

## EXPERIMENTAL PROJECTS WORK PLAN

### Evaluation of Durable Traffic Pavement Marking Tape (PMT)

<b>Location:</b>	Lewis & Clark County, Helena; Great Falls District: Highway 12 (N-8) – Intersections of Euclid/West Lyndale and Last Chance Gulch
<b>Project Name:</b>	Lyndale Intersections
<b>Project Number:</b>	MDT Maintenance
<b>Experimental Project:</b>	MT-14-02
<b>Type of Project:</b>	Pavement Markings Application
<b>Principal Investigator:</b>	Craig Abernathy: Experimental Project Manager (ExPM)
<b>Technical Contact:</b>	Doug McBroom, MDT Maintenance Operations

#### Description

Keeping pavement markings sustainable on concrete pavement intersections in the state of Montana is a challenge in areas of high ADT. Typically epoxy markings will start to degrade within two months, with total failure occurring between 14-18 months. Waterborne paint performs even worse, typically only getting about three months of life.

This shortened lifespan costs the Department time resources and money. The Maintenance Division proposes to evaluate two types of long lasting tapes on two portland cement concrete pavement (PCCP) intersections, Lyndale Ave and Last Chance Gulch with a 2012 AADT of 21,000, and Lyndale Ave and Benton which has an AADT of 24,700. These locations will provide a good “test bed” for products that are made to take higher ADT such as high-durable traffic tape.

#### Experimental Design

Tape applications will include longitudinal; centerline, turn lanes, symbols, and legends for each intersection.

The chosen products will be the Swarco Director 35 Intersection Grade Permanent

Pavement Marking Tape and 3M's Stamark Pavement Marking Tape (the 3M product; for the skips 380-5 IES will be used, for transverse N380 and for all others 380IES will be used).

The Lyndale and Benton intersection; designated as test site 1 (TS1), will receive the Director 25 treatment. The Lyndale and Last Chance Gulch intersection; designated as test site 2 (TS2), will receive the 3M treatment. The tape pavement configurations will receive a groove depth of 100 mils (+/- 10 mils).

## **Evaluation Procedures**

**Installation Documentation:** The Research Section in consultation with Maintenance staff on site, will document the installation phases involving preparation of the sites, equipment used, PMT placement, weather, and specification conformance etc.,

**Post Documentation:** Will conduct weekly site visits (for duration of one month) to inspect markings integrity; after that monthly inspections for the next three months. Semi-annual inspections will then be in place. Additional site inspections will be added as needed.

An initial report will published approximately five months after installation. Annual reports will be published encompassing the initial report and semi-annual inspections.

The Maintenance Division will be responsible for the compilation of retro-reflectivity readings of the applied tape at initial placement and at a post-sampling of 3, 6, 9, 18, 24, 36, 48, and 60 months for inclusion into the annual and final reports.

## **Evaluation Schedule**

Research will monitor and report on performance for a minimum period of five years annually, with every year up to \*ten years (informally). 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 will be dedicated to display all reporting from the project.

2014:	Installation Report
2015-2018:	Semi-Annual Inspections/ Annual Evaluation Reports
2019:	Final Evaluation/Final Report

\*If considered the extra data collection and analysis will add value to the overall results of the project.

## Supplemental



← Aerial view of the Euclid/Lyndale & Benton Intersection (TS1).

This site will receive the Swarco Director 25 tape application.



← Aerial view of the Lyndale & Last Chance Gulch Intersection (TS2).

This site will receive the 3M Stamark tape application.

More information regarding the pavement marking tapes may be found at:

### **3M**

[http://solutions.3m.com/wps/portal/3M/en\\_US/NA\\_roadway/safety/products/pavement-markings/stamarkdurableletapes/](http://solutions.3m.com/wps/portal/3M/en_US/NA_roadway/safety/products/pavement-markings/stamarkdurableletapes/)

### **SWARCO**

<http://www.swarco.com/northamerica/Products-Services/Pavement-Marking-Tapes/Permanent-Pavement-Marking-Tapes/DIRECTOR-35>