CITY OF MUKILTEO

WISE INVESTMENTS IN TRANSPORTATION TASKFORCE
MEETING MINUTES
August 26, 2015
Rosehill Community Center - 304 Lincoln Ave.

Call to order: Chairperson Joe Marine called the meeting to order at 6:04 p.m.

Roll Call

- Committee Members Present: Len Baron, Diane Cooper, Melanie Field, Marius Grigore, Joe Marine, Jeffrey Nicholson, Rick Norman, Mayor Jennifer Gregerson, Councilmember Randy Lord
- Staff Present: Andrea Swisstack, Assistant City Engineer; Glen Pickus, Planning Manager

Agenda order: No changes.

Meeting Items:

- Approve Meeting Minutes from July 29, 2015
  Melanie Field moved to approve the meeting minutes as presented. Randy Lord seconded the motion which was approved unanimously

- Pavement Management Presentation
  Prior to the meeting committee members were provided the following documents:
  - Pavement Condition Index map (4-23-15)
  - DRAFT Pavement Management Budget Options Report (April 2015)

  Assistant City Engineer Andrea Swisstack gave a PowerPoint presentation on street preservation techniques, describing the costs and pros and cons of each. The presentation also covered pavement condition rating and how pavement management programs work. There was much discussion by committee members of each technique in order to fully understand what the technique involved and what types of situations it was appropriate for. Exhibit 1 is a copy of the presentation slides.

Public Comments: None

Reports and Communications: None

Walking Tour of Pavement Conditions and Preservation Techniques:
The committee did a walking tour to see what various preservation techniques look like after being applied and what a failed road looks like. The following locations were visited:

- 3rd Street east of Lincoln Ave.: 2" overlay and chip seal
- Lincoln Ave. north of 5th Street: chip seal
- Lincoln Ave. south of 5th Street: bonded wearing course
- Mt. Baker Crossing: new construction
- Edgewater Beach Park: slurry seal
- 700 block of First Street: failed road

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Adjournment: Approximately 8:15 p.m.

Next meeting: Sept. 30, 2015

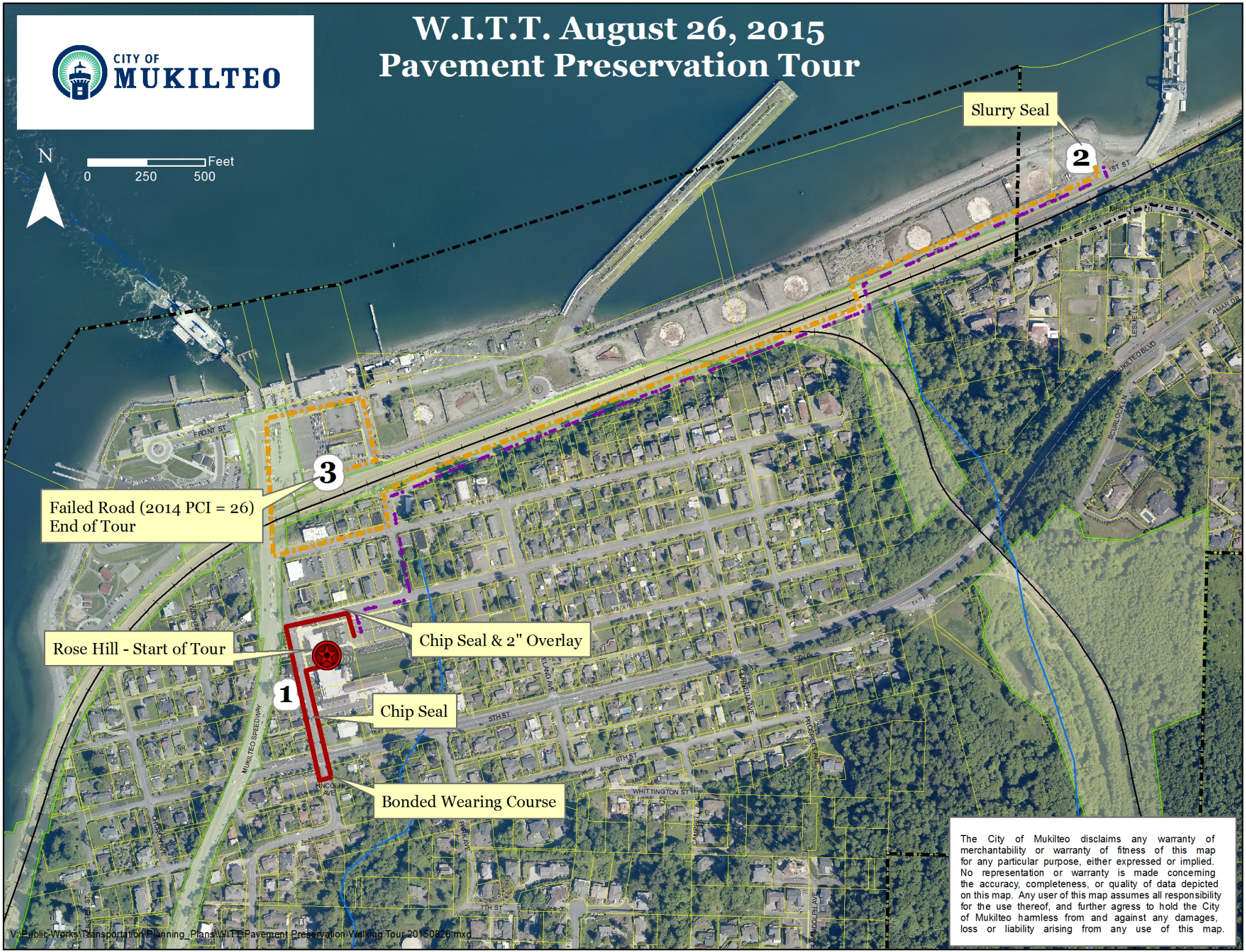

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Exhibit 1

CITY OF
MUKILTEO

Street Preservation Techniques
Wise Investments in Transportation Taskforce
August 26, 2015

City of Mukilteo

By the Numbers

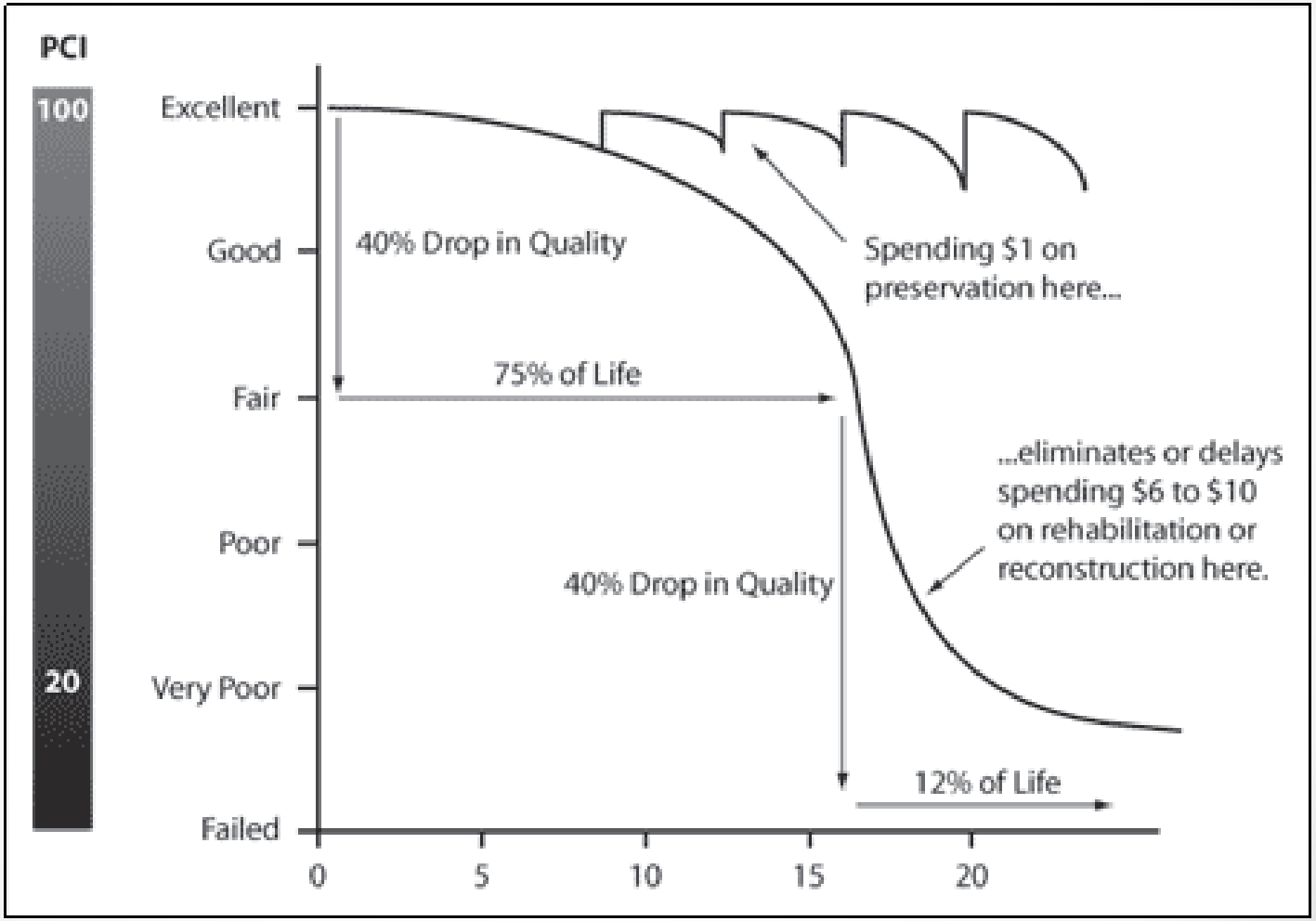
- 61 Miles
- 124 Lane Miles
- Network PCI of 77
- Pavement Management System implemented in 2007
- Last Rated in 2014
- 2015 Program Update

What is Pavement Management?

Process in which you oversee the maintenance, rehabilitation and preservation of street assets

- **Maintain City's infrastructure**
- **Right treatment at the right time**
- **Keeping good roads good**
- **Balance preservation with reconstruction**
- **"Worst first" is not best**
- **Maintain streets like you would maintain your house**

The Right Treatment at the Right Time!



Tools in the Toolbox

NO TREATMENT

- Do Nothing

PREVENTATIVE

- Crack Seal
- Structural Patch
- Fog Seal
- Slurry Seal
- Chip Seal
- Microsurfacing
- Cape Seal
- Bonded Wearing Course
- Thin Overlay

REHABILITATION

- Thin Overlay
- Thick Overlay
- Reconstruction

NO TREATMENT
Do Nothing

When to use?

When pavement is in excellent condition or when there is not sufficient budget.

Pros

- No Cost

Cons

- Increase in deferred maintenance
- Needed repairs will become more costly

PREVENTATIVE

Crack Seal

Used on SR 525

What is it?

Crack Seal fills individual pavement cracks to prevent entry of water or other non-compressible substances.

When to use?

As soon as cracks form in pavement. Also use in advance of other treatments.

Pros

- Least expensive treatment
- Keeps water & non-compressibles out of subgrade

Cons

- Can reduce visibility in pavement markings
- Short life expectancy
- Aesthetics

PREVENTATIVE

Crack Seal

PREVENTATIVE
Structural Patch

What is it?

Targeted pavement repair that treats localized areas of distress. Can either be full depth or partial depth.

When to use?

Spot repair failed areas of pavement. Also use in advance of other treatments.

Pros

- Target damaged areas
- Keeps water out of subgrade

Cons

- New joints are created in the pavement
- Aesthetics

PREVENTATIVE

Structural Patch

PREVENTATIVE
Fog Seal

What is it?

A light application of a diluted slow-setting asphalt emulsion to the surface of an aged (oxidized) pavement surface.

When to use?

Use on roads in very good condition with little to no distresses.

Pros

- Low Cost
- Restores flexibility & rejuvenates pavement
- May postpone need for surface treatment or overlay

Cons

- Short life span
- Excessive application result in loss of skid resistance
- Requires road closure of 4-6 hours

PREVENTATIVE

Fog Seal

PREVENTATIVE

Slurry Seal

Edgewater Beach Parking Lot

What is it?

Thin mixture of emulsified asphalt, water & fine aggregate applied to road surface.

When to use?

On roads that are Fair to Good condition with little to no structural defects.

Pros

- Improves skid resistance
- Smooth surface finish
- Extends pavement life

Cons

- Requires full-day road closure
- “Shedding” period
- Brittle surface – cracks will reflect through
- Early failure in cul-de-sacs & areas with heavy turning movement

PREVENTATIVE

Slurry Seal

PREVENTATIVE

Chip Seal (BST)

Lincoln Ave & 3rd Street

What is it?

A thin layer of heated asphalt covered by small aggregates that are compacted into place. Often covered with a fog seal.

When to use?

On roads that are Fair to Good condition with little to no structural defects.

Pros

- Improves skid resistance
- Extends pavement life
- More flexible than slurry seal
- Seals minor underlying cracks
- Quick installation

Cons

- Rough surface finish
- Loose rock
- Early failure in cul-de-sacs & areas with heavy turning movement
- Increase in road noise
- Public perception
- Performs better on higher traffic streets (secondary compaction)

PREVENTATIVE
Chip Seal (BST)

PREVENTATIVE Microsurfacing

What is it?
An advanced form of slurry seal that includes polymer additives to help the surface "set" faster.

When to use?
On roads that are Fair to Good condition with little to no structural defects. Better for medium to higher volume roads.

Pros

- Improves skid resistance
- Extends pavement life
- Smooth black surface finish
- Quick setting

Cons

- May set too quickly for cul-de-sac/residential applications.
- Requires full road closure
- "Shedding" period
- Triggers curb ramp upgrades

PREVENTATIVE Microsurfacing

PREVENTATIVE
Cape Seal

What is it?
A combination of a chip seal covered with a slurry seal .

When to use?
On roads that are Poor to Good condition with minor to moderate structural defects.

Pros

- Flexibility of chip seal
- Smooth black surface finish of slurry seal
- Extends pavement life

Cons

- Requires phased project
- Requires full road closure
- “Shedding” period
- Longer construction window
- Triggers curb ramp upgrades

PREVENTATIVE

Cape Seal

PREVENTATIVE

Bonded Wearing Course

Lincoln Ave (south of 5th)

What is it?

An application of a polymer modified asphalt emulsion followed by a thin layer of hot mix asphalt (HMA). Approximately ¾" thick.

When to use?

On roads that are Poor to Good condition with minor to moderate structural defects.

Pros

- Seals the underlying pavement
- Open to traffic quickly
- Smooth black surface finish
- Extends pavement life
- Can fill minor ruts
- Improves skid resistance

Cons

- No local contractor
- Not widely used in PNW
- Requires edge grinding & utility adjustment
- Triggers curb ramp upgrades
- Large equipment

PREVENTATIVE

Bonded Wearing Course

PREV. - REHAB
Thin Overlay

What is it?
A thin application of hot or warm mix asphalt . Approximately ¾” to 1.5” thick.

When to use?
On roads that are Poor to Good condition with minor to moderate structural defects.

Pros
- Seals the underlying pavement
- Reduce road noise
- Smooth black surface finish
- Extends pavement life
- Can fill minor ruts
- Improves skid resistance
- Appearance of “new street”
- Many local contractors available
- Common treatment

Cons
- Triggers curb ramp upgrades
- Requires edge grinding & utility adjustment
- More expensive than other treatments

PREV. - REHAB
Thin Overlay

REHABILITATION

Thick Overlay

3rd Street

What is it?

A thick application of hot or warm mix asphalt . Approximately 2” to 3”+ thick.

When to use?

On roads that are Very Poor to Fair condition with moderate to severe structural defects.

Pros

- Seals the underlying pavement
- Reduce road noise
- Smooth black surface finish
- Extends pavement life
- Can fill minor ruts
- Improves skid resistance
- Appearance of “new street”
- Many local contractors available
- Common treatment
- Adds structural support to existing pavement

Cons

- Triggers curb ramp upgrades
- Requires edge grinding & utility adjustment
- More expensive than other treatments
- Requires more significant structural repairs prior to final paving lift.

$ $$$ REHABILITATION

Thick Overlay

REHABILITATION

Reconstruction

What is it?

Full reconstruction of the pavement surface from the subgrade.

When to use?

On roads that are in failed condition with severe structural defects.

Pros

- Brand new road surface
- Reduce road noise
- Smooth black surface finish
- Fixes any imperfections or drainage issues
- Improves skid resistance
- Many local contractors available

Cons

- Triggers curb ramp upgrades
- Most expensive treatment
- Longest construction impact to residents

$$$$ REHABILITATION

Reconstruction

Tools in the Toolbox

Treatment Type	Estimated Total Cost	Required Pavement Condition	Life Expectancy	Local Contractors Available?	Triggers Curb Ramp Upgrades
Do Nothing	-				
Crack Seal	$5/LF	Good to Very Good	3-4 Years	X	
Structural Patching	varies	Very Poor to Good	varies	X	
Fog Seal	$1.50/SY	Good to Very Good	2-5 Years	X	
Slurry Seal	$3-$5/SY	Fair to Good	5-8 Years		
Chip Seal	$3-$5/SY	Fair to Good	5-8 Years	X	
Microsurfacing	$5-$8/SY	Fair to Good	5-10 Years		X
Cape Seal	$8-$12/SY	Poor to Good	7-12 Years		X
Bonded Wearing Course	$16-$20/SY	Poor to Good	10-12 Years		X
Thin Overlay	$18-$35/SY	Poor to Good	12-15 Years	X	X
Thick Overlay	$35-$45/SY	Very Poor to Fair	15-20 Years	X	X
Reconstruction	$60-69/SY	Failed	15-20 Years	X	X

Into the Future…

2015 Street Preservation Program Update

- What tools would we like to have in our toolbox?

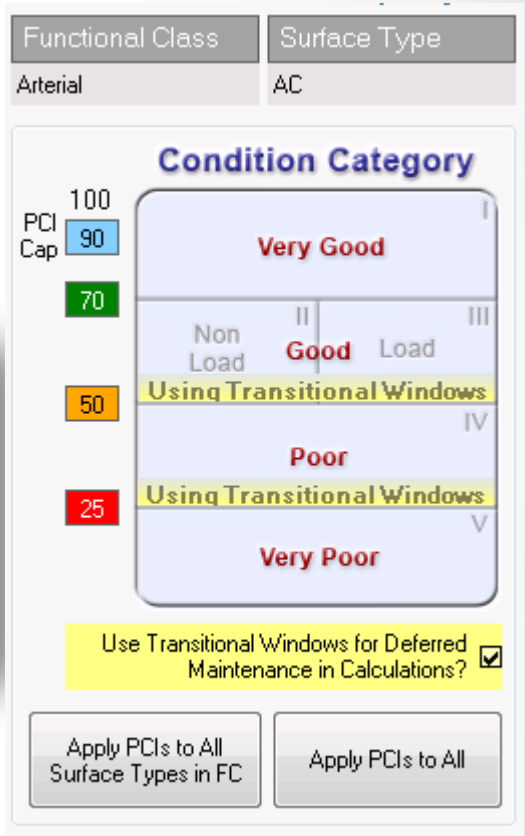
- Decision Tree

City of Mukilteo

Decision Tree

Printed: 11/10/2014

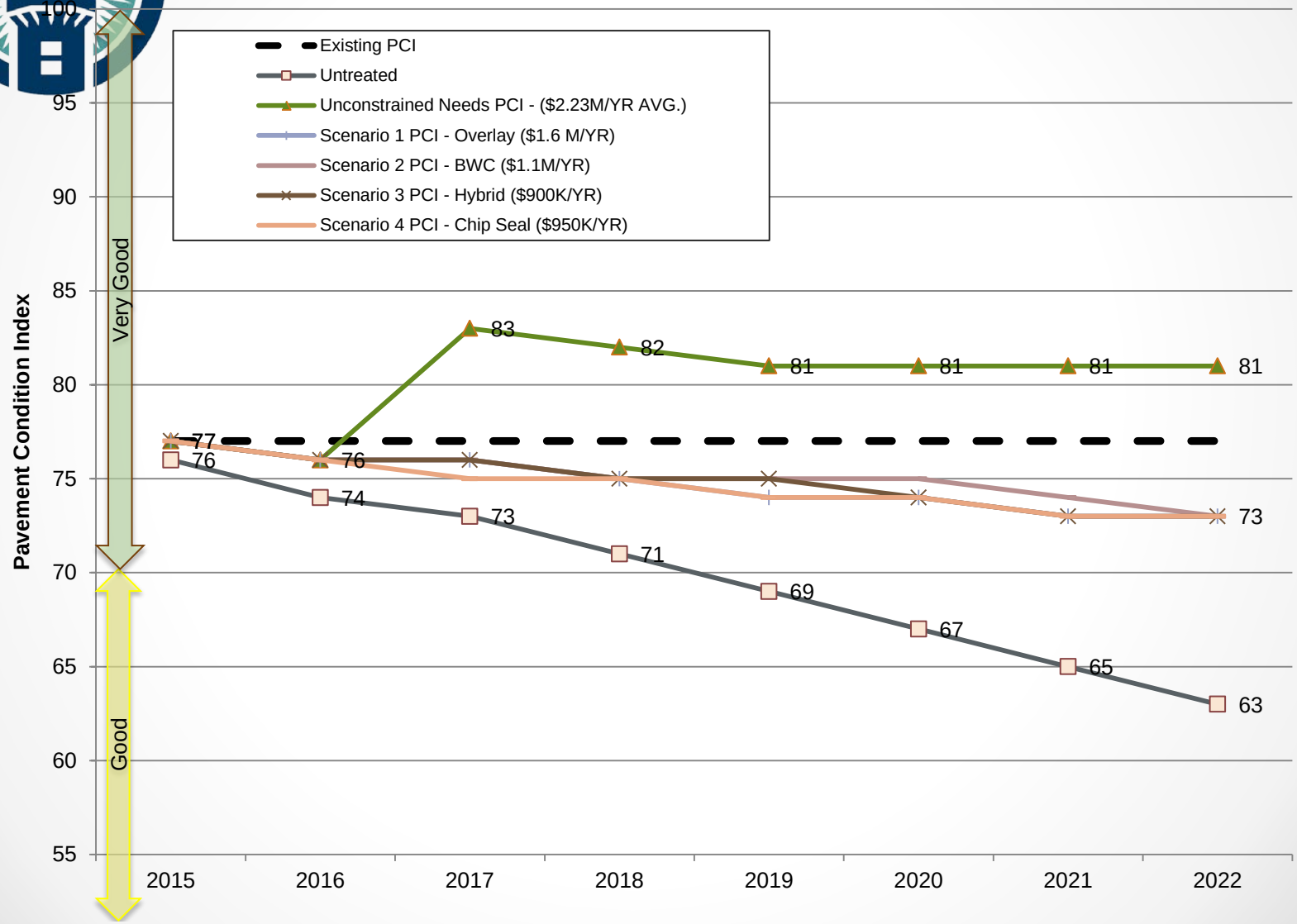
Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Arterial	AC	I - Very Good	Crack Treatment	SEAL CRACKS	$1.50	3		
			Surface Treatment	BONDED WEARING COURSE	$9.00		9	
			Restoration Treatment	DO NOTHING	$0.00			2
		II - Good, Non-Load Related		BONDED WEARING COURSE	$9.00		9	
		III - Good, Load Related		BONDED WEARING COURSE	$10.00		9	
		IV - Poor		THICK AC OVERLAY(2.5 INCHES)	$20.00		9	
		V - Very Poor		RECONSTRUCT SURFACE (AC)	$55.00		9	

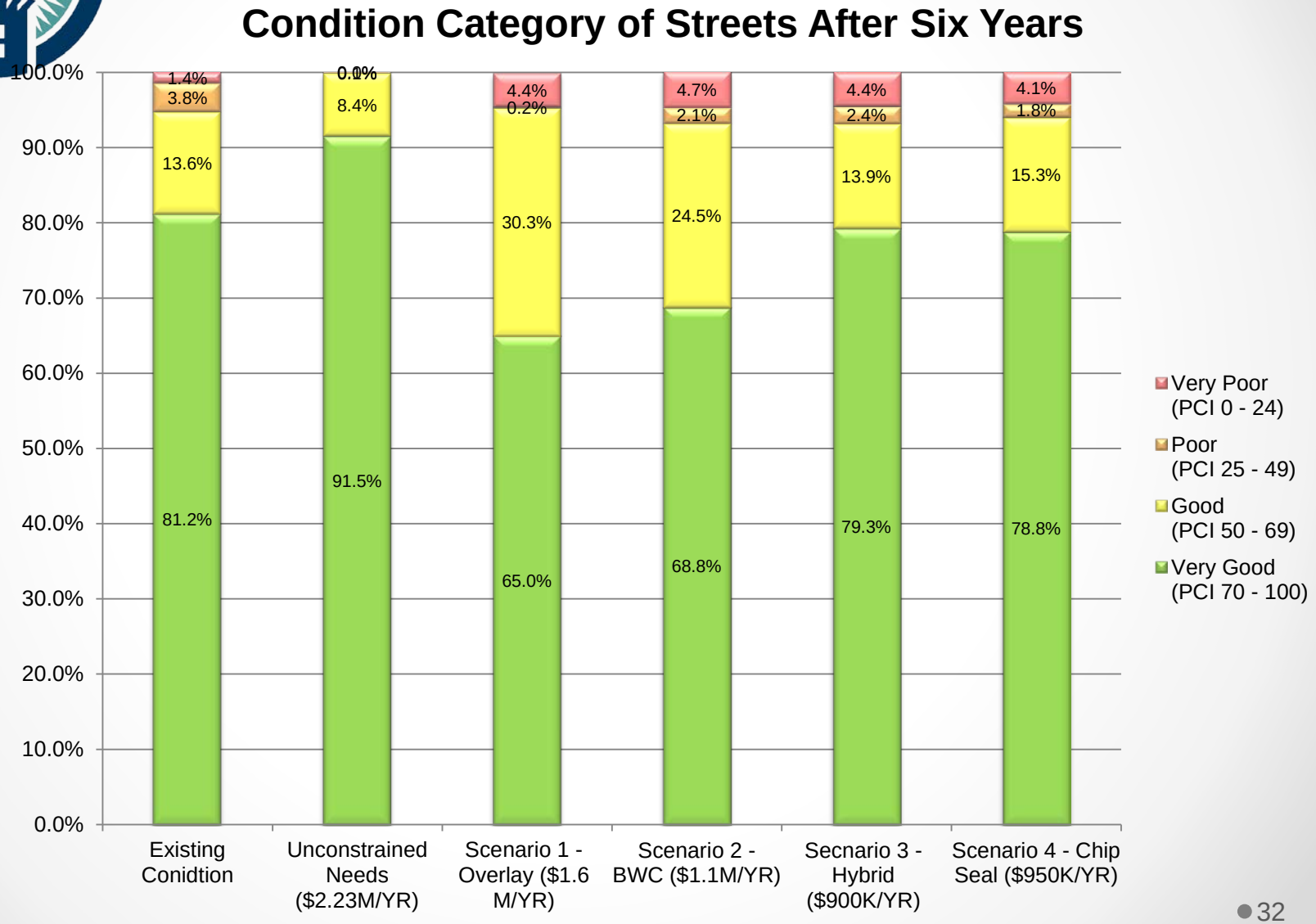


- Different scenarios
  - Budget Driven
  - PCI or Target Driven

- Draft Budget Options Report

SCENARIO COMPARISON - PCI




Condition Category of Streets After Six Years
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
1.4%
3.8%
13.6%
81.2%
0.0%
8.4%
91.5%
4.4%
0.2%
30.3%
65.0%
4.7%
2.1%
24.5%
68.8%
4.4%
2.4%
13.9%
79.3%
4.1%
1.8%
15.3%
78.8%
Existing Conidtion
Unconstrained Needs ($2.23M/YR)
Scenario 1 - Overlay ($1.6 M/YR)
Scenario 2 - BWC ($1.1M/YR)
Secnario 3 - Hybrid ($900K/YR)
Scenario 4 - Chip Seal ($950K/YR)
Very Poor (PCI 0 - 24)
Poor (PCI 25 - 49)
Good (PCI 50 - 69)
Very Good (PCI 70 - 100)

Questions