EXPERIMENTAL PROJECTS WORK PLAN

Location: Targhee Pass-West Yellowstone Gallatin County: State Highway 20 (N-12) – Reference Point 0.0-9.4: Butte District

Project Name: Targhee Pass-West Yellowstone

Project Number: NH 12-1(20)0: UPN 8762000

Experimental Project No. MT-15-01

Type of Project: Fog Seal on Chip Seal (FSCS)

Principal Investigator: Craig Abernathy: Experimental Project Manager (ExPM)

Technical Contact: Greg Zeihen P.E.: Pavement Research Engineer Specialist

Description

The project has been nominated to compare wether the performance of a fog seal over the top of a chip seal (FSCS) will extend the service life of the pavement treatment compared to that of a conventional chip seal (seal and cover).

The area selected is a high mountain (average project elevation of 6800 ft.) section of state highway with extreme weather conditions which maximize maintenance activities and which has severely limited the effectiveness of past pavement preservation treatments.

A special provision will be drafted to address application rates, materials, and timing restrictions for the fog seal, etc., which will be detailed in the construction report.
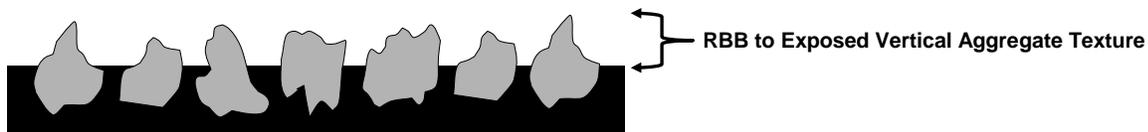
Experimental Design

The Project will be located on State Highway 20 (N-12) from the Montana/Idaho border to West Yellowstone; starting at reference point (RP) 0.0 and ending approximately at RP 9.4.

The FSCS (test section) will encompass the westbound lane of the project length, with the eastbound lane as the conventional chip seal (CS) control section. Figure 1 represents an overview of the project.

Evaluation Procedures

The purpose of an experimental features report is to document the phases and events of any given project to gain the reader an understanding of the general activities required to install or incorporate the research element into an active construction or maintenance project. This report also establishes a baseline for defining performance for any given feature under actual service conditions to determine its relative merits.

One of the objectives of the report will attempt to show the average texture of embedded chip within the residual bitumen binder (RBB) on the FSCS sections as compared to the control. The level of objective relief (the visual appearance of the ratio of binder to the exposed vertical area of the aggregate (as seen in diagram below) to compare the level of an additional binder layer for a more apparent locking of chip, (the level of texture is not an indicator of friction coefficient) may have a tighter bond with the RBB. In addition, to ascertain the level of chip loss between the sections.

RBB to Exposed Vertical Aggregate Texture

Research will document the installation phases for best practice and any construction concerns germane to the performance of the project test and control section. Semi-annual inspections will report on seal integrity and any other measurable outcomes. Additional site inspections may supplement the semi-annual visits based on need. Monitor and report on long-term performance.

Construction Documentation: Will include information specific to the installation events of the FSCS and conventional seal and cover sections.

Post Documentation: Will entail semi-annual inspections of the seals durability based on visual distress.

Evaluation Schedule

Research will monitor performance for a minimum period of five years annually, with every year up to ten years (informally if project requires additional quantitative data). This is in accordance with the Department's Experimental Project Procedures. Delivery of a construction/installation report, interim, annual or semi-annual reports is required as well as a final project report (responsibility of Research). A web page with all project information is located at: *http://www.mdt.mt.gov/research/projects/seal_coat.shtml*

2016:   Installation/Construction Report

2017-2020:   Semi-Annual Inspections/ Annual Evaluation Reports
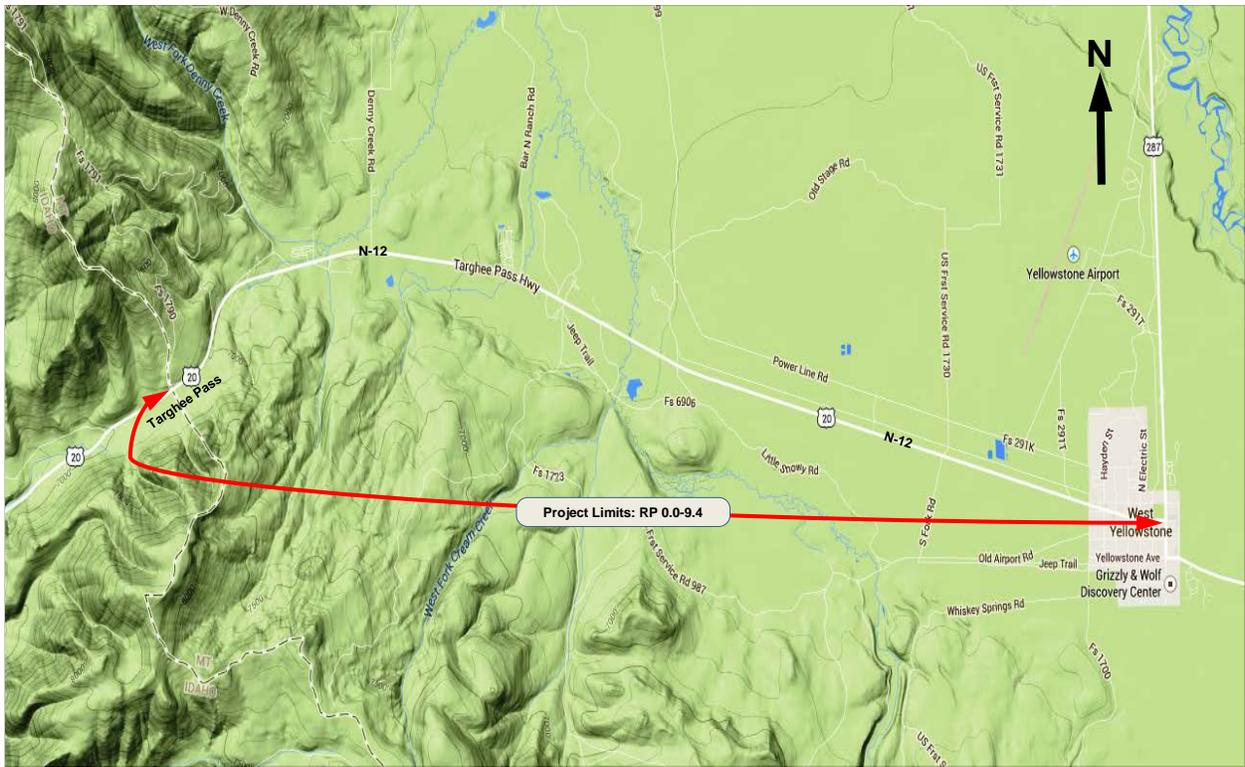
2021:   Final Evaluation/Final Report

Figure 1

All Values are Approximate: Not to Scale