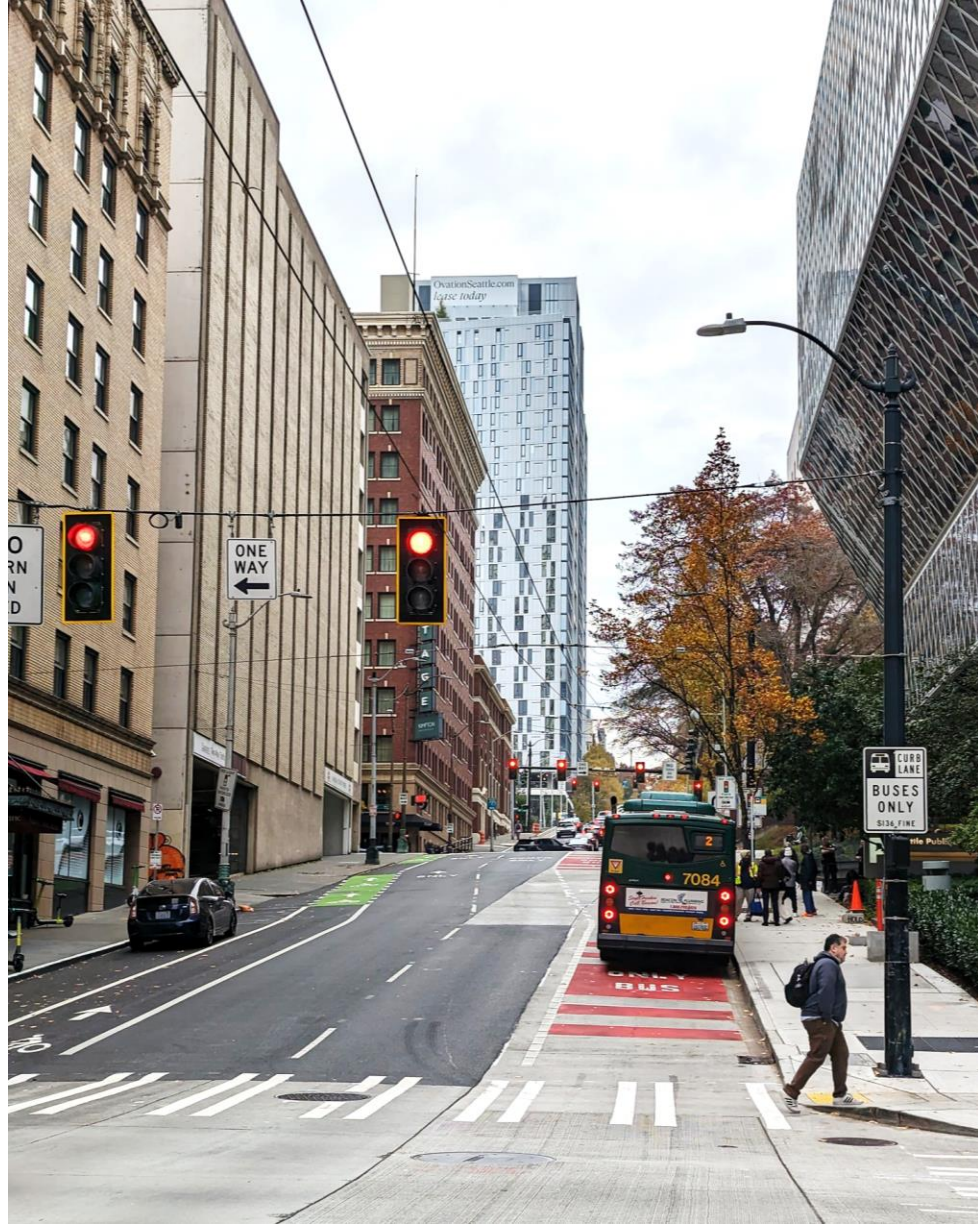
Historical paving investments

Source	Total Investment (local, leverage, & levy)	Lane Miles
Bridging the Gap (2007- 2015)	$250,477,000	293
Levy to Move Seattle (2016-2024)	$301,336,157	250
Total	$551,813,157	543



Madison RapidRide G

* Costs to deliver lane miles varies depending on maintenance treatment and location.

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Questions & Comments

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