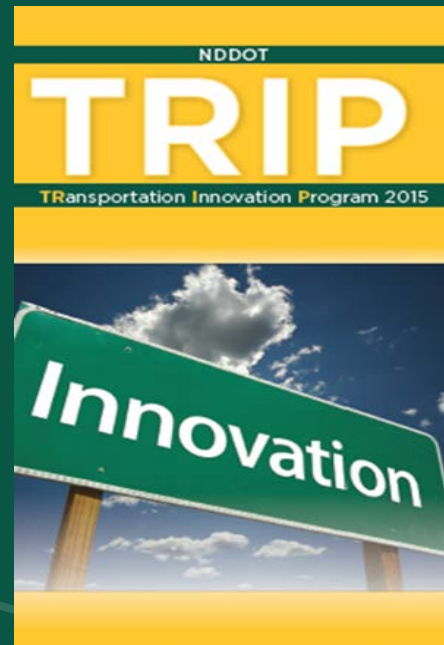


NDDOT TRansportation Innovation Program – TRIP

Presented to: Regional NDDOT-
UGPTI Meetings– Fall 2016



Transportation Innovation Program (TRIP)

- Objective of Initiative:
 - To identify and implement innovative ideas for transportation projects, processes and products.
- Focus Areas:
 - bridges and structures,
 - construction, operations and maintenance,
 - roadway surfacing,
 - planning, environmental, safety,
 - service delivery, transit, multi-modal,
 - innovative training, research

TRIP

- History:
 - Program Initiated by NDDOT in October 2014
 - Obtained FHWA STIC Incentive Grant to Administer
 - STIC – State Transportation Innovation Councils
 - NDDOT initially set aside \$5 million for advancing ideas
 - Recently the budget set to \$2.5 million/year

 - Current Plan is for 3 Fiscal Years
 - October 2014 to September 2015
 - October 2015 to September 2016
 - October 2016 to September 2017

TRIP

- History:
 - Past Calls for Ideas
 - April 20, 2015
 - May 29, 2015
 - July 10, 2015
 - August 31, 2015
 - December 15, 2015
 - February 16, 2016
 - May 16, 2016
 - August 15, 2016
 - 81 ideas Submitted as of August 15, 2016
 - 19 ideas selected for advancement from May and Previous
 - Still vetting August 15, 2016 submissions

TRIP

- Process

- UGPTI Administers Call for Ideas and Subsequent Steps

- Ideas Submitted to NDDOT TRIP Webpage

- <http://www.dot.nd.gov/business/innovate/>

- Ideas Reviewed by TRIP Team

- Logan Beise – Programming Division
 - Tim Horner – UGPTI Program Director and Chair
 - Ben Birkemeyer – Motor Vehicle Division
 - Jennifer Blumhagen – Driver’s License Division
 - Kent Leysring – Fargo District Maintenance
 - Travis Lutman – Maintenance Division
 - Justin Ramsey – Environmental & Transportation Services Division, DOT Chair
 - Tyler Wollmuth – Bismarck District Construction,
 - Erv Zimprich – Information Technology Division,

TRIP

- Process (continued)
 - TRIP Team may ask for Presentation from submitter
 - TRIP Team makes recommendation to NDDOT Exec Team
 - Exec Team Agrees or Disagrees to Advance Idea
 - Submitters are notified of success or other-wise
 - Process takes 3 to 4 months

Status - TRip Ideas advanced through May 16, 2016

- Using a Texas Underseal on HBP Overlay projects
 - Project constructed in 2015 (ND 22 RP 0.00 to RP 12, Underseal on RP's 1.5 to 6.0).
- Studying the use of Fiberglass Rebar & Dowels Bars in Bridges and Pavements
 - Review being conducted by NDDOT Materials & Research Division

Status - TRip Ideas advanced through May 16, 2016

- Using Fiber Reinforced HBP
 - Two projects will be built using this.
 - Hwy 200 near Dunn Center will have two sections with fiber.
 - Mile 109 to mile 113 will have a 1.5 inch overlay with fibers
 - Mile 113 to 116.5 will have a 2 inch overlay with fibers.
 - This project will look at two things
 - » 1) can we get longer service life out of the same thickness of pavement with fibers (2 inch section) 2) can we reduce pavement thickness and get the same service life as a thicker section (1.5 inch section).
 - » A control section will be built from mile 102.5 to mile 109 with a 2 inch lift with no fibers to serve as comparison
 - Highway 20 north of Jamestown
 - M&R using the thickness reduction concept to address Hwy 20 had width issues relating to the lane and shoulder widths.
 - A portion will be 3 inch mill with 2 inch overlay

Status - TRip Ideas advanced through May 16, 2016

- Installing Culvert Movement Monitoring/Instrumentation
 - Installation is scheduled to occur between 9/12 and 9/15
- Using URETEK Deep Polymer Injection on frost heaves
 - Currently under contract for construction on Hwy 57 near Ft Totten.
- Monitoring traffic flows with Distributed Acoustic Sensing
 - Project was bid in July and awarded. Contractor has 35 working days (beginning August 22) to complete the project.

Status - TRip Ideas advanced through May 16, 2016

- Using Geogrid Reinforcement under aggregate base for flexible pavement
 - Project identified.
 - A monitoring plans will be developed
- Using a MIT Scan T2 for collecting concrete pavement thicknesses
 - Received FHWA approval for purchase.
 - Processing purchase order and write specification centered around non-destructive test concept

Status - TRip Ideas advanced through May 16, 2016

- Using Hydrated Lime as an anti-stripping agent in new full-depth HBP pavements
 - Still working on identifying a project using full depth asphalt
- Developing a digital driver's license applications process
 - Still under development
- Using TSC Smart Cone technology for security, work-zone safety and surveillance applications
 - Still under development

Status - TRip Ideas advanced through May 16, 2016

- Using Jointbond to address longitudinal HBP joint deterioration
 - Will be used on Hwy 83 (September).
 - Will develop monitoring plan.
- Using WatershedGeo HydroTurf® for drainage way armoring
 - Working on selecting a Federal Aid eligible location.
- Using a Technical Analysis Process to Review Contract Award

Status - TRip Ideas advanced through May 16, 2016

- Using ULTRA Guard™ Safety Enhancement System on existing guardrail
 - Locations identified and have received a price quote
 - Setting up the project, getting it Federal Aid Eligible, and writing sole source documentation.
- Using Terrestrial Laser Scanning for High Accuracy As-Builts and Design Models
 - Identified slide repair on Hwy 46 (Mile 67) as candidate project for pre and post quantity surveys.

Status - TRip Ideas advanced through May 16, 2016

- Using Flexible Hoses to repair the “Bump at the Ends of Bridges”
 - Working with Bridge Division to identify:
 - a repair project
 - A project where the “fix” can be installed with original construction and be used as needed.
- Using Micro Milling with Microsurfacing projects
 - Project identified as Hwy 46 from Mile post 0.00 to Mile post 19.00
 - Miles 0.00 to 17.00 will be a test section
 - miles 17.00 to 19.00 will be a control

Status - TRip Ideas advanced through May 16, 2016

- Using Roadway Drainage Geocomposite Underdrain System under PCCP unsealed Joints
 - Need to identify pilot location.
 - **Exec direction is to not seal joints over test site – narrow saw cut only**

TRIP

- Next Round of Ideas Due December 12, 2016

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NDDOT Transportation Innovations Program - (TRIP) 2015

What is TRIP

TRIP is a new program to identify and implement innovative ideas in transportation projects, processes and products. Innovation ideas should address transportation in areas including but not limited to:

- Bridges and Structures
- Construction
- Operations and Maintenance
- Roadway Surfacing
- Planning
- Environmental
- Safety
- Service Delivery
- Transit
- Multi-modal
- Innovative or Currently Underprovided Transportation Training
- Innovative Research

Who Can Submit An Innovation Idea?

- Contractors
- Consultants
- Suppliers
- Associations
- Service Providers
- Colleges & Universities
- Tribes
- Local Jurisdictions
- NDDOT Staff

How to Submit an Innovative Idea

Please read the Call for Transportation Innovation Ideas for instructions to submit an idea.

What is "Every Day Counts"?

The FHWA EDC (Every Day Counts) program provides some examples of transportation innovative ideas and was created to identify and rapidly deploy proven but underutilized innovations to:

- Shorten Project Delivery Process
- Enhance Roadway Safety
- Reduce Congestion
- Improve Environmental Sustainability

For more information on EDC and example projects please see: FHWA Every Day Counts

TRIP Idea Examples:

- Accelerated Bridge Construction
- Adaptive Signal Control
- Alternative Materials for Maintenance and Construction
- Data Driven Safety Analysis
- Flexibilities in Utility Accommodations & Relocations
- Geospatial Data Collaboration
- High Friction Surfaces
- Improved Driver Licenses, Vehicle Registration or Truck Permitting Services
- Improved Environmental Documents
- Improved Transit Services and Operations
- Innovations with Tablets in the Field
- Intelligent Construction
- Intersection/Interchange Geometrics
- Planning & Environmental Linkages
- Road Closures 4 to 5 Miles
- Smart Work Zones
- Snow and Ice Control
- Traveler Information

Additional Information:

TRIP is an ongoing program that will have multiple selections annually. Please refer to this page for upcoming idea submittal deadlines.

Submitted ideas will be reviewed and shortlisted by the NDDOT TRIP Review Team. Shortlisted ideas may be invited to present a summary of their idea before the TRIP Review Team, which will provide recommendations for selection to the NDDOT Executive Office. The NDDOT Executive Office will make all final decisions.

For any questions regarding TRIP, visit the TRIP Contact Form.

The Transportation Innovation Program (TRIP) is sponsored by the North Dakota Department of Transportation with funding assistance through the Federal Highway Administration. The program is coordinated by the Upper Great Plains Transportation Institute (UGPTI), a research and education center at North Dakota State University.

NDDOT U.S. Department of Transportation Federal Highway Administration **NDSU** UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

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Questions?

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