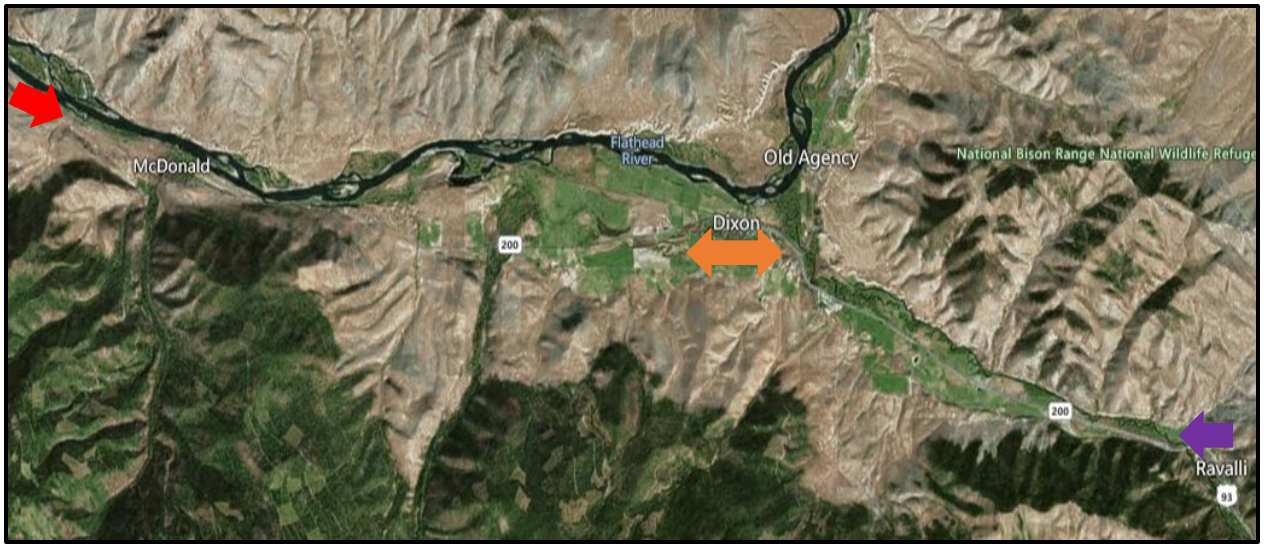
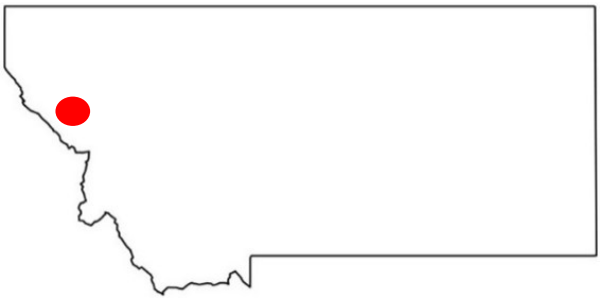
Experimental Feature Evaluation
December 2022

Experimental Feature:	Chip Seal Emulsion Comparison
Location:	Missoula District, Sanders County, MT Hwy 200, Route Posts 98.7 – 116.1
MDT Project Name:	Dixon – West & Dixon – Ravalli
MDT Project Number:	STPP 6-1(155)99 & STPP 6-1(153)109
Experimental Project Number:	MT-19-02
Principle Investigator:	Chad DeAustin, Experimental Project Manager, (ExPM)
Technical Contact:	Jim Davies
Construction Date:	July 2019
Date of Inspections:	April 2020, August 2021, July 2022

Project Map





- CRS-2p emulsion, RP 98.7 – 108.5
- CHFRS-2p emulsion, RP 108.5 – 116.1

Feature Description & Outline

This experimental feature is the comparison of two chip seal emulsions. For Dixon – West, Cationic Rapid-Set High-Viscosity Polymer Modified (CRS-2P) emulsion was used from route post 98.7 to 108.5. For Dixon – Ravalli, Cationic High Float Rapid-Set High-Viscosity Polymer Modified (CHFRS-2P) emulsion was applied from route post 108.5 to 116.1. Both sections used MDT type 1 chips. CRS-2P and CHFRS-2P are the most common chip emulsions used by MDT and the adjacent chip seal sections provide an optimal evaluation of the two products.

Evaluation Procedures & Schedule

The measure of effectiveness prevalent with this project are:

- Construction practices (constructability, construction time, cost effectiveness, etc.),
- Visual inspection and comparison of the chip seals.

In accordance with MDT's Experimental Features Procedures, the Experimental Project Manager will monitor and report on performance for a minimum of five years annually. This includes delivery of a work plan, construction report, annual reports, and final project report.

2019:	Installation/Construction Report
2020-2023:	Annual Inspections/Evaluation Reports
2024:	Final Evaluation/Final Report

A dedicated webpage provides all reporting for the experimental feature.

2022 Inspection

Both sections show normal wear for a chip seal. The crack seal bleeding, first noticed in 2020, is still noticeable but has not increased in amount. Overall, very little change was observed from 2021.

RP 98.7, begin CRS-2P section, view east.

RP 99, CRS-2P, transverse view.

RP 102.8, CRS-2P section, view east.

RP 102.8, CRS-2P section, close-up view of the chip seal at the centerline.

RP 108.5, end CRS-2P section, view west.

RP 108.5, begin CHFRS-2P section, view east.

🡅 RP 108.5, CHFRS-2P section, good example of crack seal bleeding. There doesn't appear to be any chip loss.

🡅 RP 111.8, CHFRS-2P section, view west.

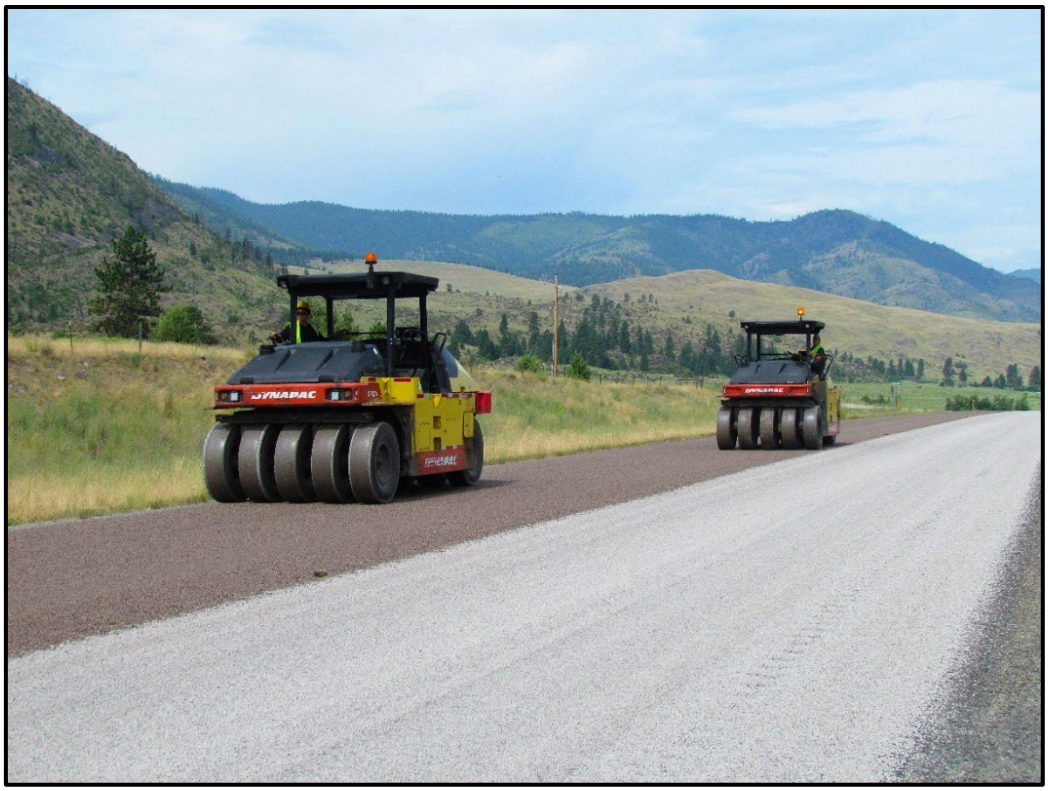
RP 111.8, CHFRS-2P section, close-up of the chip seal surface.

RP 116.1, end CHFRS-2P section, transverse view.

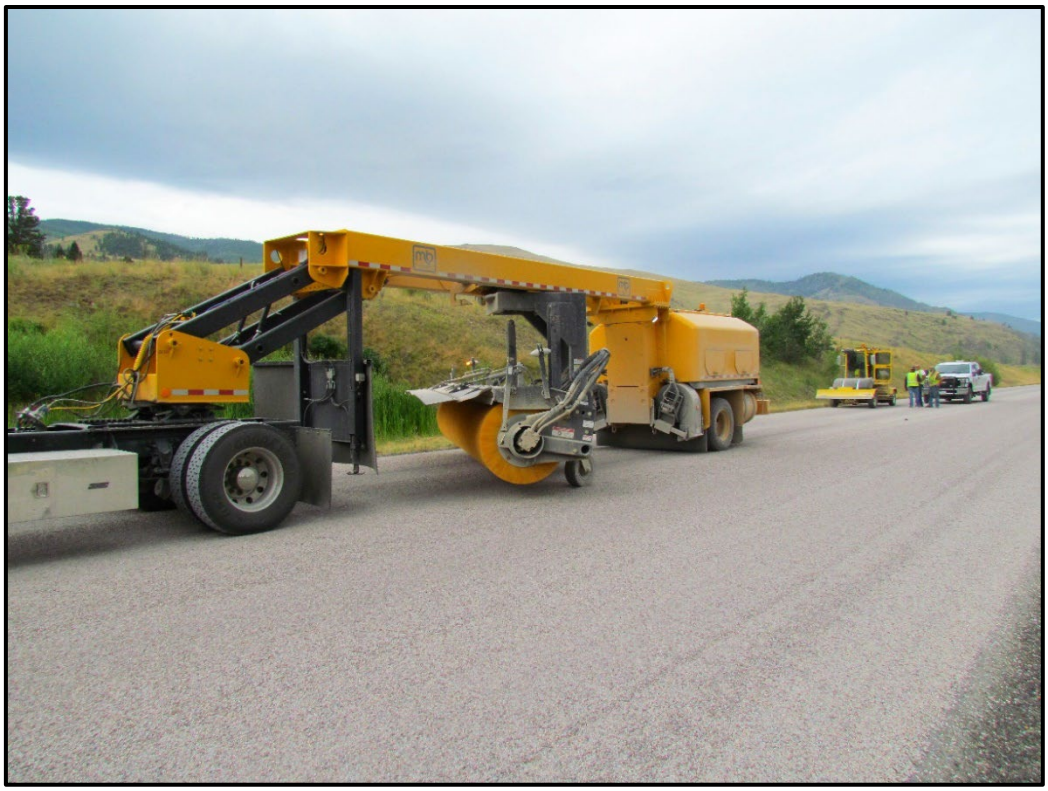
Construction Documentation – July 2019

Chip emulsion application.

Self-propelled chip spreader placing chips.



Two nine-wheel pneumatic rollers were used to set the chips.



Several sweepers were used to remove loose chips.

Close-up of final CRS-2P product.

Close-up of final CHFRS-2P product.

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