



Nevada DOT Crack Sealing & Filling

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Rocky Mountain West Pavement Preservation Partnership

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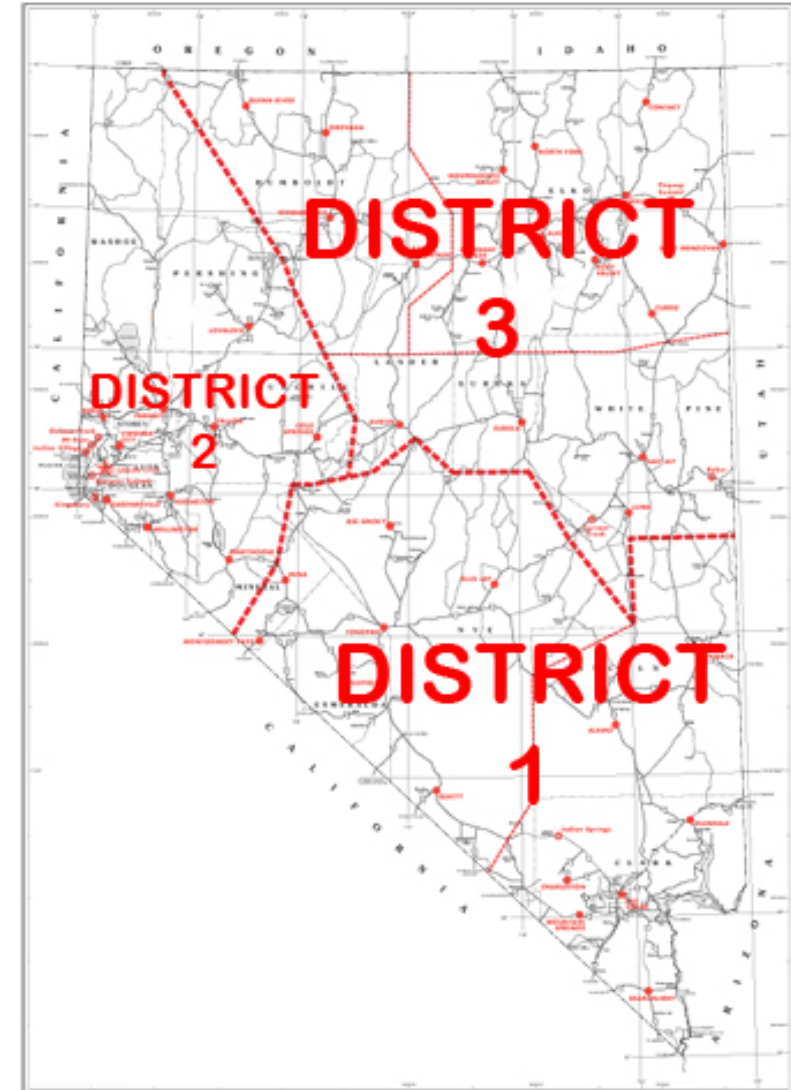




About Nevada



- Area: 110,540 square miles
- Population: 2.84 million
- NDOT Employees: 1,783 FTEs
- NDOT CL miles of maintained road: 5,399
- 131 CL miles rigid pavement
- 5,268 CL miles flexible pavement
- 22% (1,177 CL miles) need preservation/rehab
- Number of Class 40 Patch/Crack Sealers: 29





Class 40 – Patch/Crack Sealer



- Mostly used for roadway asphalt crack filling operations
- NDOT owns all Class 40s used by the Department – no rentals
- Aging fleet
- Units are between 11 an 24 years old
- Frequently down for repairs
- Make of Class 40 used by NDOT
 - Bearcat
 - Leeboy
 - Aeroil
 - Cimline
 - Supershot
 - Crafc0



Unit 2523



1998 Bearcat BK-40



Unit 2825



1998 Bearcat BK400



Unit 3219



2004 Crafcro EZ400



Open Term Contract - Crafc



- **CRACKFILLER-A:** Single Component, Hot Applied, Sealant (Asphalt and Ground Rubber) for use in Filling Cracks in Asphalt Road Surfaces throughout the State of Nevada. Material shall be Crafc 34232 Asphalt Rubber Type 2.
- **CRACKFILLER-B:** Single Component, Hot Applied, Elastically Modified, Crack Sealer for use in Filling Cracks in Asphaltic or Concrete Road Surfaces Throughout the State of Nevada. Material shall be Crafc 34518 Polyflex Type 2.
- **CRACKFILLER-C:** Single Component, Hot Applied, Elastically Modified, Crack Sealer for use in Filling Cracks in Asphaltic or Concrete Road Surfaces Throughout the State of Nevada. Material shall be Crafc Inc. 34521 Polyflex Type 3.
- **CRACKFILLER-D:** Single Component, Hot Applied, Modified ASTM D3405, low modulus, low application temperature, self-leveling sealant for use in filling cracks in asphaltic or concrete road surfaces throughout the State of Nevada, Material shall be Crafc Inc. 34231 Roadsaver 231.



Open Term Contract - Maxwell



- **CRACKFILLER-A:** Single Component, Hot Applied, Sealant (Asphalt and Ground Rubber) for use in Filling Cracks in Asphalt Road Surfaces throughout the State of Nevada. Material shall be Maxwell Products Elastoflex 47.
- **CRACKFILLER-B:** Single Component, Hot Applied, Elastically Modified, Crack Sealer for use in Filling Cracks in Asphaltic or Concrete Road Surfaces Throughout the State of Nevada. Material shall be Maxwell Elastoflex 47A.



Open Term Contract



Material is to be delivered in truckload lots (approximately 25 tons) and packaged in two 25 lb. or 30 lb. blocks per box or in 5 gallon sealed containers on NON-RETURNABLE wood pallets. The material shall be capable of being melted and applied to joints and cracks at a temperature below 400F. and shall be guaranteed flash free at a temperature of at least 20 degrees Fahrenheit above the recommended application temperature.



District II



- 1 compressor & 1 hot pot
- Cracks ¼ inch or wider
- Perform in spring and fall (during cool weather)
- Priority for roads scheduled for chip seal
- 6 months to one year before chip seal

Production Rate

- Roughly 1.0 – 1.5 mile/day
- Roughly 1 pallet of product/mile





District II - West



District II – West (mostly urban or mountain)

- No overband
- Fill crack just shy of finished grade of asphalt

District II – East (mostly rural desert)

- Squeegee and overband





Statewide Miles of Crack Filling



- FY2013 1,335 lane/miles
- FY2014 1,763 lane/miles
- FY2015 2,455 lane/miles





Statewide Pounds of Filler Used & Costs



- FY2013 598,843 lbs \$18,320
- FY2014 1,177,929 lbs \$4,214
- FY2015 873,522 lbs \$2,368





Statewide Labor Hours Used & Costs



• FY2013	20,774 hours	\$361,758
• FY2014	40,361 hours	\$721,797
• FY2015	27,529 hours	\$512,086





PCC Crack Sealing



- 2.5% CL miles of NDOT Roadway are rigid pavement
- PCC Crack Sealing is relatively new for NDOT
- Contract test section on I580 testing 4 products
- Contract test section implementation underway now
- Profile grind after crack sealing
- District Maintenance forces are also testing PCC Crack Sealing products (Crafco)



PCC Crack Sealing



- Testing 4 products

<u>Manufacture</u>	<u>Product Name</u>	<u>Product Type</u>
• Crafcoc	TechCrete	synthetic resin
• Global Sealer Technologies	Elephant Armor	cementitious patch
• Willamette Valley Co	POLYQuik FastPatch	urethane
• Marketing Associates, Inc	Fibercrete	synthetic resin



Elephant Armor



- Route Crack 4” wide by 2” deep
- Seems to be holding up
- Can be placed quicker than TechCrete and Fiber Crete



TechCrete



- Similar to FiberCrete
- Route Crack 4" wide by 2" deep
- Seem to be holding up
- Needs bulking stone if profile grinding after application



FiberCrete



- Similar to TechCrete
- Route Crack 4" wide by 2" deep
- Seem to be holding up
- Needs bulking stone if profile grinding after application



POLYQuik FastPatch



- Minimal preparation required
- Sandblast, clean, blow
- Multiple failures so far



Challenges



- Aging equipment
- Significant reductions in 3R funding
- High staff attrition rate / lots of new people
- Training not keeping up with employee turnover



Looking Forward

- Working towards PCC Crack Sealing program
- Working towards renting new equipment
- Looking at new sealant products





Thank You



Questions?

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