

# Vancouver's Preservation Treatments

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# Presentation Overview

- Treatment Selection
- Preservation Treatments
- Lessons Learned

# Condition Assessment

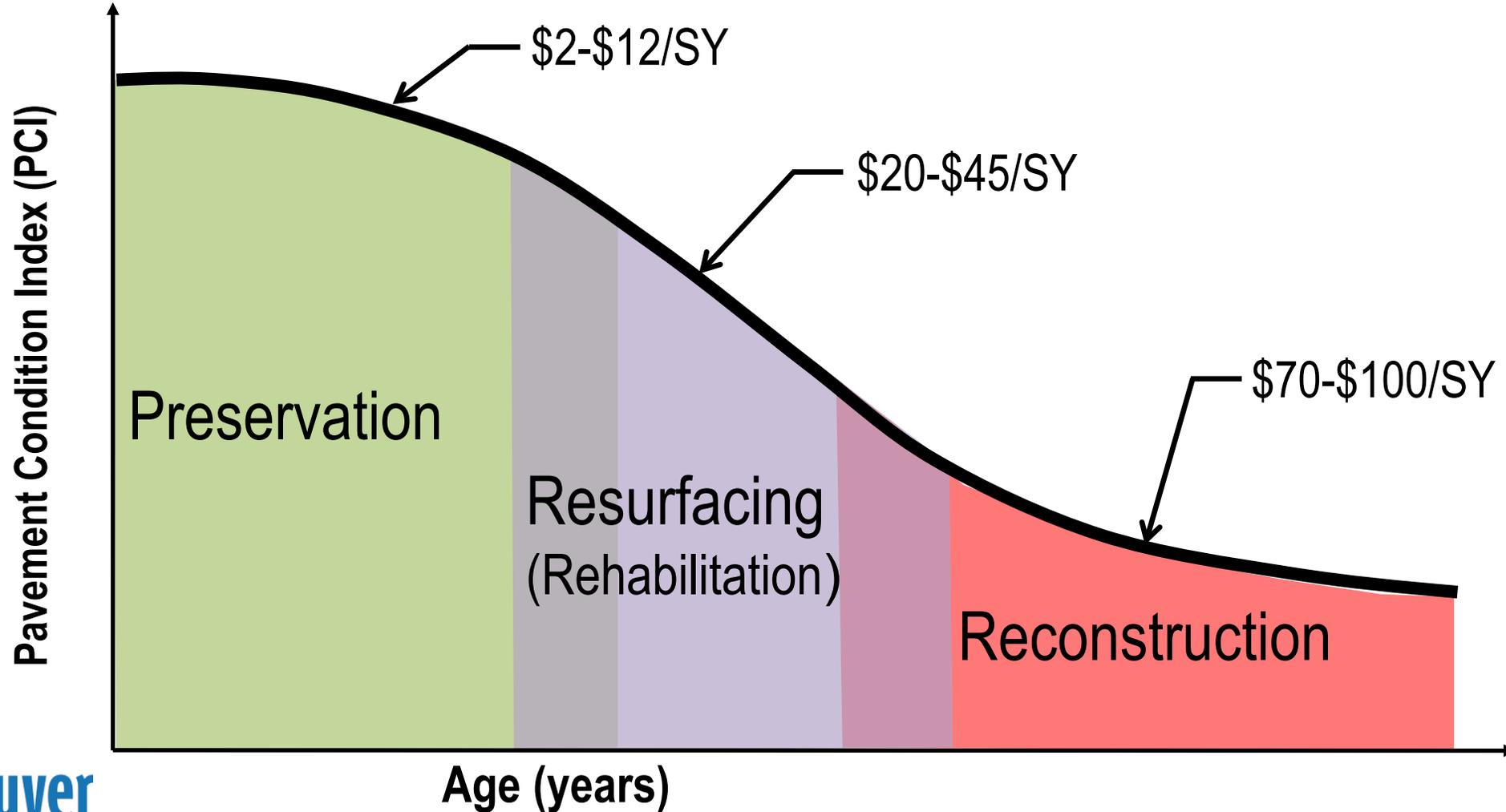
- Utilize some form of rating system
  - Pavement Condition Index (PCI) 0 – 100
  - Pavement Serviceability Index (PSI) 0 – 5
  - Simple visual rating (e.g. PASER) 0 - 10
- Routine/regular assessment
- Consistent and repeatable method



# Condition Assessment



# Treatment Selection



# Treatment Selection

## Factors to consider:

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

# Preservation Treatments

- Crack Sealing
- Slurry Seals
- Microsurfacing\*
- Chip Seals
- Cape Seals\*
- Bonded Wearing Course\*
- Rehabilitation\*

\*curb ramps

# Crack Sealing

- Crack seal 2 months+ before treatment
- \$0.54/lf or \$0.46/sy
- Quantity estimates
- Mastic



# Slurry Seal

- Using since the late 90's
- Residential streets only
- PCI > 70



# Slurry Seal (cont'd)

- \$2 - \$3/sy
- 8-to-10-year life



# Microsurfacing

- Using since 2009
- Arterials and collectors
- Continuous and truck mounted applications
- PCI > 70
- Remove striping
- \$4 to \$6/sy (loaded)



# Microsurfacing Lessons

- Street prep
  - Early, crack sealing, repairs, ruts
- Doing less intersections
- Night work
- Application rate
- Bike lanes
- Mastic



# Chip Seals

- Started using in 2011
- Arterials and Collectors
- Asphalt rubber chip seals
- PCI > 55



# Chip Seals (cont'd)

- AR Chip: \$11/sy (loaded)
- 7+ years
- Bike Lanes



# Chip Seals Lessons

- Street prep
- Can leave all paint lines
- Sweeping after placement
- Used on both curbed and uncurbed streets
- Public perception



# Cape Seals

- Started using in 2012
- Asphalt rubber chip seal
- Either slurry (residential) or microsurfacing (arterials)
- PCI > 50



# Cape Seals (cont'd)

- \$12 - \$14/sy
- Type 2 aggregate
- 7+ years
- Less prep



# Cape Seals Lessons

- Have used on low PCI streets
- One contractor does both treatments
- Don't chip seal only next to cape seal in residential areas



# Bonded Wearing Course

- Pilot project in 2018
- 1" open graded HMA
- PCI was 55 to 65
- PCI currently 84 to 87



# Bonded Wearing Course (cont'd)

- \$15 (2018) \$22(2023)
- Can be used in urban or rural areas with varying traffic loads
- Prep work still required



# Bonded Wearing Course

## Lessons

- Reduces spray from water
- Reduces traffic noise
- Adjust manholes after placement



# Rehabilitation Treatments

- Mill and inlays
- Traditional overlays
- \$35 - \$42/sy



# Summary of Costs

| <u>Treatment</u>        | <u>\$/SY</u> |
|-------------------------|--------------|
| • Crack Sealing         | 0.46         |
| • Slurry                | 2 to 3       |
| • Microsurfacing        | 4 to 6       |
| • AR Chip               | 11           |
| • Cape Seals            | 12 to 14     |
| • Bonded Wearing Course | 22*          |
| • Mill and Inlay        | 35 to 42     |

Costs include striping, traffic control, mobilization.

\*based on 2018 prices

# Lessons Learned Summary

- Use best first
- Pick the right treatment for the right street
- Account for drainage
- Do prep work well in advance
- Crack Sealing

# Questions and Discussion

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