Montana Department of Transportation
Research Programs
October 2012

EXPERIMENTAL PROJECTS WORK PLAN

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

Location: MT Highway 41 (P-49) Reference Point 13.7-15.1

Project Name: Curve Near Beaverhead Rock

Project Number: HSIP 49-2(10)14

Experimental Project No. MT-12-09

Type of Project: Sequential Dynamic Curve Warning System

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

Description

Installation of the TAPCO BlinkerBeam & BlinkSync dynamic 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 device which is activated when a vehicle approaches to warn and guide motorists through the curve.

The selected curve crash analysis reports on seventeen (17) crashes during the time frame of January 2001 through June 2012, four of those events involving fatalities. A reconstruct project is scheduled for 2018 which will correct the roadway geometrics attributing to the safety issue. In the interim this sign system will attempt to alleviate the current hazard and be in service for a sufficient duration to establish a trend and determine overall performance.

Experimental Design

Current layout of the chevrons will be placed on the northbound lane (southside shoulder) encompassing eleven (11) directional sign panels. Every odd number sign (1, 3, 5, 7, 9, and 11) will have the TAPCO device. Each odd post will have two (2) solar powered blinker chevrons angled to capture both southbound and northbound traffic. 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. The even numbered signs (2, 4, 6, 8, and 10) will have installed type 11 highly-retroreflective dual panels per post angled as the blinker chevrons to capture both lanes of travel. Additional warning signage and delineation enhancements will be installed on both lanes approaching the chevron system to caution drivers of the approaching curves. A current estimated cost of installation is at 35K.

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.

2013:	Installation/Construction Report
2014-2017:	Semi-Annual Inspections/ Annual Evaluation Reports
2018:	Final Evaluation/Final Report

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