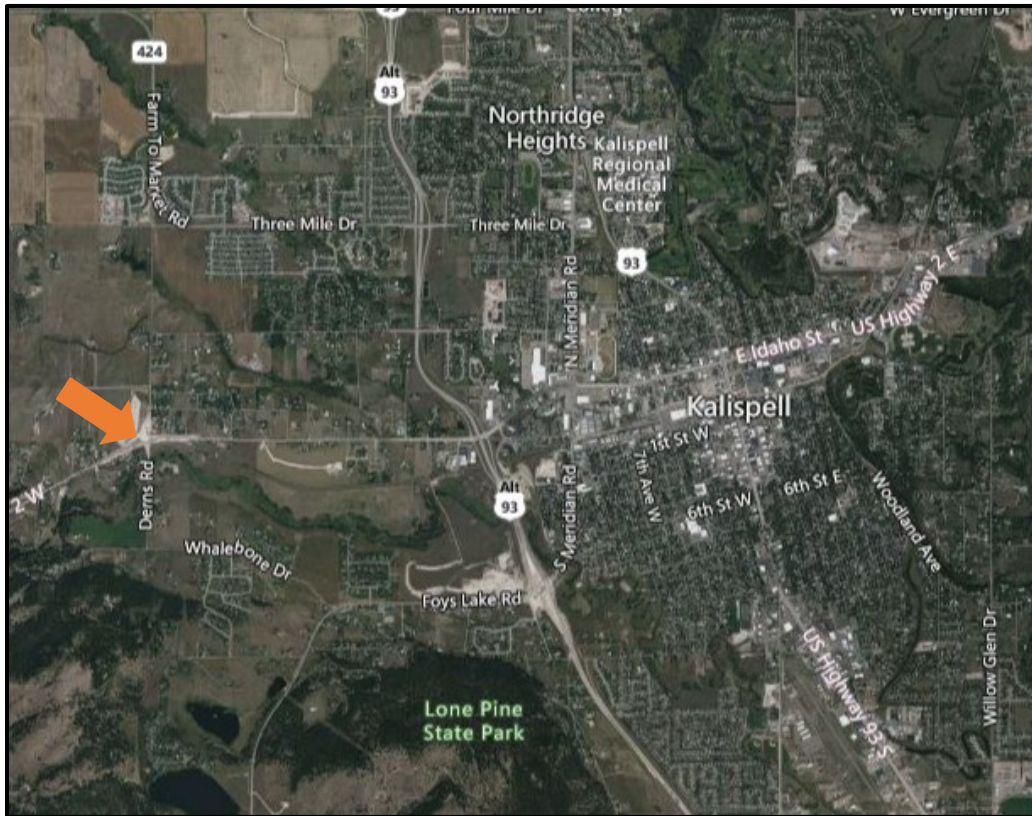


**Experimental Feature Evaluation  
 July 2023**

<b>Experimental Feature:</b>	Polymer Overlay on PCCP
<b>Location:</b>	Missoula District, Flathead County, Kalispell, US Hwy 2, RP 118
<b>MDT Project Name:</b>	SF 139 – Dern/Spring Creek Reconstruct
<b>MDT Project Number:</b>	HSIP-NH 1-2(193)118
<b>Experimental Project Number:</b>	MT-21-05
<b>Principle Investigator:</b>	Chad DeAustin, Experimental Project Manager, (ExPM)
<b>Technical Contact:</b>	Oak Metcalfe, Materials Engineer
<b>Construction Date:</b>	June 2022 (Polymer Overlay Install)

**Project Map**



## Feature Description & Outline

This project is the reconstruction and conversion of a four-way intersection into a roundabout. Prior to construction, east/west traffic using US Highway 2 was free flowing and north/south traffic was controlled by stop signs. The roundabout is constructed of PCCP and the experimental feature for this project is the addition of a polymer overlay to the PCCP.

A polymer overlay is a treatment that uses a combination of polymer and aggregate to coat a concrete surface. This treatment has many benefits including: protecting the concrete surface, improving safety by increasing skid resistance, and extending the life of the concrete by sealing cracks. This treatment is becoming common practice on many of the new bridge decks throughout Montana because of these benefits. MDT is hoping to see the same results on this PCCP application.

## Evaluation Procedures & Schedule

The measures of effectiveness prevalent with this feature are:

- Construction practices (constructability, construction time, cost effectiveness, etc.),
- Visual documentation of wear of the polymer overlay,
- Visual documentation of PCCP distress, focusing on joints.

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.

2022: Installation/Construction Report  
2023-2027: Annual Inspections/Evaluation Reports  
2027: Final Evaluation/Final Report

A dedicated [webpage](#) will display all reporting for the experimental feature.

## 2023 – June Review

The polymer overlay and concrete show no signs damage besides expected wear. All areas of concern from the construction documentation are performing as expected. The concrete expansion joints are all visible through the polymer overlay. This could create an area for the polymer overlay to wear off the concrete surface.





↑ View north of the main section of the roundabout.



↑ Close up view of the surface and texture of the polymer overlay.



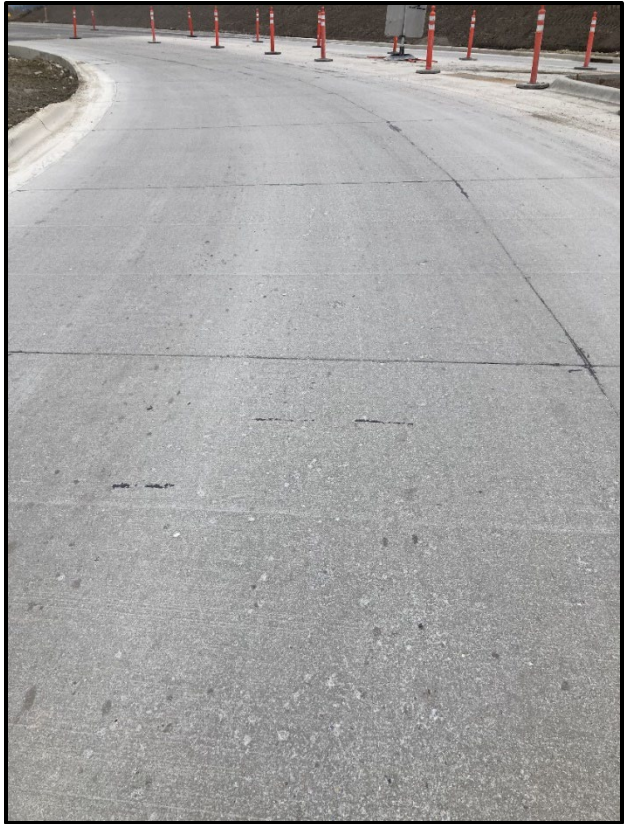
Construction Documentation



↑ Sept. 2021 Aerial images of construction progress. ↓ Nov. 2021







Photos of the roundabout construction from MDT inspection team.





MDT Research personnel were not able to be onsite during the construction of the polymer overlay. Per the MDT inspection crew, there were no issues during installation. Note that there was damage to the concrete from the time of placement to when the polymer overlay was installed. Those areas were fixed but will be areas to watch throughout the duration of the monitoring schedule.



↑ View of roundabout from southbound lane of Spring Creek Road.



↑ Closer view of polymer overlay in northbound exit onto Spring Creek Road.





↑ Because of the shape, the exits and entrances of the roundabout were sealed with the polymer overlay first with the inner circle being placed after. This created a noticeable edge that is considered an area to watch.



↑ Close-up view of the texture of the polymer overlay.





↑↓ Area to watch in the southbound lane of Spring Creek Road. There is a small section that the polymer overlay failed or experienced damage of some kind.







↑ Aerial photo of the completed polymer overlay on the PCCP roundabout.



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