

# Preservation Techniques, Cost Analysis and Decision Trees

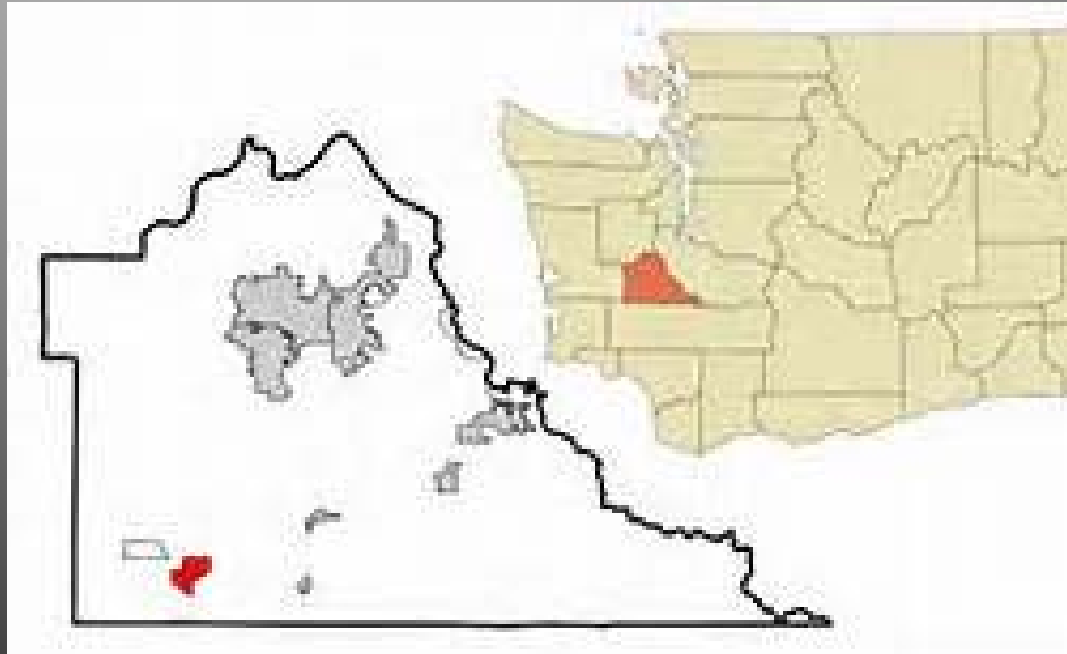
Thurston County Public Works

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# Thurston County Overview



- ▣ 1,009 Road Miles
- ▣ Urban and Rural Areas
- ▣ Decline in Revenue
- ▣ Increase in Need to keep Roads Good

# Thurston County History

## CHIPSEAL

Year	Miles	Total Cost
2003	74	\$1,287,687
2004	77	\$1,399,800
2005	54	\$996,193
2006	26.25	\$793,784
2007	29.4	\$851,171
2008	41	\$1,788,000
2009	61.172	\$2,685,913.15
2010	17.593	\$727,590
2011	no chip sealing	
2012	35.2	1,350,905

## OVERLAY

Year	Miles	Total Cost
2002	20.61	\$2,076,932
2003	22.19	\$1,811,639
2004	16.867	\$1,524,888
2005	8.5	\$1,021,330
2006	5.21	\$776,756
2007	1.726	\$244,596
2008	2.45	\$600,000

# Rising Costs - Need to Re-Evaluate

## 2005 COSTS

- ▣ Chipseal  
\$1.50/SY
- ▣ Overlay  
\$120,000/Mile
- ▣ Full Rebuild  
\$1,000,000/Mile

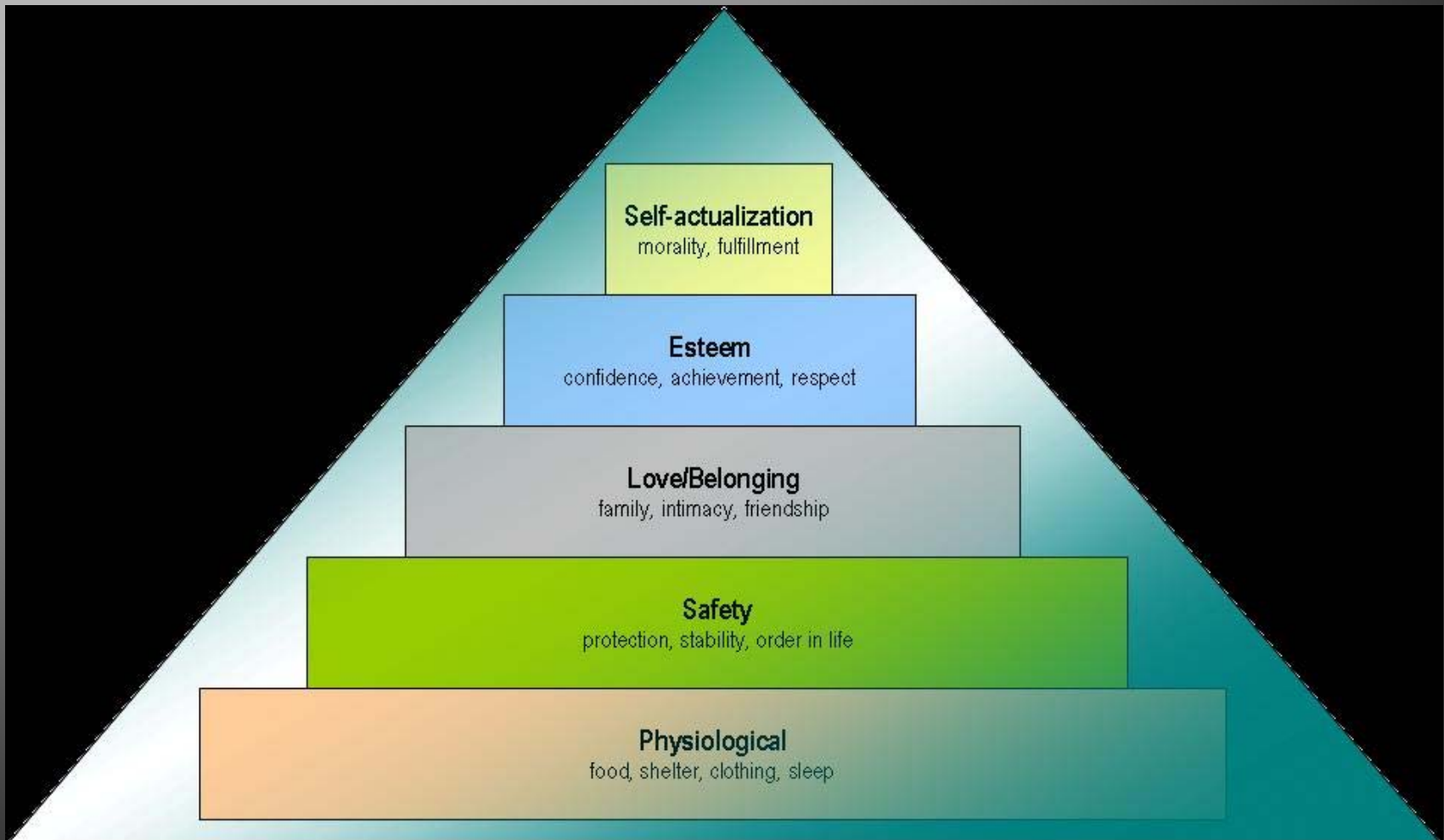
## 2010 COSTS

- ▣ Chipseal  
\$3.15/SY
- ▣ Overlay  
\$220,000/Mile
- ▣ Full Rebuild  
\$1,850,000/Mile

# Are you using B/C Analysis?

Are you doing more than  
building new roads or full  
rebUILds on existing?

# Maslow's Hierarchy



# Current Considerations

- ▣ Full Rebuild Cost Considerations
  - ADA Requirements
  - Local Agency Requirements
  - Stormwater Costs
  - Permit Costs
- ▣ Cheaper to do maintenance
  - Way cheaper given other requirements

# Where to Start

- ▣ Best First or Worst First?
- ▣ What classifies as best and when to start
- ▣ Keep Good Roads Good
- ▣ Try new test sections?



# Preservation & Other Techniques

- ▣ Do Nothing
- ▣ Crack Seal
- ▣ Seals
  - Fog Seal, Slurry Seal, Chip Seal, Cape Seal, Tire Ruberized Modified Surface Seal
- ▣ Recycling
- ▣ Overlays
  - ▣ Digouts with Thick or Thin Overlays
- ▣ Full Rebuilds

# Some Options and Costs

Fix	Years of Life Expected from maintenance performed	2009 Costs * *taken from Kercher Inc. and City of Sacramento
No Maintenance	N/A	
Crack Seal	2-5 years	\$1-\$1.50/SY
Chip Seal, Slurry Seal, Cape Seal or TRMSS	5-12 years - Fog seal 3-5 years, chip/slurry 5-7 years, cape 7-10 years	\$1-\$3.50/SY
Dig outs and thin overlays or chip/ TRMSS on local roads	10-12 years	\$6-12
Dig outs and thick overlay	12-15 years	\$12-18/SY
Reconstruction/CRP project	20+ years	\$30+/ SY

# Test Sections

- ▣ There is a lot of research out there
- ▣ Hard to be first in area to try something new
- ▣ What we have tried
  - Reverse Double Chip in an area with rutting and flushing –Littlerock Road
  - Recycled Glass below parking area
    - ▣ Less risk at parking facility
    - ▣ Did not have to import material - more green
  - Chipseal over native ground – Case Road

# Case Road

- ▣ Original Road  
Chipseal  
on Native  
Subgrade
- ▣ Several  
Rock Pits  
in Area
- ▣ Over 4000  
ADT



# Case Road



# Benefit Cost & Construction Timing

- ▣ Early season is best time to pave chipseal etc.
- ▣ Crack Sealing
  - Summer?
  - Fall?
  - Winter?
  - Spring?
- ▣ Make your preservation techniques have the longest lifespan you have control over. Otherwise you lose benefit and raise cost

# Decision Tree

- ▣ Do not blindly follow
- ▣ Take a look at your roads and do QA/QC
- ▣ Road with Average PCI of 72
  - ADT put it on the 3/8" chip list in TC
  - Site inspection – Great pavement condition
  - Except across the road next to a fire hydrant
  - Private Water line leaking
  - Road repaired by utility
  - County cost \$0

# What Variables Matter

- ▣ ADT
- ▣ Truck Route
- ▣ Previous Treatments
- ▣ History
- ▣ Citizens
- ▣ Politics
- ▣ Budget
- ▣ Goals
- ▣ Agency Size – Mobilization Costs



# Show and Tell



# Show and Tell



# Show and Tell

- ▣ Show your successes
- ▣ A picture is worth a thousand words
- ▣ Site visits, public meetings, tell your successes
- ▣ Decision makers and Constituents will want more success
- ▣ Shoot for a decision made before the dollars are decided
- ▣ Doing more with less, show off successful innovations and changes in your program

Questions?