Montana Department of Transportation
Research Programs
January 2016

EXPERIMENTAL PROJECTS WORK PLAN

TAPCO (BLINKERBEAM/BLINKSYNC) LED-CHEVRON TRAFFIC CONTROL SIGNAGE

Location:	US 12 (N-8): Lewis & Clark County/Great Falls District; from RP 27.614 to RP 28.215
Project Name:	SF 139 MacDonald Pass SFTY IMPRV
Project Number:	HSIP 8-2(90)28
Experimental Project No.	MT-16-02
Type of Project:	Sequential Dynamic Curve Warning System
Principal Investigator:	Craig Abernathy: Experimental Project Manager (ExPM)
Technical Contact	Michael Grover, P. E. Traffic Project Engineer

Description

Installation of the TAPCO BlinkerBeam & BlinkSync dynamic Light-Emitting Diode (LED) curve warning system to provide additional signage and delineation to better depict the curve to area motorists. The TAPCO product is a radio-based wireless chevron which is activated when a vehicle approaches to warn and guide motorists through the curve.

The selected curve crash analysis reports a total of twenty-four (24) crashes during the time frame of January 2007 through December 2013, with the main trend of roll over crashes. In addition to the automated chevron system, shoulder rumble strips and added curve warning signage. These safety improvements yield an estimated benefit to cost ratio of 20.33 assuming a project cost of $55,264.

Experimental Design

Current layout of the chevrons will be placed on the eastbound lane (Southside shoulder) encompassing five (5) automated directional sign panels. Chevrons will be activated by approaching vehicles using radar which will signal the main transmitter to initiate the chevron receivers to flash sequentially to navigate the driver through the curve. Instead

of solar panels and batteries to supply power, these units will be wired for direct service.

Evaluation Procedures

Research will document the installation for best practice and any constructions concerns germane to the performance of the TAPCO chevron product. Semi-annual inspections will document the peripheral equipment, sign condition, and any other measurable outcomes. Additional site inspections may supplement the semi-annual visits based on need. Monitor and report on long-term performance.

Documentation of actual nighttime chevron activation will supplement the reporting. Maintenance staff will be interviewed regularly to report on any activities involving upkeep of the units. A detailed crash analysis for the subject project determining a before and after severity index will be included in the final report.

Construction Documentation: Will include information specific to the installation events of the TAPCO system and conventional signing.

Post Documentation: Will entail semi-annual inspections of the chevron installation. A nighttime documentation of the unit in use and any maintenance required to keep the units in service.

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.

2016:	Installation/Construction Report
2017-2020:	Semi-Annual Inspections/ Annual Evaluation Reports
2021:	Final Evaluation/Final Report

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

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