Montana Department of Transportation
Research Programs

EVALUATION OF CRACK-SEALING MILLED PAVEMENT IN THE EFFORT TO REDUCE TRANSVERSE CRACKING

Final Report 2018

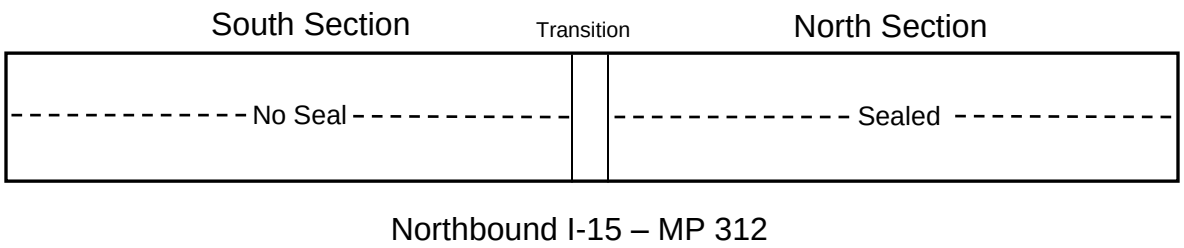
Location:	Teton County, Interstate 15, Approximately Milepost 312; Northbound Lanes
Project Number:	Dutton N & S IM 15-6(35)309
Type of Project:	Crack-sealing of Milled AC Pavement
Principal Investigator:	Craig Abernathy: Experimental Program Manager
Date Constructed:	August 2005
Evaluation Date:	March 2018

Objective

To determine if crack sealing milled pavement prior to overlay will deter the migration of transverse cracking, or have an effect on pavement performance, when compared to an adjacent milled pavement that receives no crack sealing treatment.

Experimental Design

Two 1000 ft. sections were delineated during construction in the I-15 northbound lanes at approximately milepost 312. One section (north) received the normal crack seal procedure and the second section (south) received no treatment. A 100 ft. transition zone separates the two sections. An ongoing crack map of the sections is included in this report to compare the progression of cracks to both sites.



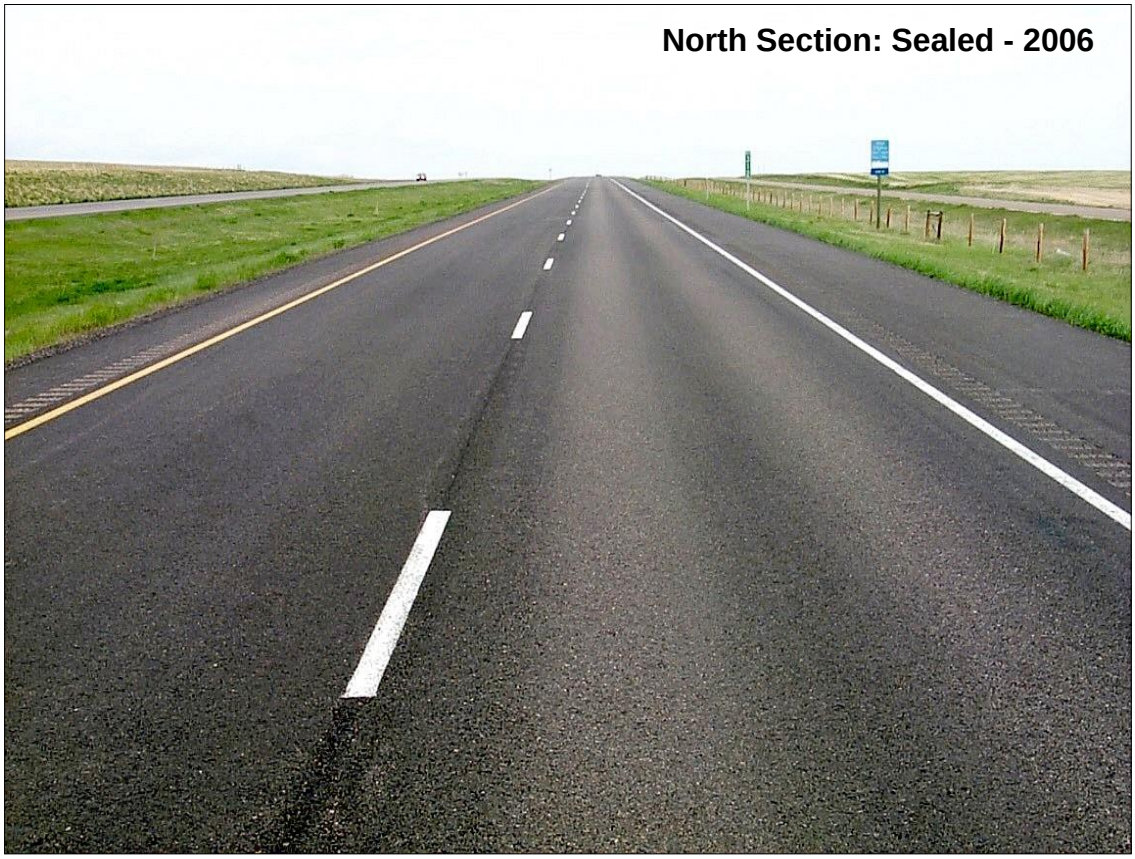
This project was constructed during the summer of 2005. The project has been chipped sealed prior to the 2007 analysis. The 2010 site inspection did not take place. The following images are sample shots during construction and project performance to date.

Grinding in process

Depth and width of grind

Sealed with Crafco Hot-applied Modified Asphalt Sealant

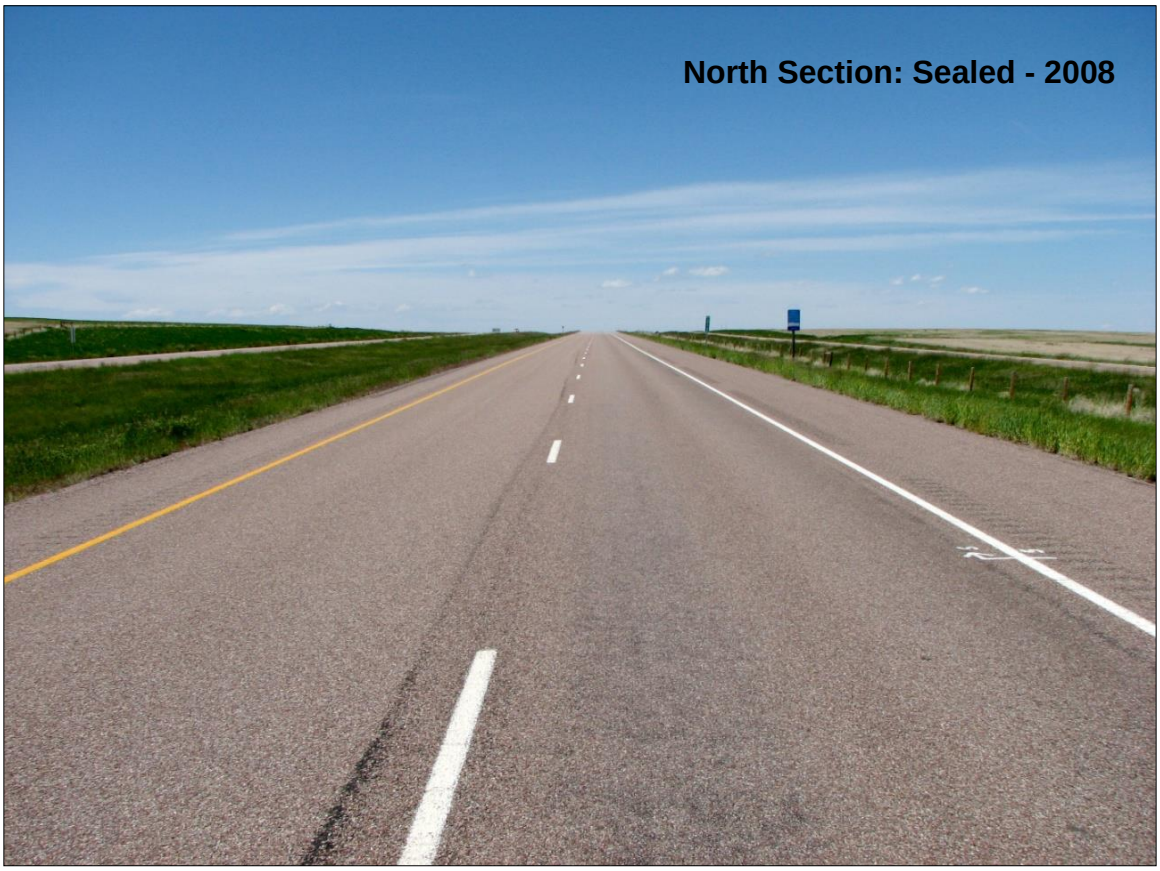
South Section: No Seal - 2006

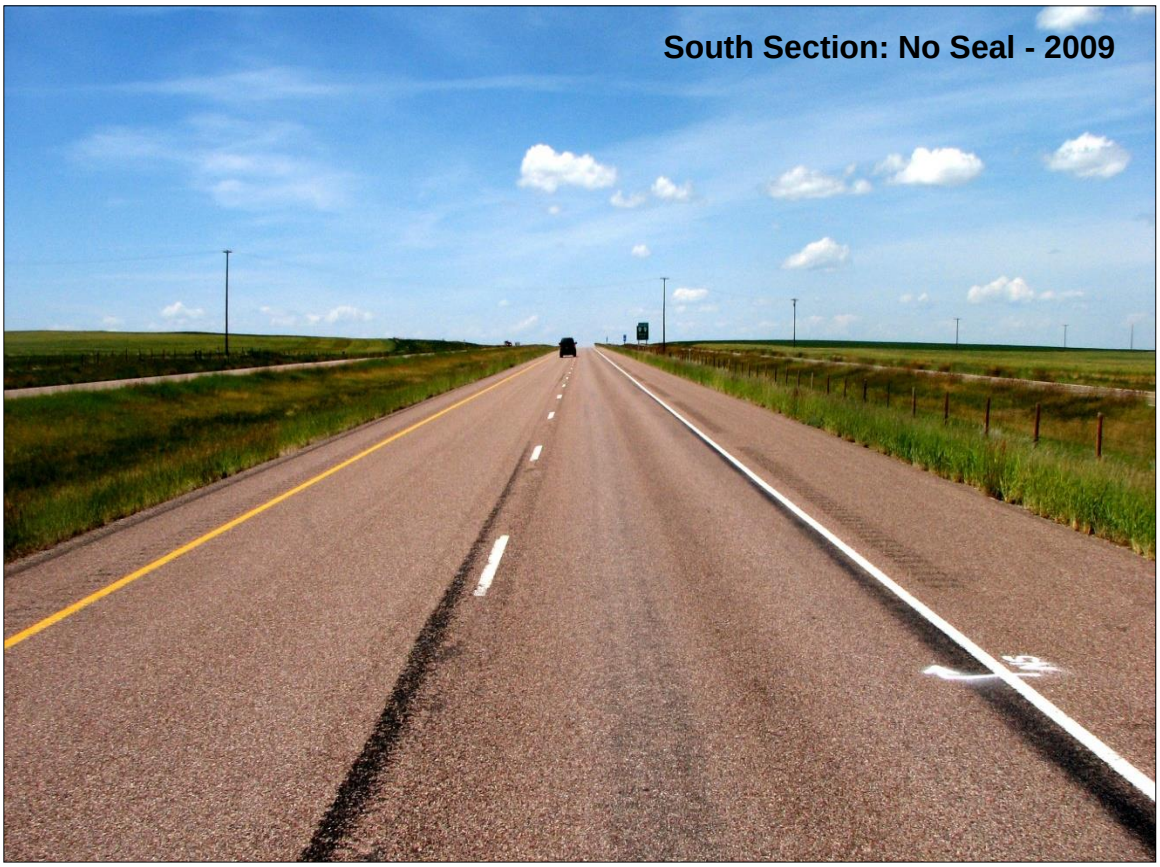

North Section: Sealed - 2006

South Section: No Seal - 2007

North Section: Sealed - 2007

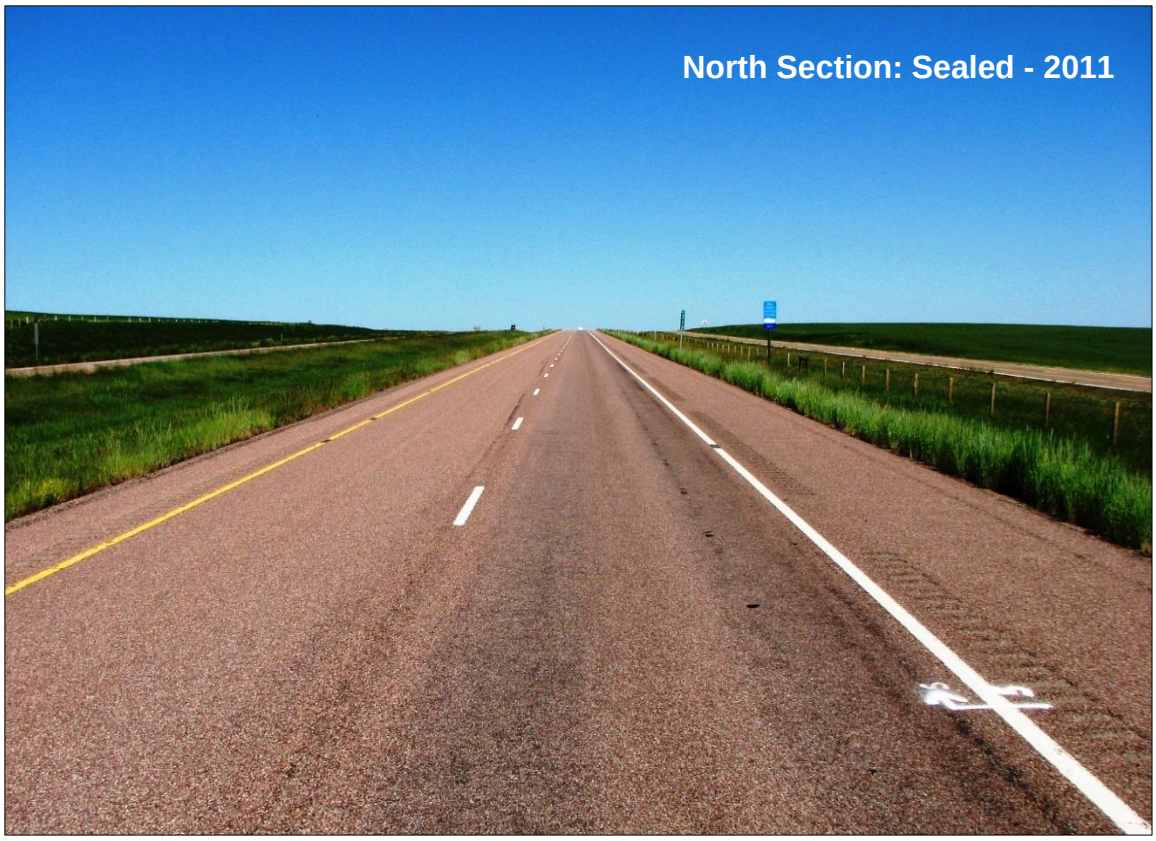
South Section: No Seal - 2008

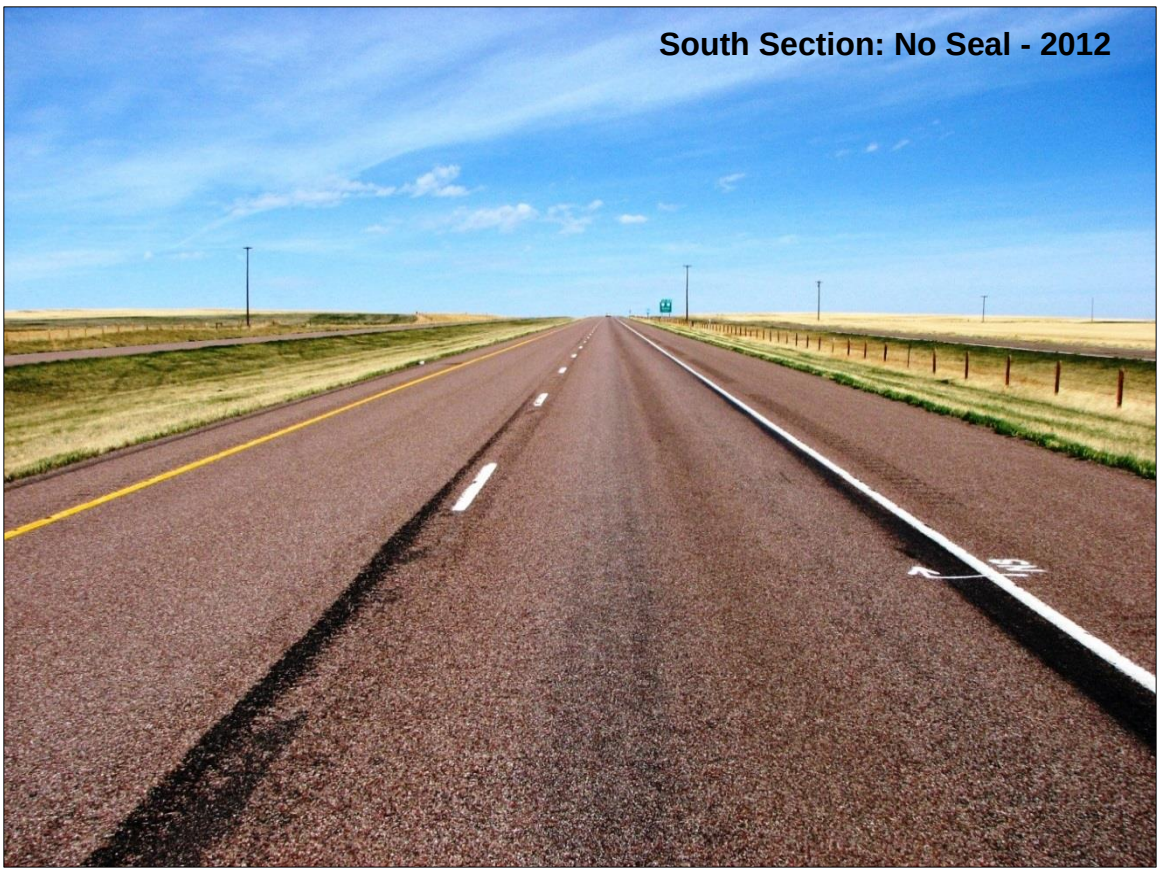

North Section: Sealed - 2008


South Section: No Seal - 2009

North Section: Sealed - 2009

South Section: No Seal - 2011


North Section: Sealed - 2011


South Section: No Seal - 2012

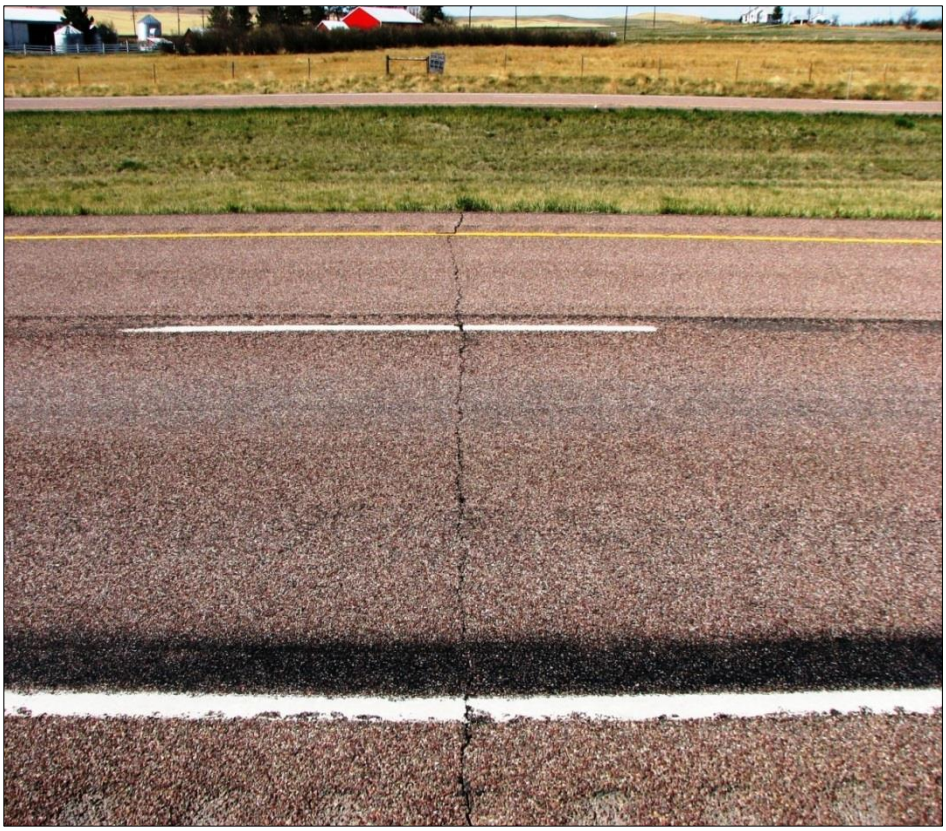
North Section: Sealed - 2012

South Section: No Seal - 2013

North Section: Sealed - 2013

🡸 Example of low-severity cracking on sealed north section (2009)

🡻 Example of low-severity cracking on un-sealed south section (2011)



🡐 Example of low-severity cracking on un-sealed south section (2012)

🡐 Example of low-severity cracking on un-sealed south section (2013)

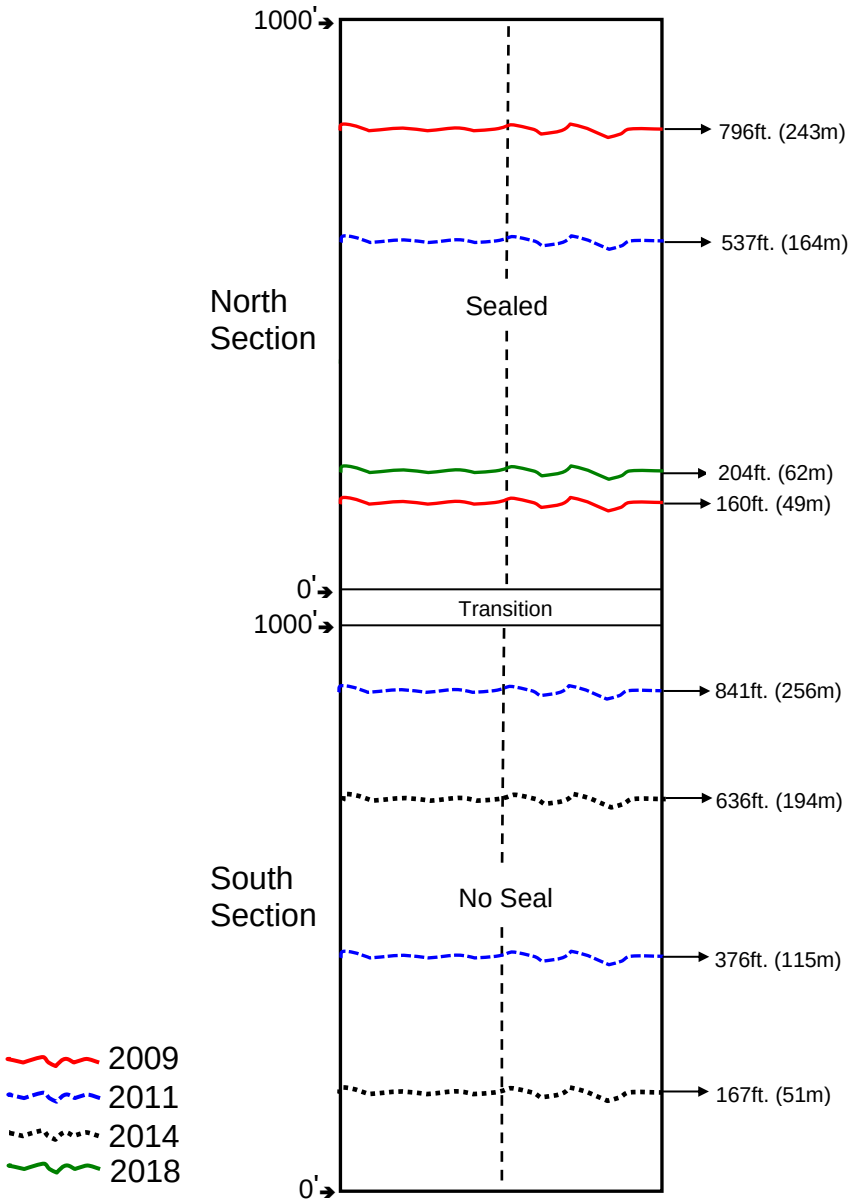
Project Overview - 2014

Project Overview - 2015

Documented Cracking – Interstate 15/Northbound lanes: Mile Point 312

The south and north sections were initially chosen due to the homogeneous condition and identical number of cracking on both sites. No transverse cracking occurred from construction date of 2005 to 2008. During the 2009 inspection the sealed north section had developed two low-severity cracks (red lines). The blue lines represent cracking to date (low-severity) documented with the 2011 site inspection; with two additional cracks appearing in the no-seal section between 2013 & 2014. To date all cracks on both sections have been crack sealed at the surface.

One additional low-severity transverse crack was documented in early 2018 in the sealed section of the project. The graph depicts the approximate location and distance from the start of each test section, (crack locations approximate; not to scale). No additional site inspections will occur since the section of interstate is being repaved.



To view this report online and other experimental projects go to:

http://www.mdt.mt.gov/research/projects/crack_sealing.shtml