



Tangible Local Agency Solutions for Pavement Preservation

Ryan Miles, PE
Street Operations Program Manager
City of Vancouver

Presentation Overview

- Treatment selection
- Rehabilitation tools
- Preservation tools and lessons learned

Pavement Management Objectives

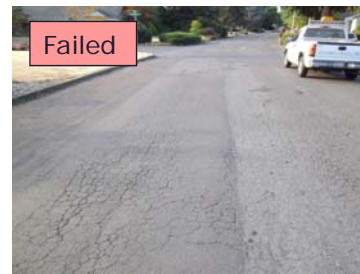
- Extend the life of existing pavements over the entire network for as long as possible – “Take care of what we have”
- Right treatment, on the right street, at the right time
- Avoid worst-first strategies

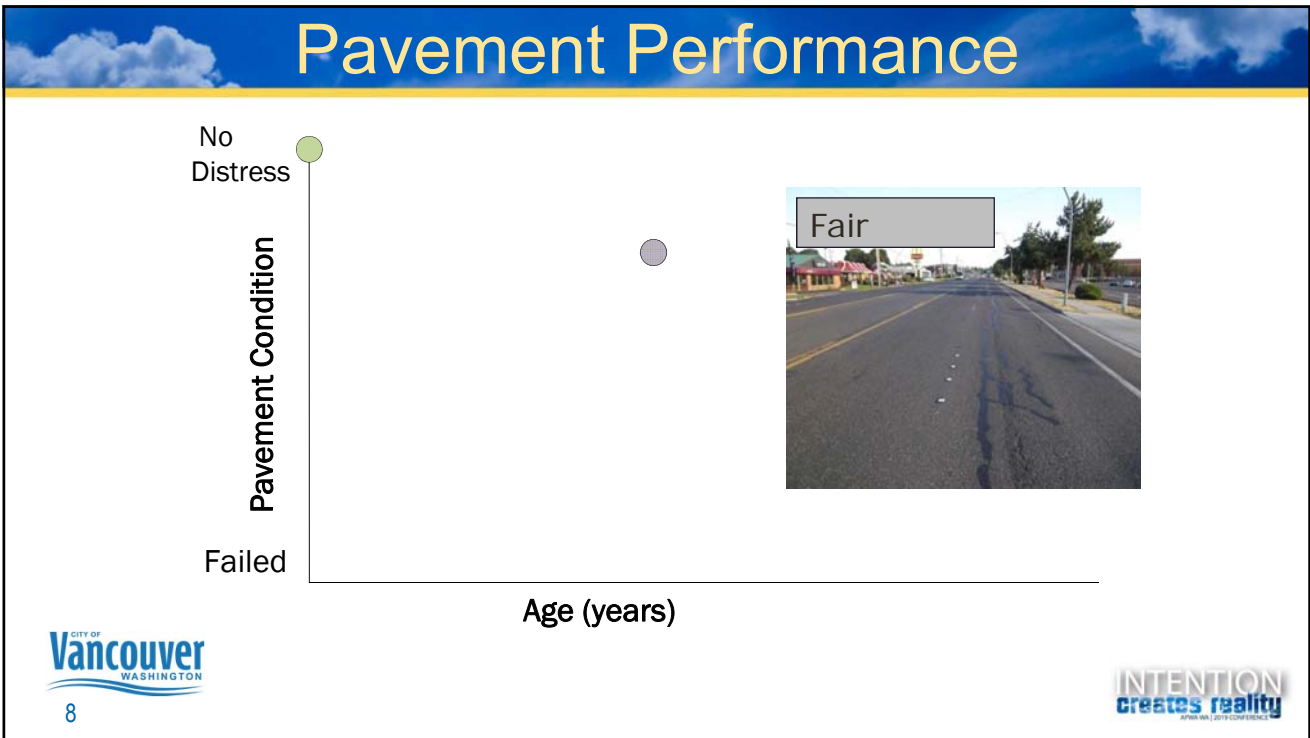
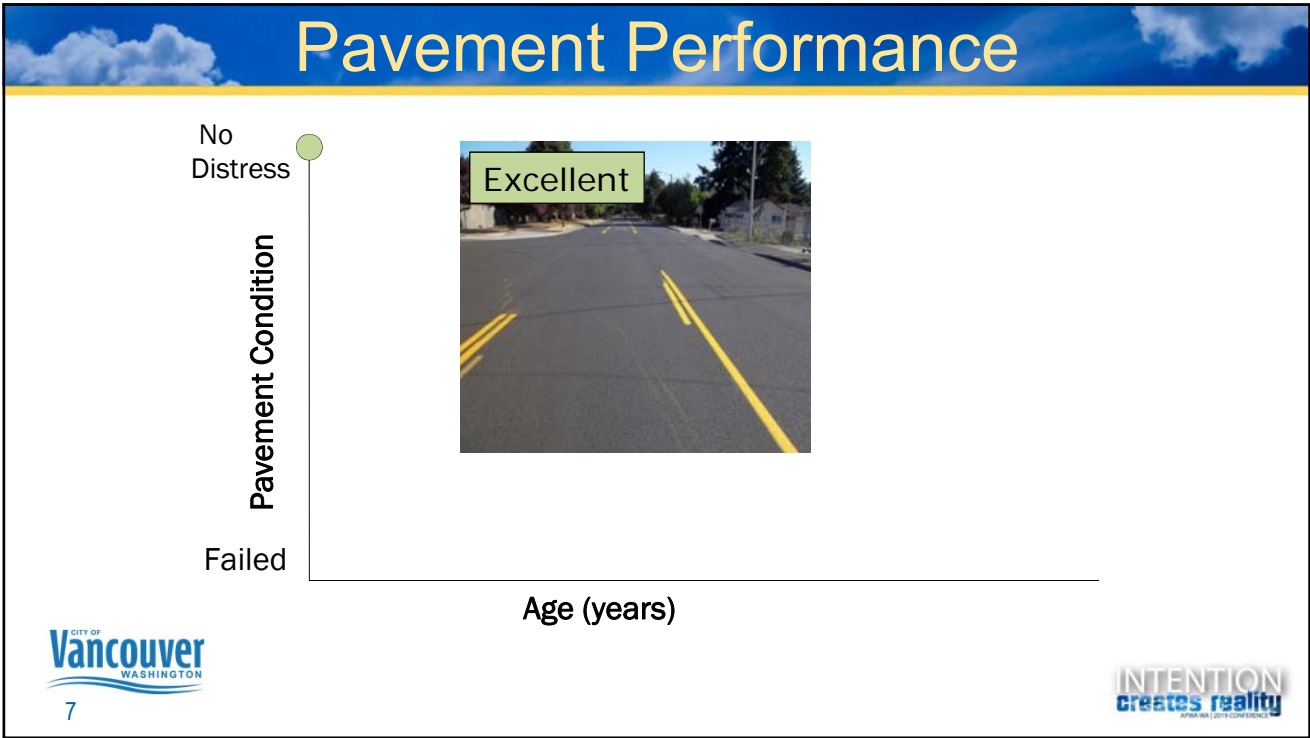
Condition Assessment

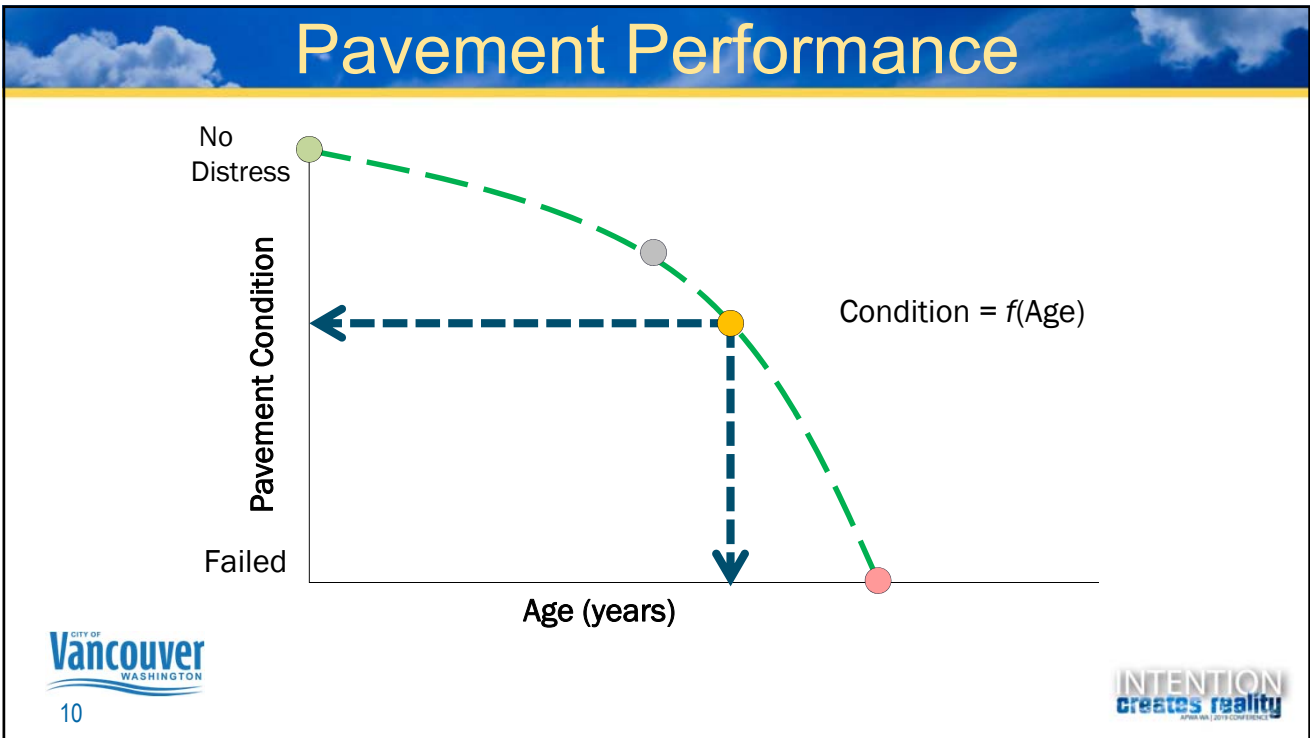
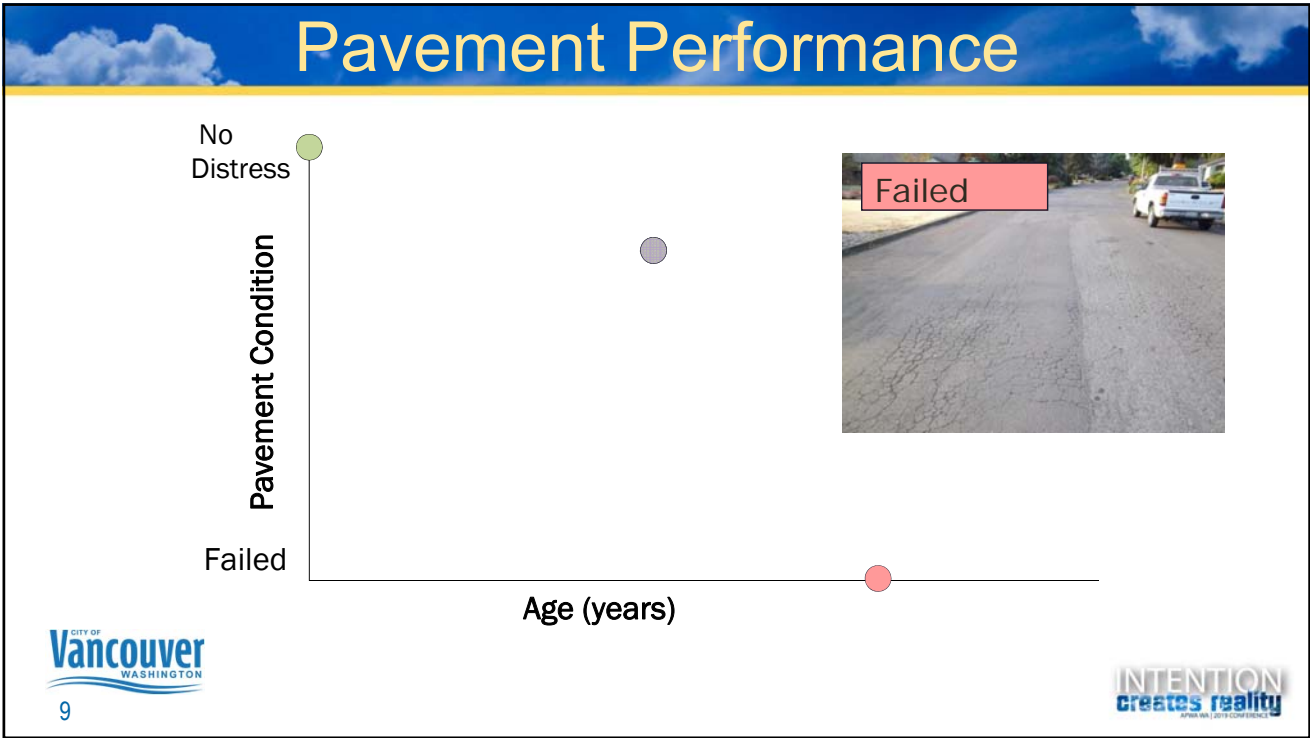
- Utilize some form of rating system
 - Pavement Condition Index (PCI) 0 – 100
 - Pavement Serviceability Index (PSI) 0 – 5
 - Simple visual rating (e.g. PASER) 0 - 10
- Routine/regular assessment
- Consistent and repeatable method

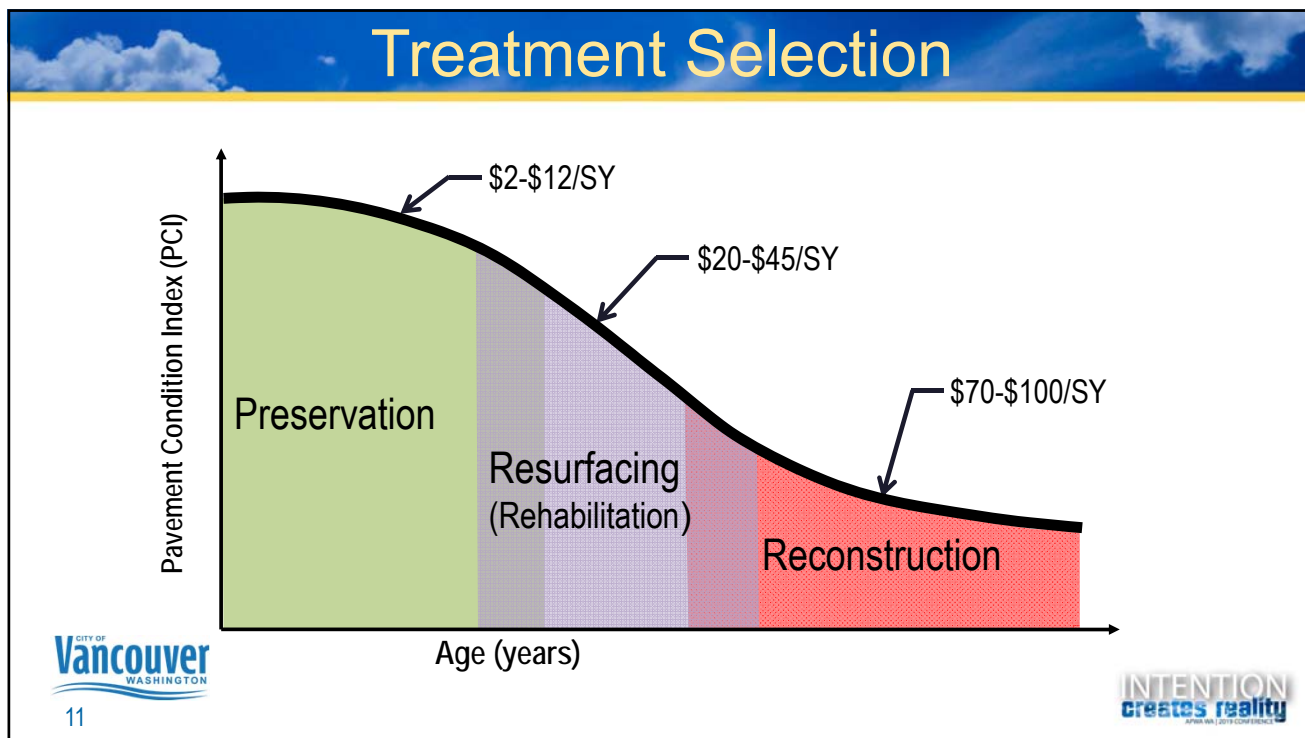


Condition Assessment









11

Treatment Selection

Factors to consider:

- Type of street
- Traffic volumes and impacts
- Previous treatments – when and what
- Types of pavement distress
- Coordination with other projects

Logos for the City of Vancouver and INTENTION creates reality are present at the bottom of the slide.

12

Rehabilitation Treatments

- Mill and inlay
- Traditional overlays
- Pulverize and pave
- Fiber reinforced asphalt
- Cement treated base



Rehabilitation Treatments (cont'd)

- \$20 - \$45/sy
- ADA curb ramps in advance
- Pavement repairs
- Deep mills in travel lanes



Preservation Treatments

- Slurry Seals
- Microsurfacing
- Chip Seals
- Cape Seals
- Bonded Wearing Course
- Other Treatments

Slurry Seals

- Using since the late 90's
- Residential streets only
- Joint contracts with other county agencies



Slurry Seals (cont'd)

- \$2 - \$3/sy
- 8 to 10 year life
- Work when school is out
- Slurry only contract



Slurry Seal Lessons

- PCI > 70
- Prep is important
- Traffic volumes
- Grouping of streets



Microsurfacing

- Using since 2009
- Type 2 and Type 3 rock
- Arterials and collectors
- Continuous and truck mounted applications



Microsurfacing (cont'd)

- Type 2: \$3 - \$5/sy
- Type 3: \$4 - \$6/sy
- 7-8+ year life
- Prep work done by City crews



Microsurfacing Lessons

- PCI > 70
- Striping removal
- Night work
- Application
 - Workmanship/Equipment
 - Application rate



Chip Seals

- Started using in 2011
- Traditional emulsion chip seal
- 3/8" Asphalt rubber chip seals
- 1/4" Chip seals (only in 2017)
- Fog seal all types



Chip Seals (cont'd)

- AR Chip: \$4 - \$7/sy
- 1/4" Chip: \$3 - \$4/sy
- Emulsion chip: 6+ years
- AR Chips performing well to date
 - 5+ years
- 1/4" Chip seals: too soon to tell



Chip Seals (cont'd)



Chip Seals (cont'd)



Chip Seals Lessons

- PCI > 55
- Street prep
- Sweeping after placement
- Public perception



Cape Seals

- Started using in 2012
- 3/8" Asphalt rubber chip seal
- Either slurry (residential) or microsurfacing (arterials)



Cape Seals (cont'd)

- \$8 - \$12/sy
 - Slurry lower end
 - Micro higher end
- Good performance to date
 - 6+ years
- Minimal prep



Cape Seals (cont'd)



Cape Seal Lessons

- PCI > 50
 - Can go lower but streets need more prep
- One contractor to do both treatments
- Don't chip seal only next to cape seal in residential areas



Bonded Wearing Course

- Pilot project in 2018
- Part chip seal and part overlay
 - Oil application for sealing and bonding of surface
 - Thin lift of asphalt for ride quality and durability



Bonded Wearing Course (cont'd)

- \$11 - \$16/sy
- Uses a gap/open graded asphalt
- Can be used in urban or rural areas with varying traffic loads
- Prep work still required



Bonded Wearing Course Lessons

- PCI > 55 - 60
- Best not to use with curb and gutter unless a true overlay
- Open graded asphalt mix reduces spray from water
- Adjust utilities after placement



Other Preservation Treatments

- Crack sealing
- Double chip seals
- Micro-chip-micro



Other Preservation Treatments



35



THANK YOU!

Questions and Discussion

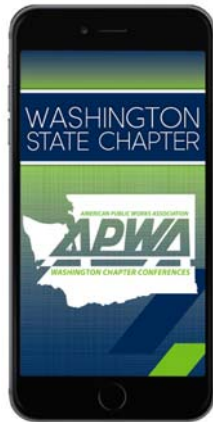
Ryan Miles, City of Vancouver
Street Operations Program Manager
Ryan.miles@cityofvancouver.us
360-487-7708



36



HELP WANTED!



Please take a few minutes to use the evaluation form on the mobile app and provide your feedback on this session!

Evaluations help us select sessions for future conferences and provide valuable feedback for conference planners & speakers.

Thank you!