

Pavement Management in Medium and Large Cities

Washington Transportation Commission
December 14, 2016



More and more cities have made pavement management a priority and are raising local revenues to pay for it



- Approved by Seattle voters in 2015 (replacement levy)
- 9 year property tax levy will cost median Seattle household \$275 per year
- Includes funding to repave up to 180 lane-miles of arterial streets, maintaining and modernizing **35% of Seattle's busiest** streets



More and more cities have made pavement management a priority and are raising new local revenues to pay for it (cont.)

Spokane Streets Levy

- Approved by Spokane voters in 2014
- Will support \$25 million in street improvements annually
- Funding will allow Spokane to upgrade all 266 miles of arterials to a good condition and maintain them there throughout the 20 years. Work will include everything from major reconstruction to sealing cracks.
- Other dollars, including those generated through the vehicle license tab fee, will be dedicated to repairs on residential and other non-arterial streets.



More and more cities have made pavement management a priority and are raising new local revenues to pay for it (cont.)

TACOMA STREETS INITIATIVE

- Adopted by Tacoma voters in 2015
- 10-year increase in property tax, utility tax and sales tax (TBD)
- Projected to generate \$175 million of new revenue and leverage an estimated \$120 million in grants and matching funds. City will commit an additional \$30 million. Total of \$325 million for Tacoma's streets over 10 years.
- Will more than double street maintenance budget



More and more cities have made pavement management a priority and are raising new local revenues to pay for it (cont.)

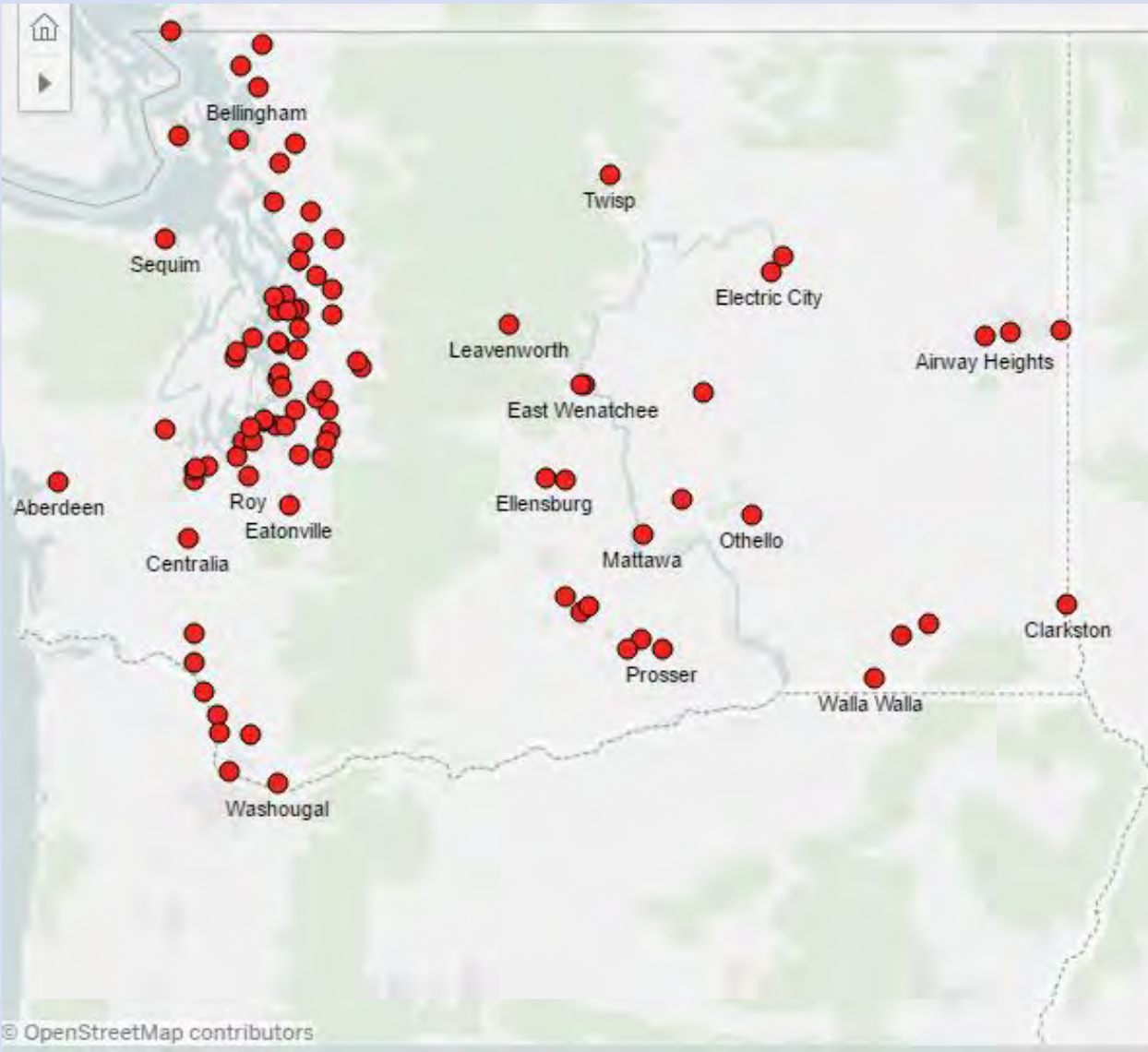
Vancouver Street Funding Strategy -

- Adopted by City Council 2015
- \$20 Vehicle license fee (increases to \$40 in 2018), \$10 increase in business license fees (increases to \$20 in 2018), 1.5% increase of utility tax
- Will generate \$7.6 million per year by 2019
- Improve pavement condition from Fair to Good citywide (1800 lane miles) by 2034



At least 90 cities and towns have adopted Transportation Benefit Districts

Map from MRSC.org



Challenges in compiling and reporting meaningful statewide pavement data for medium and large cities

- **It's A LOT of data, and there's no dedicated resources to compile it**
- Federal Performance Measures are likely to require a different pavement rating system for Principal Arterials (all of which are now part of the National Highway System)
- **Medium and large cities don't all use the same rating system** - Are we comparing apples to apples?
- The state gas tax is a shrinking share of transportation revenue for many cities
- Cities adopt their own priorities for the condition of their streets





SDOT ASSET MANAGEMENT

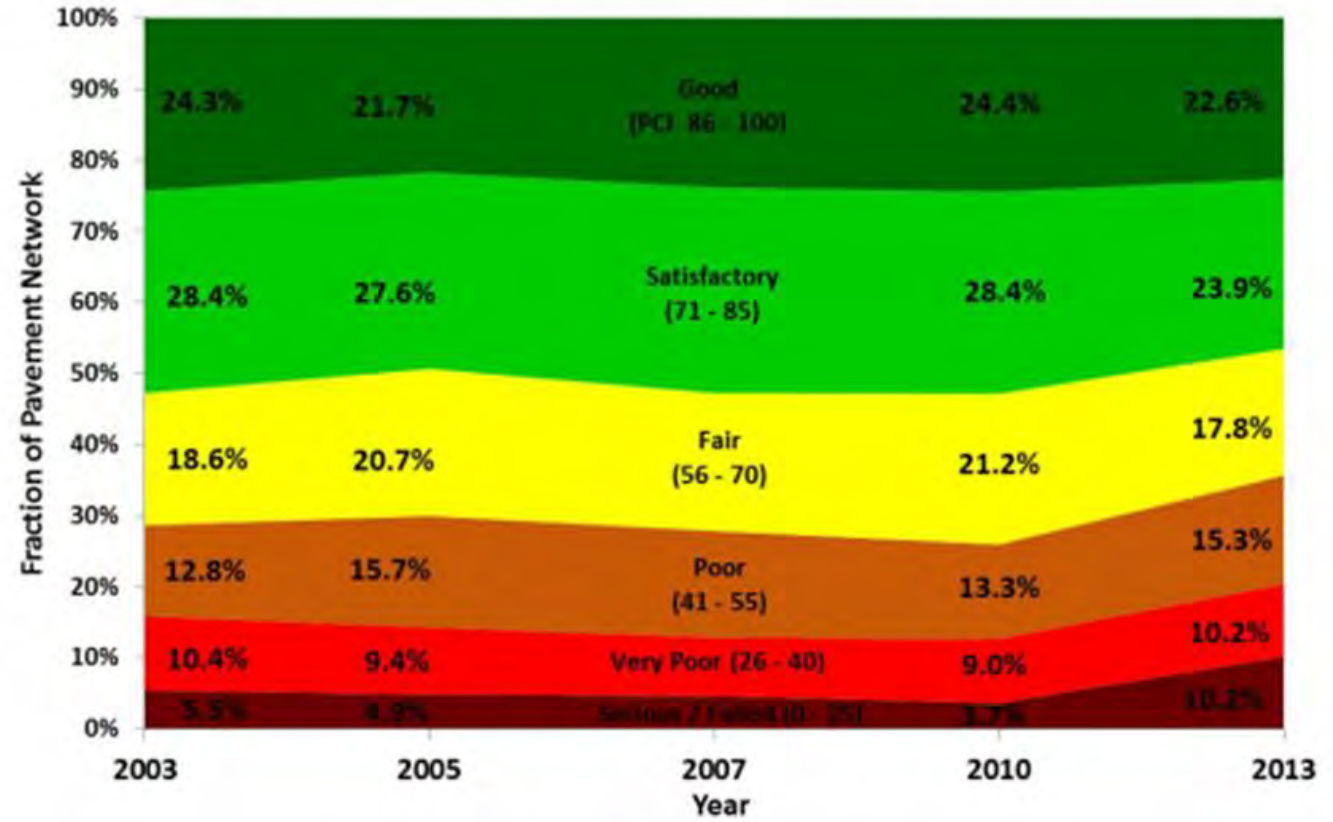
Status and Condition Report

Asset	Replacement Value	Condition				Data Confidence
		Good	Fair	Poor	Unk	
Arterial Pavement	\$4,678,000,000	46.5%	17.8%	35.7%	-	High
Non-Arterial Pavement	\$3,884,000,000	60%	11%	14%	15%	Medium
Total:	\$8.562 Billion					

Functional Classification	Pavement Area (12-ft Lane Miles)	Fraction of Network
Principal Arterial	627	40%
Minor Arterial	569	37%
Collector Arterial	351	23%



Figure VIII: Arterial Pavement Condition Ratings 2003-2014



Arterial Average Pavement Condition Index (PCI)				
2003	2005	2007	2010	2013
67.5	66.5	68.3	68.8	63.8



Maintenance & Repair



11% increase in traveler miles on pavement in fair or better condition due to the Levy to Move Seattle by 2025

This goal is measured by tracking the % increase in all people (using cars, buses, and trucks) travelling on pavement in fair or better condition | [Explore the data](#)

1.3 (% increase in traveler miles on fair or better pavement)

Current as of Sep 2016

11 (% increase in traveler miles on fair or better pavement)
Dec 2024 Target



On Track

Show chart



TACOMA Streets Initiative

In 2015 Tacoma voters said YES! to repairing Tacoma's streets and passed [Proposition 3](#) and [Proposition A](#)

Funds Raised

\$27.8M

[Streets Initiative Funding](#)

Maintenance Allocation

\$8.3M


[What is Maintenance?](#)

Capital Allocation

\$19.5M

[What is Capital?](#)

Funds Raised

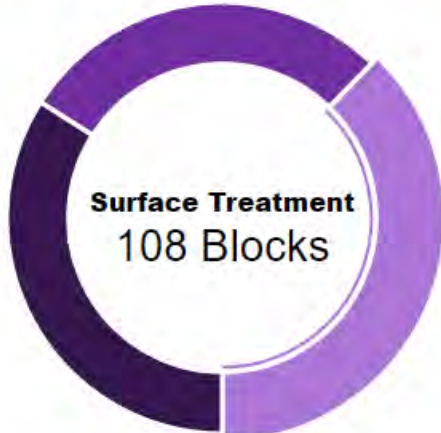


Property Tax

\$2.1M

[Fund Descriptions](#) [View Data](#)

Maintenance Performance




Surface Treatment

108 Blocks

[Performance Descriptions](#) [View Data](#)

Capital Performance



Design

6

[Program Descriptions](#) [View Data](#)



More about the Pavement Management Program



Time, traffic and weather take their toll on all pavement surfaces. For more than 20 years, Vancouver's leaders have supported a Pavement Management Program that provides safer driving conditions and extends the life of our streets.

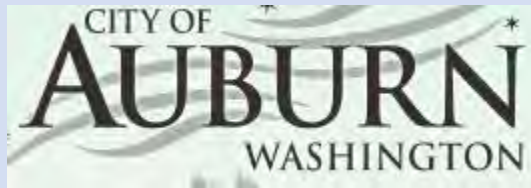
The City of Vancouver can resurface approximately 20-25 miles of roadway each year, based on current funding levels. The two most common types of resurfacing treatments are slurry seal and asphalt overlay. These treatments preserve and replace the street surface. Both extend the life of the roadway and may look similar when done, but, as the chart below shows, offer distinct differences that can be targeted to

specific street needs. Through our Pavement Management Program, we can choose the best method for protecting our transportation needs.

The Path to Selection: How the Streets and Treatments are Chosen

Streets included in our annual resurfacing projects are carefully evaluated and inspected under the guidelines of our Pavement Management Program. The City of Vancouver maintains a database of surface conditions and work history for more than 6,500 sections of city streets. Each year, 290 miles of streets are visually inspected to see how they are holding up to transportation demands and our Northwest weather. After roads are inspected, a condition index is calculated from 0-100. The overall condition of the City's road system is rated a 63. Generally, streets rated 70-100 are considered "good." City staff members evaluate the potential resurfacing candidates and create a project list based on a number of criteria.





Arterial & Collector Street Preservation



The Arterial and Collector Preservation program is responsible for maintaining the overall condition of approximately 100 centerline miles of roadway that are vital to our City. These roads carry the vast majority of our citizens, goods and services to and from our regional growth center and connect our communities to the greater Puget Sound Region. The Arterial Street Preservation Program has focused almost exclusively on preservation treatments given the lack of funding to complete much needed major reconstruction projects. However, the appropriation of surplus Real Estate Excise tax (REET) funding by the City Council, favorable bids on several recent projects, and the successful acquisition of federal grant funds have generated sufficient capacity in the existing budget to program the reconstruction of B Street NW between 37th Street NW and S 277th Street which is the worst arterial street segment in the network.

The goal of the Arterial Preservation program is to improve the Arterial and Collector network to an overall Pavement Condition Index of 70 (out of 100 scale rating). The current condition of the Arterial and Collector roadway network is in fair condition (PCI Rating of 60). Over the next several years the City has secured federal grant funding for several projects which will help leverage existing city funds to improve the health of our street system. The currently funded 2016 through 2020 Arterial Street preservation projects are shown on the attached map:





All About Pavement Management

The Pavement Management Program preserves and maintains Redmond's pavement infrastructure in good condition, striving to sustain an average pavement score above 80 out of a possible 100. Pavement ratings range from 0 to 100 (100 is brand new pavement) and are used to quantify a pavement's overall performance and help manage the pavement network. Redmond's average pavement score is 77.

Redmond has 143 centerline miles of pavement - 89 miles are in residential areas, 54 miles are collectors and arterial streets. Every two to three years the City conducts a pavement condition rating survey to determine where resurfacing is needed. On average, the City resurfaces about three miles of pavement a year at a cost of about \$300,000 a mile. When selecting streets to resurface each year, segments are grouped together to create a continuous paving area rather than just selecting the worst segments scattered randomly throughout the City.



Street Surface Inventory & Condition



City of Yakima, Washington Department of Public Works
Streets and Traffic Division

The Street Division's annual maintenance program includes small repaving projects, wheel path grinding and patching, pothole repair, alley grading, crack filling and chip-sealing. Street maintenance operations provide a cost-effective program which protects the public investment in city streets although recent budget limitations has reduced the amount of preventive maintenance work that can be accomplished.

Inventory

325 miles of paved roadways + 44 miles of alleys

- 802 Lane Miles
 - 318 Lane Miles Classified Roadways
 - 484 Lane Miles Local Streets
- Pavement Types
 - Asphalt Concrete – 94.5 %
 - Portland Cement Concrete – 2.5 %
 - Bituminous Surface – 3.0 %

Condition

Existing Pavement Condition Index – 54.5

67 % of streets in Fair or better condition (PCI > 40)

2022 Pavement Condition Index @ existing funding level – 19.0

99% of streets below Fair condition (PCI < 40)

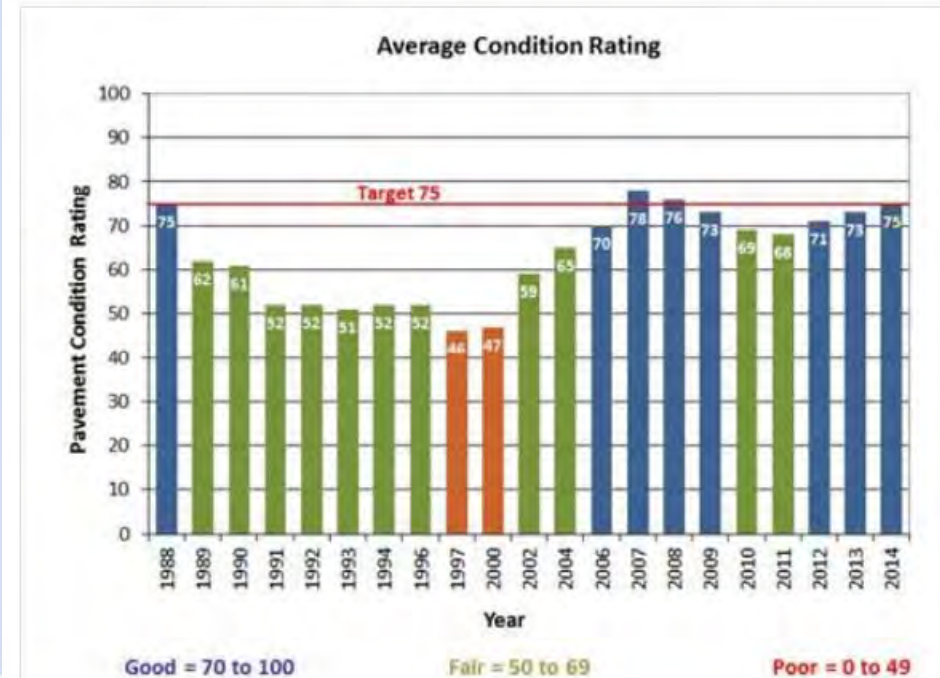


Pavement Management Program

What is Olympia's goal for pavement management?

To extend the life of pavement and delay the need to replace streets for as long as possible. We do this by:

- Preserving streets that are in good condition;
- Reducing the need for expensive repairs; and
- Evaluating street conditions every year.



Olympia's Pavement Management Program

In 2000, the City of Olympia started a program of preventative maintenance for pavement. We still work on the streets that are in poor shape - but our focus is on maintaining the streets that are in fair to good condition. We do this so they don't decline to poor condition and require major repair.



To further extend the life of our pavement, in 2000 we started using a surface treatment on streets called chip seal. Compared to asphalt, chip seal extends the life of our pavement more cost effectively.

PCI Ratings

PCI	PAVEMENT CONDITION	PERCENT OF BOTHELL STREETS
85 - 100	Excellent	61%
70 - 85	Very Good	
55 - 70	Good	29%
40 - 55	Fair	10%
25 - 40	Poor	
10 - 25	Very Poor	
0 - 10	Failed	0%



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