

MONTANA DEPARTMENT OF TRANSPORTATION
ACTIVE AND RECENTLY COMPLETED RESEARCH PROJECTS ¹
April 30, 2021

| Problem Statement # | Project Title | Technical Panel (TP) Members | TP's Formed | Lit. Search | Action | | | % Complete (Time) |
|---------------------|---|--|-------------|-------------|-------------------------|-----|---|--|
| | | | | | TP | RRC | Research: MSU/UM/ Contractor | |
| N/A | <p>Traffic Safety Culture Pooled Fund Study (The projects listed below are underneath this pooled fund study)</p> <p>Projects 8882-309-01, 05, 07, 09, and 13: MGMT Support Project 8882-309-02: Assessment of Traffic Safety Culture Related to Driving after Cannabis Use Project 8882-309-03: Assessment of Traffic Safety Culture: Exploring Traffic Safety Citizenship Project 8882-309-04: Traffic Safety Cultures and the Safe Systems Approach - Towards a Cultural Change Research and Innovation Agenda for Road Safety (TraSaCu) Project 8882-309-06: 2017 TRB Annual Meeting Travel Project 8882-309-08: Understanding Law Enforcement Attitudes and beliefs about Traffic Safety Project 8882-309-10: Key Information for DUIC Policy Project 8882-309-11: Traffic Safety Culture Primer Project 8882-309-12: Traffic Safety Citizenship Communication Tools Project 8882-309-14: Guidance for Evaluating Traffic Safety Culture Strategies Project 8882-309-15: Guidance on Messaging to Avoid Reactance and Moral Disengagement Project 8882-309-16: Guidance to Promote Workplace Policies and Family Rules to Reduce Cell Phone Use While Driving and Promote Engaged Driving</p> | Janet Kenny, Susan Sillick, Marcee Allen, Bob Seliskar, CA DOT, CT DOT, IA DOT, ID DOT, IL DOT, IN DOT, LA DOT, NH DOT, NV DOT, TX DOT, UT DOT, VT AOT, and WA DOT | Y | Y | Positive Recommendation | N/A | WTI 8882-309-01, 05, 07, 09, & 13 10/14-9/19 (60) 8882-309-02 6/15-10/6 (17) 8882-309-03 6/15-11/16 (18) 8882-309-04 6/15-9/19 (52) 8882-309-06 10/16-3/17 (5) 8882-309-08 11/17-7/19 (21) 08882-309-10 7/18-11/19 (17) 08882-309-11 7/18-10/19 (16) 08882-309-12 7/18-10/19 (16) 08882-309-14 2/19-3/21 (25) 8882-309-15 2/19-7/21 (30) 8882-309-16 7/19-9/21 (27) | 01: 100 DONE 02: 100 DONE 03: 100 DONE 04: 100 DONE 05: 100 DONE 06: 100 DONE 07: 100 DONE 08: 100 DONE 09: 100 DONE 10: 100 DONE 11: 100 DONE 12: 100 DONE 13: 100 DONE 14: 100 DONE 15: 93 16: 85 |
| N/A | <p>Traffic Safety Culture: Phase 2 (There will be numerous projects underneath this pooled fund study.) Project 8882-444-17: MGMT Support</p> | Janet Kenny, Susan Sillick, Marcee Allen, Bob Seliskar, CA DOT, CT DOT, GA DOT, IA DOT, ID DOT, KS DOT, LA DOT, MI DOT, MN DOT, MS DOT, NV DOT, TX DOT, UT DOT, VT AOT, and WA DOT | Y | Y | Positive Recommendation | N/A | WTI 8882-444-17 & 18 10/19-9/24 (60) 8882-444-19 | 17: 100 DONE 18: 32 19: 33 20: 8 |

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| | Projects 8882-444-17 and 18: MGMT Support Project 8882-444-19: A review of Methods to Change Beliefs Project 8882-444-20: Resources and Tools to Reduce Multi-Risk Driving Behaviors | | | | | | 3/21-5/22 (15) 8882-444-20 3/21-3/24 (37) | |
| N/A | Numerical Modeling of the Test Pit for the Falling Weight Deflectometer Calibration (Mohammad Sadeghi) | DJ Berg, Jeff Jackson, John Amestoy, Susan Sillick, and Matt Strizich/FHWA | Y | N/A | Positive Recommendation | Approved 10/28/20 | MT Tech 9921-806 12/20-2/22 (15) | 40 |
| 14-031 | Wildlife Accommodations Process Implementation | Bill Semmens and Susan Sillick | Y | N/A | Positive Recommendation | | Implementation 11/18-10/24 (72) | 43 |
| 15-008 | Guidelines for Chemically Stabilizing Problematic Soils Implementation | Jeff Jackson and Vaneza Callejas | Y | N/A | Positive Recommendation | | Implementation 4/20-3/22 (24) | 54 |
| 15-013 | Effective Production Rate Estimation and Monitoring of Controlling Activities Using Daily Work Report Data: Phase 1 (David Jeong) | Lisa Durbin (Chair), James Dunbar, Chris Hardan, Geno Liva, Chad Richards, Alan Woodmansey/FHWA and Sue Sillick | Y | Y | Positive Recommendation | Approved 12/1/16 | ISU 9344-504 1/17 - 9/19 (33) | 100 DONE |
| N/A | Effective Production Rate Estimation and Monitoring of Controlling Activities Using Daily Work Report Data: Phase 2 (David Jeong) | Chad Richards (Chair), Lisa Durbin, James Dunbar, Chris Hardan, Geno Liva, Alan Woodmansey/FHWA and Sue Sillick | Y | Y | Positive Recommendation | N/A | TAMU 9344-723 6/19 - 2/21 (21) | 100 DONE |
| N/A | Effective Production Rate Estimation and Activity Sequencing Logics Using Daily Work Report Data: Phases 1 & 2 Impementation | Chad Richards, Dmian Krings, and Susan Sillick | Y | Y | Positive Recommendation | | Implementation 4/9/21-4/15/21 | |
| 15-015 | Regional Regression Equations Based on Channel-Width Characteristics to Estimate Peak-Flow Frequencies at Ungauged Sites Using Data Through Water Year 2011 (Kathy Chase) | Dave Hedstrom (Chair), Annette Compton, Steve Story/DNRC and Vaneza Callejas | Y | N/A | Positive Recommendation | Approved 12/18/16 | USGS 9353-511 2/17 - 5/21 (52) | 98 |
| 18-007 | Large-Scale Laboratory Testing of Geosynthetics in Roadway Applications (Steve Perkins) | Darin Reynolds (Chair), DJ Berg, Scott Helm, Bill Henning, Jeff Jackson, Miles Yerger, Matt Strizich/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 1/24/18 | MSU 9564-602 3/18-6/21 (40) | 95 |

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| 18-009 | Testing "Wildlife Friendly" Fencing Modifications to Manage Wildlife and Livestock Movements (Erin Landguth) | Larry Sickerson (Chair), Shane Mintz, Jerilee Weibel, Joe Weigand, Kam Wrigg, Heidy Bruner (FHWA) and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 4/24/18 | UM 9596-617 6/18-2/21 (33) | 100 DONE |
| 18-016 | Feasibility of Non-Proprietary Ultra-High Performance Concrete (UHPC) for Use in Highway Bridges in Montana - Phase 2: Field Application (Mike Berry) | Lenci Kappes (Chair), Paul Bushnell, Bobbi deMontigny, Matt Needham, Tim Walker, Drew Sielbach/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 2/23/18 | MSU 9578-606 3/18-7/21 (41) | 93 |
| 18-017/19-015 | Concrete-Filled Steel Tube to Concrete Pile Cap Connections - Phase 4 (Mike Berry) | Lenci Kappes (Chair), Tyler Steffan, Drew Sielbach/FHWA, Jim Scoles/Morrison-Maierle and Vaneza Callejas | Y | Y | Positive Recommendation | 18-017 Approved 6/19/18, Combined Approved 6/17/19 | MSU 9630-628 7/18-9/22 (51) | 67 |
| 18-018 | Alkali-Silica Reactivity in the State of Montana (Mike Berry) | Paul Bushnell (Chair), Matt Needham, Matt Strizich, Jerry Bowser/Old Castle Materials, Ken Munski/Terracon, Leo Zwemke/Knife River, and Steve Morrical and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 2/23/18 | MSU 9577-607 4/18-8/21 (40) | 90 |
| 19-001 | Effectiveness of Highway Safety Public Education at Montana Motor Vehicle Division and Vehicle Registration Stations by Streaming a Variety of Safety Content (Jaime Sullivan) | Gabe Priebe (Chair), Erin Root, Sky Schaefer/DOJ, Doug McBroom, Marcee Allen/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 1/31/20 | MSU 9832-766 3/20-10/22 (30) | 47 |
| 19-005 | Developing a Methodology for Safety Improvements on Low-Volume Roads in Montana (Ahmed Al-Kaisy) | Gabe Priebe (Chair), Patricia Burke, Tasha King, Pam Langve-Davis, Matthew Ulberg/LTAP, Marcee Allen/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 12/4/18 | MSU 9679-699 2/19-9/21 (32) | 84 |
| 19-006 | Use of Fluorescent Orange Delineators in Temporary Traffic Control Work Zones (Work Zone Delineation) (Ahmed Al-Kaisy) | Jeremy Wilde (Chair), Paul Jagoda, Marcee Allen/FHWA, Jeff Patten/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 1/31/20 | | ON HOLD |
| 19-011 | Monitoring Streamflow Using Video Cameras (Steve Holnbeck) | Dave Hedstrom (Chair), Annette Compton, Stephanie Brandenberger, Kurt Marcoux, Drew Sielbach/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 5/22/19 | USGS 9790-727 8/19-1/22 (30) | 70 |

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| 19-017 | Evaluation of Thin Polymer Overlays for Bridge Decks (Paul Krauss) | Nathan Haddick (Chair), John Benda, Paul Bushnell, Stephanie Brandenberger, Shane Pegram, Drew Sielbach/FHWA, Matt Strizich/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 11/1/19 | WJE 9757-705 1/20-3/23 (39) | 41 |
| 19-019 | Bridge Deck Cracking Evaluation (Todd Nelson) | Stephanie Brandenberger (Chair), Shane Pegram, Matt Needham, Paul Bushnell, Nathan Haddick, Drew Sielbach/FHWA, Matt Strizich/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 6/17/19 | WJE 9696-700 8/19-9/21 (26) | 81 |
| 20-004 | Analyze Business Models for Implementation and Operation of a Statewide GNSS RTN (Ahmed Al-Kaisy) | Mike Degenstein (Chair), Bill Weber, Chris Blumberg, Erin Fashoway, Scott Read, Matt Strizich/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 10/28/20 | MSU 9922-807 12/20-1/23 (25) | 20 |
| 20-007 | Economic Benefits of Improving Montana's Transportation Infrastructure (EBIMTTI) | Erik Kappelman (Chair), Lynn Zanto, Sheila Ludlow, Larry Flynn, Dorianne Minkoff, Carol Strizich, Darryl James/Darryl James Consulting, Spook Stang/Motor Carriers of Montana, Brian Hasselbach/FHWA and Vaneza Callejas | Y | Y | | | | ON HOLD |
| 20-008 | A Feasibility Study of Road Culvert Bridge Deck Deicing Using Geothermal Energy (Mohammad Khosravi) | Jeff Jackson (Chair), Scott Helm, DJ Berg, Mike Murolo, Lee Grosch, Miles Yerger, Kyle Hanson, Matt Steveson, Drew Sielbach/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 6/24/20 | MSU 9890-784 7/20-12/23 (43) | 23 |
| 20-011 | Development of Deterioration Curves for Bridge Elements in Montana (Damon Fick) | Andy Cullison (Chair), Eric Frazier, Stephanie Brandenberger, Amanda Jackson, Drew Sielbach/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 1/31/20 | MSU 9831-765 3/20-7/22 (29) | 55 |
| 20-014 | Icy Road Forecast and Alert (IcyRoad): Validation and Refinement Using MDT RWIS Data (Jennifer Fowler) | Doug McBroom (Chair), Justun Juelfs, Page Kelly Piccolo, Theresa Bousliman, Jeff Kitsmiller/NOAA, Matt Strizich/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 6/24/20 | UM 9891-785 7/20-3/22 (20) | 50 |
| 21-009 | Safety Evaluation of Sinusoidal Centerline Rumble Strips | Gabe Priebe (Chair), Jodi Bachini, Patricia Burke, Matthew Collingwood, Damian Krings, Joe Radonich, Matthew Ulberg/LTAP, Marcee Allen/FHWA and Vaneza Callejas | Y | Y | Met 9/21/20, 10/27/20, 11/13/20 & 2/22/21 | | | |

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| 21-011 | Effective Wildlife Fences through Better Functioning Barriers at Access Roads and Jump-Outs | Joe Weigand (Chair), Aaron Mason, Lawrence Sickerson, Ivan Ulberg, Nathaniel Walters, Darrell Williams Heidy Bruner/FHWA and Bobbi deMontigny | Y | Y | Positive Recommendation | Pending Approval 10/28/20 | | |
| 21-012 | Artificial Intelligence (AI) Based Tool to Estimate Contract (David Jeong) | Lenci Kappes (Chair), Mike Degenstein, Joshua Dold, Mark Studt, T.J. Ramaeker, Alan Woodmansey/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 1/19/21 | TAMU 9929-819 4/21-5/23 (25) | 4 |
| 21-014 | Exploration of UHPC Applications for Montana Bridges | Lenci Kappes (Chair), Paul Bushnell, Wes Dess, Nathan Haddick, Meghan McCarron, Oak Metcalfe, Matt Needham, Jin Nelson, Doug Payne, Tyler Steffan, Drew Sielbach/FHWA and Vaneza Callejas | Y | Y | Met 9/10/20 | | | |
| 21-016 | Feasibility of Non-Proprietary Ultra-High Performance Concrete (UHPC) for Use in Highway Bridges in Montana: Implementation (Mike Berry) | Lenci Kappes (Chair), Paul Bushnell, Wes Dess, Nathan Haddick, Meghan McCarron, Oak Metcalfe, Matt Needham, Jin Nelson, Doug Payne, Tyler Steffan, Drew Sielbach/FHWA and Vaneza Callejas | Y | Y | Positive Recommendation | Approved 12/10/20 | MSU 9925-818 12/20-4/23 (28) | 14 |

1. Projects which have been completed for six months are removed from this list in June and December. Click on [All Projects Listing](#) to view all research projects.