

ISSA Preservation Performance Award

Nominator:

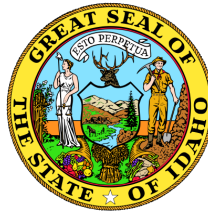
Scott Forrey, P.E.
Ada County Highway District
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Nominee:

Lloyd Carnegie for ACHD
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Garden City, ID 83714
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Our Mission: We drive quality transportation for all Ada County...Anytime,
Anywhere!

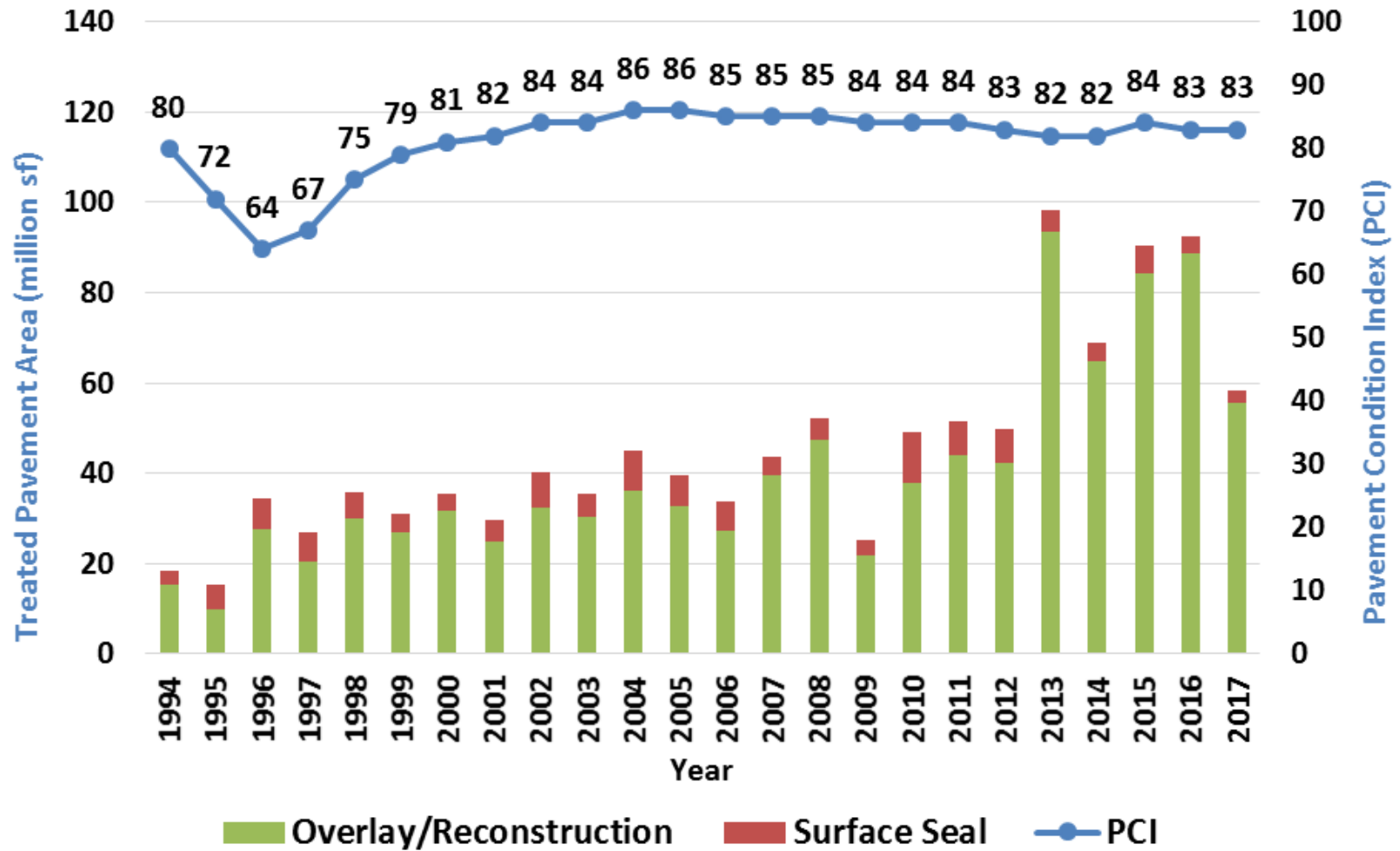
History



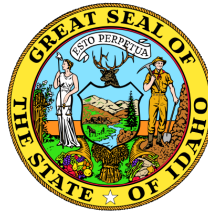
- 1995 – 9 year chip seal program
 - 18 zones
 - Each ACHD crew assigned to 9 zones
 - Everything chipped every 9 years
 - No crack seal
- 2012 – 6 year chip seal program
 - 9 year cycle not extending life cycle for arterials and collectors
 - PCI was dropping with 9 year cycle
 - 6 zones predicated to sustain the life of the system
 - All arterials and collectors chipped every 6 years
 - ½ of residential chipped every 6 years (all residential chipped every 12 years)
 - Added crack seal (all roads in the zone get sealed)
 - Resulted in our current "Very Good" PCI ratings

- Utilize StreetSaver to manage and assess our roadway infrastructure as pavement is our single most valuable asset.
- StreetSaver is the starting point to develop the segments to chip seal each year.
- This program helps in self-evaluation as it shows the sustained PCI over the years for our roadway network.

PCI Ratings Over the Years



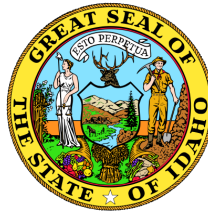
PCI Ratings Over the Years



- Figure shows the network PCI between 1994 and 2017, as well as the total treated pavement areas by surface seal and overlay/reconstruction.
- Average PCI has improved by 20 points since 1996.
- District performed surface seals and reconstruction on approximately 35 million square feet (sf) of pavements in 1996, which was more than double the previous year's treatments.
- Aggressive maintenance strategy to maintain the overall condition in the "Excellent/Very Good" category.
- This data shows that over the years, our consistent PCI ratings demonstrate life extension of our roadway network.

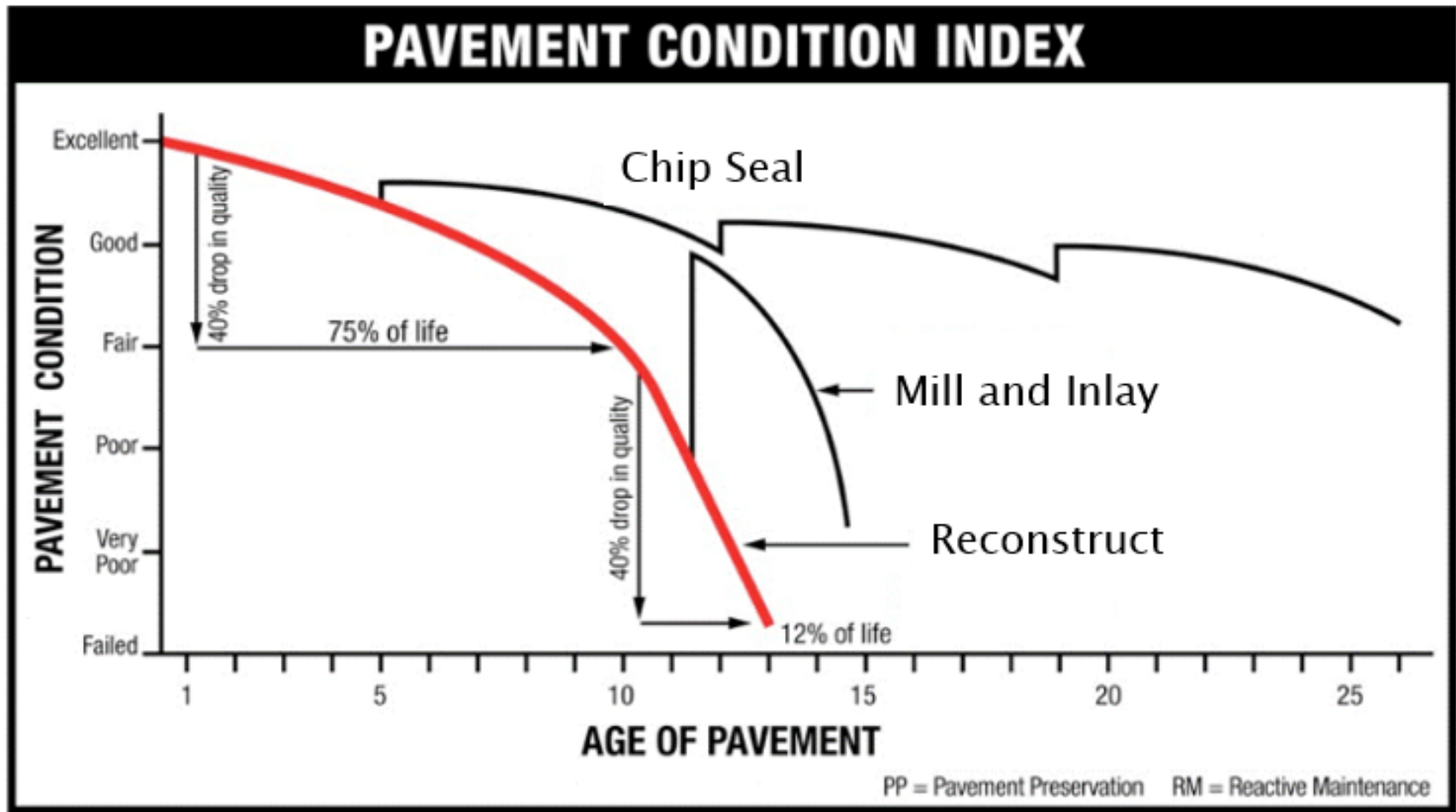
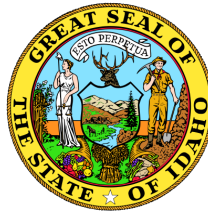
ACHD recognized as "Best Roads in the Northwest" for the last 4 Years

Crack Seal

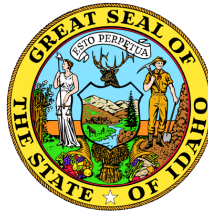


- Crack sealing is crucial to the success of any preventative maintenance!
- Prior to any chip sealing, all roadways within the assigned preventative maintenance zone are crack sealed.
- Follow prescribed methods of crack sealing.
 - Blow out crack with hot air to remove debris and moisture.
 - Fill crack to a maximum of 1 / 8" of sealant above surface and minimum of 1" overband on each side.
- In the last 6 years, have placed over 1,000 tons of crack seal material onto the roadway, with an average of 0.45 tons/lane mile.

Why Chip Seal

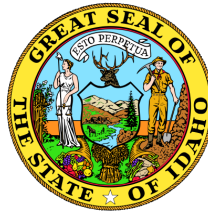


Why Chip Seal

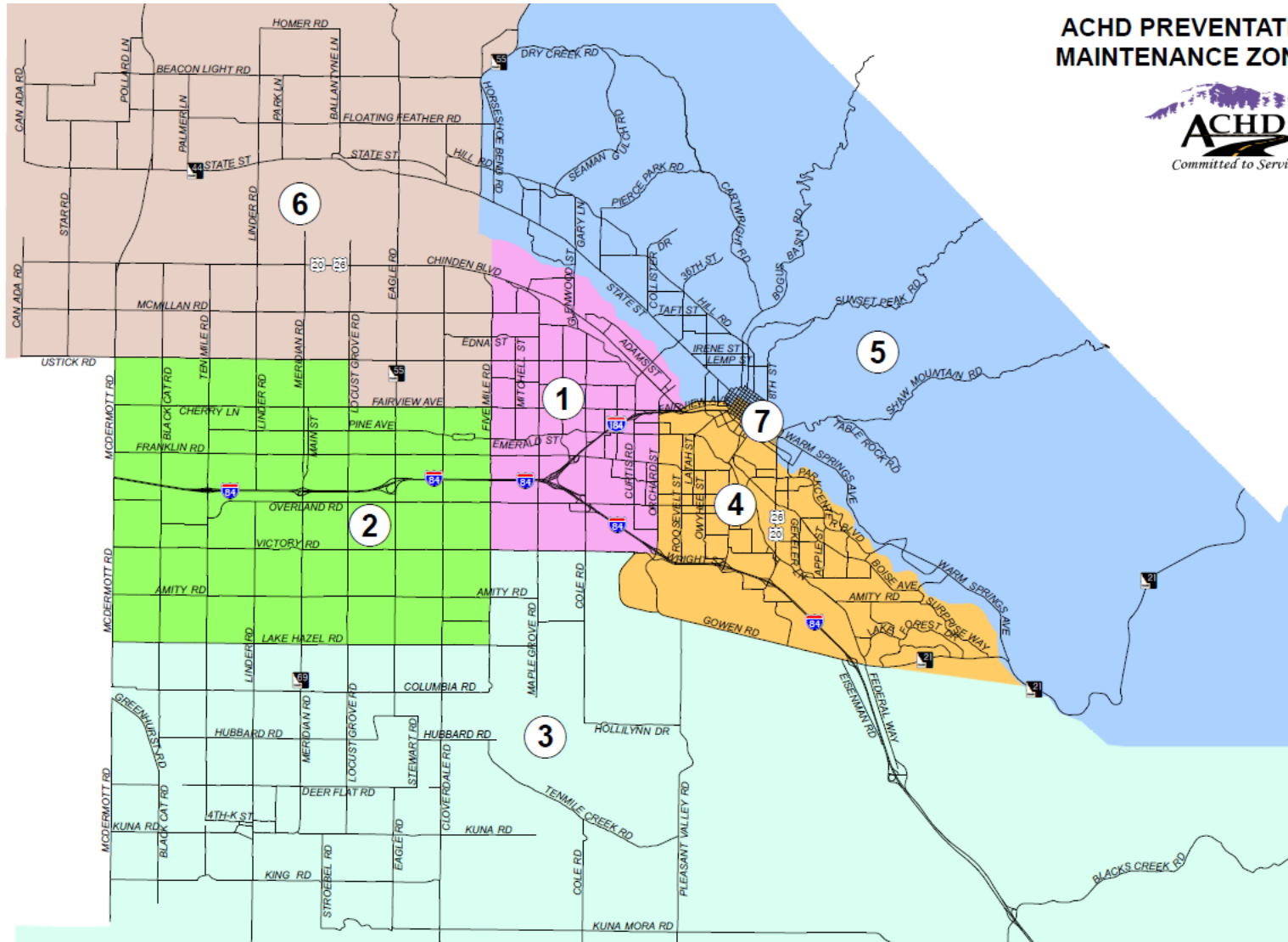


- Asphalt oxidizes, becomes hard and brittle.
- Chip Sealing slows the oxidization process by sealing the road and creating a new wearing surface. It also waterproofs the road and prevents base failure.
- Chip sealing provides a maximum return and benefit for the tax payers of Ada County and helps maintain our “very good” overall PCI rating for our roads.
- Chip Seal costs \$0.22/SF vs. Mill & Inlay at \$1.49/SF vs. Reconstruction at \$7.39/SF

Preventative Maintenance Zones

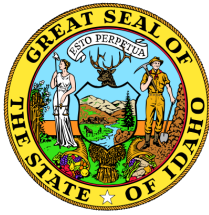


ACHD PREVENTATIVE MAINTENANCE ZONES

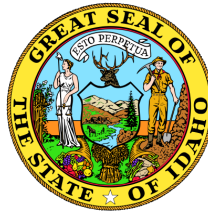


- This is an overview map of the 7 preventative maintenance zones.
- No chip sealing is completed in Downtown Boise – Zone 7, Microsurfaced instead.
- Goal is to chip seal all Arterials and Collectors every 6 years and to do 50% of residential in each zone. This means that residential are chip sealed every 12 years.

Chip Seal Process



Chip Seal Process

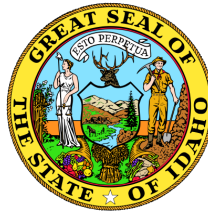


- The roadway is cleaned by the street sweepers 1–3 days prior to chip seal.
- The Cationic Asphalt LMCRS–2H oil is placed by the distributor. The amount of oil placed is determined in the field based on the condition of the road surface.
- Chip spreader feed by dump trucks. 3/8" chip for Arterial and Collector, 1/4" chip for Residential.
- Chips spread at 17 lbs/sqyd for 3/8" and 13 lbs/sqyd for 1/4".
- Roller used to orient chip into oil.
- Flaggers on site to direct traffic to keep public and crews safe.

Fog Seal Process

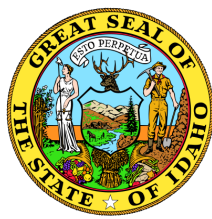


Fog Seal Process



- Allow approx. 3–5 days for the oil to cure on the roadway then sweep up excess chip.
- Place the fog seal coat of oil (Quick Set Fog Seal Cationic Asphalt).
- Fog seal coat covers and seals in the chips and creates a clean canvas for our paint crews to put new markings on the roadway.

Chip Gradation



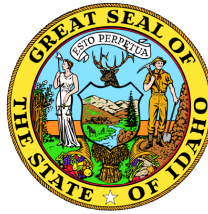
➤ 1/4" Specification

Spec	Sieve	
	mm	in
	203	8
	178	7
	152	6
	127	5
	102	4
	76	3
	50	2
	25	1
	19	¾
	12.5	½
100	9.5	3/8
85-100	6.5	¼
30-60	4.75	#4
0-5	2.360	#8
	1.180	#16
	0.600	#30
	0.300	#50
	0.150	#100
0-2	0.075	#200

➤ 3/8" Specification

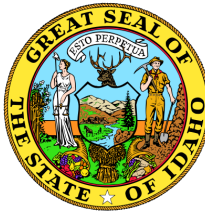
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95-100	9.5	¾
0-5	4.75	#4
0-3	2.360	#8
	1.180	#16
	0.600	#30
	0.430	#40
	0.300	#50
	0.150	#100
0-2	0.075	#200

Stats



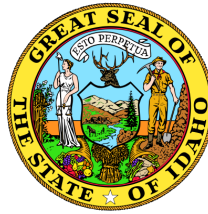
- Have chip sealed over 2,500 lane miles in the last 6 years.
- Crews are geared to chip seal, on average, 450 lane miles per year.
- Crews are able to complete chip seal program within 90 days or less, on average.

Chip Seal Video



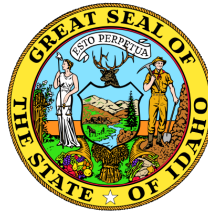
- Click [link](#) to be taken to YouTube video.

Additional Treatments

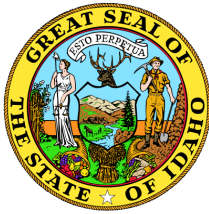


- Chip sealing is not viable in downtown locations or in cul-de-sacs as process is inefficient.
- Pavement still needs to be treated so other options are used.
- Microsurfacing is used on downtown areas due to its quick cure time and you can get traffic back on it in 1 hour.
- Slurry seal is used for cul-de-sacs as it cures slower and you can manipulate it for a longer periods of time to correctly seal the pavement.

Additional Treatments



- Slurry sealed approx. 368,916 square yards of cul-de-sacs over the last 5 years.
 - Approx. 74,800 square yards on average per year.
 - Our current inventory of cul-de-sacs is over 4,200
- Microsealed approx. 206,529 square yards over the last 4 years. That is approx. 51,600 square yards on average per year.



Thank you

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Anywhere!