



NEWSLINE

Montana Department of Transportation
mdt.mt.gov



June 2021

COVID-19 Response & Relief Funding

MDT received an additional \$102 million (approximately) in federal funding through the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA). These additional funds were allocated for MDT to respond to and provide relief from the financial impacts caused by the COVID-19 pandemic, and are directed to cover costs related to preventing, preparing for, and responding to coronavirus. The funds can be used to cover 100% of costs for uses including - but not limited to - preventive maintenance, routine maintenance, and operations. This funding is available until September 30, 2024, and MDT is currently evaluating the most effective use of these funds to continue to provide safe, reliable and resilient transportation for Montana.



Summer travelers on Montana's scenic US Highway 93.

Commit to Safety in the "Cone Zone"

Warmer weather, clear roads, orange cones, and barrels – it's construction season in Montana. Reduced speeds, detours, and delays can all wear on a driver's patience. As you travel through these "cone zones," please remember to manage your speed, space, and stress – there are loved ones working here! MDT work zone staff and construction crews work hard to keep Montana's roads safe. Their families and friends want them to come home.

Work zone safety isn't just to protect workers, though. In 2020, there were 175 work zone crashes reported, and 61 occurred with a worker present (based on preliminary data). Each year, the majority of national work zone crash fatalities are motorists and their passengers. So plan ahead, slow down, and stay alert! Your loved ones also want you home.

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MDT Director Malcolm "Mack" Long and Construction Engineer Jeremy Wilde talk work zone safety during National Work Zone Awareness Week.

Did you know?

- 221 active construction projects are planned across Montana this summer.
- An average of 9,000 vehicles/day travel through a single construction project in Montana. In Billings, sites can see up to 29,000 vehicles/day.
- In 2020, there were 175 work zone crashes in Montana:
 - ◊ 61 of these crashes occurred where a worker was present.
 - ◊ 86 of these crashes involved two vehicles.



National Work Zone Awareness Week was April 26-30, 2021. Check out a few highlights from this important annual safety week on MDT's YouTube page, @MontanaDOT: <https://youtu.be/qRQfH9E0QzA>



Federal Surface Transportation Program Status

MDT has received full federal funding for Fiscal Year (FY) 2021 and is on track to deliver all planned projects and programs, even amidst the uncertainty caused by global events. The current program extension will expire at the end of September, and Congress has initiated discussions for the next multi-year authorization bill. The House of Representatives Committee on Transportation and Infrastructure recently introduced its bill, and the Senate Committee on Environment and Public Works announced its proposed legislation in late May. Although there is positive movement on reauthorization, passage of a longer-term reauthorization may be affected by discussions surrounding a broader infrastructure bill. MDT continues to support Montana's congressional delegation in its efforts to protect and represent rural state transportation needs and continued funding for transportation.

NEWSLINE SUBSCRIPTION UPDATES

Did you know? The Newsline is available by both mail (print) and email (electronically).

Please contact Lauren Eichenfels, Newsline Editor, to add or update your subscription preferences.

➤ By email: leichenfels@mt.gov

➤ By phone*: 444-7614

➤ **Please leave a voicemail with your name, phone number, and best time of day to reach you to update your subscription preferences or information.*

Transportation Commission and Aeronautics Board Confirmed During 67th Montana State Legislature

Each of the five Montana Transportation Commission Board Members and each of the nine Montana Aeronautics Board Members are appointed by the Governor and confirmed by the Senate. Board members remain in their position until a replacement is appointed and confirmed. (MCA 2-15-2502; 2-15-2506)

➤ **Transportation Commission:** For additional information and appointed board member contacts, visit www.mdt.mt.gov/pubinvolve/trans_comm/.

➤ **Aeronautics Board:** For additional information and appointed board member contacts, visit www.mdt.mt.gov/pubinvolve/aeronautics_board/default.shtml.

New Planning Division Administrator

Rob Stapley was born and raised in the great state of Montana. He has a bachelor's degree in Business Administration from Montana State University – Billings. Rob spent eight years working in private industry in procurement and contracts before joining the Montana Department of Corrections, where he continued working in procurement and contracts. In 2008, Rob joined the Montana Department of Transportation (MDT) and became the Right of Way Bureau Chief in 2010. He remained in that position until recently becoming MDT's Rail, Transit & Planning Division Administrator.



Rob Stapley, MDT Rail, Transit & Planning Division Administrator

Contact Rob at rostapley@mt.gov or 444-3445.

New Transit Section Supervisor

Adam Kraft was recently named the Transit Supervisor for MDT. Adam holds degrees from Appalachian State, North Carolina State, and George Mason Universities. He began his career with MDT in 2006. He has held a few positions, most recently the Western Regional Transit Planner, before accepting this position in the Rail, Transit & Planning Division.



Adam Kraft, MDT Transit Section Supervisor

Contact Adam at akraft@mt.gov or 444-6120.

Celebrating Good Roads Day in Montana: June 15, 2021

Through times of growth as well as uncertainty, Montana's transportation infrastructure plays a vital role in providing access to essential services across the state. Roads to hospitals and emergency services, public transit, rest areas for weary travelers and commercial carriers, and airport service in rural communities are just a few examples of how this infrastructure supports our state. Transportation is also crucial to the economic well-being and vitality of our state as a whole—providing access to shopping, dining, local attractions, outdoor recreation, and public lands and facilities. Simply put, transportation connects us to each other and the things we need.

The third Tuesday in June – this year June 15th – marks Good Roads Day. This important date was designated by the Montana Legislature in 1947, whereby the people of the state are asked to contribute toward the improvement and safety of public highways. For MDT, building “good roads” takes time and means a continuous planning process that is underway long before ground is ever broken on a project. It can take eight years to complete a road project, but long-range planning starts some 1 to 20 years prior to project start.

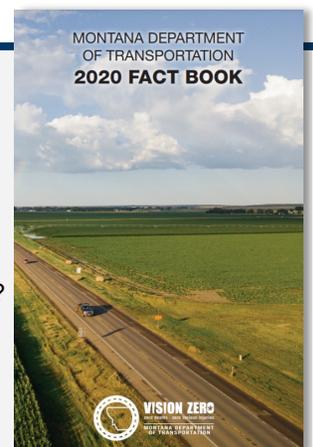
As transportation needs outpace revenue 3 to 1, MDT focuses on safety and preserving and maintaining transportation infrastructure as top priorities; in other words, keeping Montana's good roads in good order. In Montana, a driver on average contributes about \$4 to \$5 a week (Source: 2020 MDT Fact Book) in fuel taxes for maintaining and constructing Montana highways, while federal funds pay for about 87% of highway construction costs. This funding is not keeping pace with rising costs, aging infrastructure, and increasing demand, making it tougher to preserve and maintain Montana's roads and bridges.

2020 MDT Fact Book

The 2020 MDT Fact Book is now available online! The Fact Book is a biennial publication containing data and information updates from across the department – from safety and funding to bridges and aeronautics! How is MDT funded? How many miles of roadway does MDT maintain? What does it take to build a road? Answers to all these questions, and more, are in the Fact Book.

Check it out online here:

<https://mdt.mt.gov/publications/docs/brochures/factbook.pdf>



Commit to Safety in the “Cone Zone” (Cont.)

Safer Driving in Work Zones

Remember the Three S's of work zone safety: speed, space and stress.

1. MANAGE YOUR SPEED

Slow down when approaching all work zones. Follow posted speed limits, especially within construction zones, and adjust your speed for weather conditions. Don't resume normal speed until you see roadway signs indicating it's safe to do so.

2. MANAGE YOUR SPACE

Leave adequate braking room between your vehicle and the one ahead of you, don't pass on the shoulder, and don't drive across the median. Keep a safe distance between your vehicle and traffic barriers, trucks, construction equipment, and workers, and give yourself an out. When stopped in traffic, leave a safety zone between you and the vehicle in front of you, and don't try to force tailgaters to back off by slamming on your brakes.

3. MANAGE YOUR STRESS

Keep your cool, don't rush, and pay attention. Avoid cell phone or radio distractions, as well as distractions from other stopped vehicles or construction activity. Expect delays and use the Traveler Information Map to learn about construction, leave a bit earlier, or try an alternate route.

Visit www.mdt.mt.gov/visionzero/people/workzones.shtml to learn more about work zone safety in Montana.



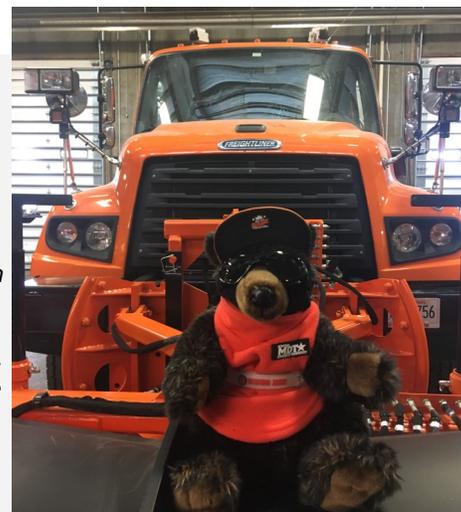
MDT's Butte District team celebrating National Work Zone Awareness Week.

JD the Beartooth Highway Bear says “Slow Down in the Cone Zone!”

You may recognize this furry member of MDT's Beartooth Highway clearing crew from his appearances during plowing and snow removal that takes place on this scenic route each spring. But you may not know that JD was named in honor of one of MDT's own—Jeff Dyekman—who was tragically lost in a work zone crash in Billings in 2018.

MDT remains committed to the goal of Vision Zero—zero deaths and zero serious injuries on Montana's roadways. As a department, we believe no death on our roads is acceptable, and everyone deserves to return home safely to their loved ones.

So as you travel through one of the many work zones around Montana this summer, remember JD and slow down, stay alert, and stay safe. The people you see at work wearing orange are bringing you better roads ahead, and they deserve to return home safely to their family and friends.



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Summer Travel Resources

Summer in Montana is short, and MDT has the tools to help you spend less time on the road and more time enjoying our beautiful state. No matter your travel destination or mode of transportation, you can plan the best route to get you there with MDT's travel resources.

To access the MDT Traveler Information web page—including the interactive Travel Info map and information on downloading the MDT TravInfo mobile app—scan the QR Code to the right with your mobile device or visit www.mdt.mt.gov/travinfo/. Travelers can also call 511 from anywhere in state.



Annual Beartooth Highway Clearing

This All-American Scenic Byway closes each winter because of excessive snow and adverse winter conditions and typically opens by the Friday of Memorial Day weekend. Snow levels vary and drifts can be as high as 26 feet in the higher elevations.

MDT is responsible for the highway to the Montana/Wyoming border, where the National Park Service takes over maintenance responsibilities through Wyoming, back into Montana, and into Yellowstone Park. MDT and NPS coordinate closely to keep the road open throughout the summer.

Opening the Beartooth Highway is a huge undertaking! Check out the videos from 2021 on MDT's YouTube channel:

www.youtube.com/user/MontanaDOT



The Beartooth Highway represents an awe-inspiring feat of engineering.



100 Deadliest Days of Summer

VISION ZERO
zero deaths · zero serious injuries

MONTANA DEPARTMENT
OF TRANSPORTATION

Montanans are ready to get out and travel our great state. With the unusual past year, where activities and restrictions kept us close to home, many of us found ourselves limiting our driving during the spring and summer of 2020. This year as residents and visitors head out on the roadways to explore Montana, MDT is urging travelers to remember the serious nature of driving and join the commitment to Vision Zero – zero deaths and zero serious injuries on Montana roadways.

Memorial Day to Labor Day is known as the “100 Deadliest Days of Summer” due to increased traffic deaths nationwide. At other times of the year, the nation often travels less either by choice or limiting factors such as season or weather conditions, and travelers stay closer to home and use increased caution while driving. However, summer months bring clear roadways and better weather, lowering drivers’ guards. While Montana did see a decrease in Average Vehicle Miles Traveled in 2020 compared to 2019, (AVMT was down -2.51% between June and September) the expectation is that 2021 will see those numbers increase again. Combined with an increase in traffic volumes, these conditions lead to increased crashes and deaths involving cars, trucks, motorcycles, ATVs, pedestrians, and bicycles.

As of May 24, 2021, 81 deaths have occurred on Montana roads compared to 41 in the same time period in 2020. This trend is showing an alarming increase in fatalities with the contributing factors of speed, not wearing a seat belt, and impaired driving leading to more lives lost on our roadways. Montanans need to do their part in staying safe whether traveling across town or the state. Montana’s daily vehicle miles traveled (DVMT) is typically 22% higher than average during the 100 Deadly Days of Summertime period.

While higher speeds and traffic volumes can contribute to the severity of highway crashes, drivers need to remember that crashes, including severe and fatal crashes, don’t just happen on the highway. When traveling in town, on unpaved roads, as well as on the highway, drivers should commit to the following safe behaviors:

- Follow posted speed limits.
- Be rested and give full attention to driving.
- Keep vehicles in safe running condition.
- Scan the travel area for safety hazards such as wildlife and debris. Expect the unexpected.
- Buckle up and only drive sober.
- Share the road, and watch for motorcyclists, pedestrians and bicyclists.

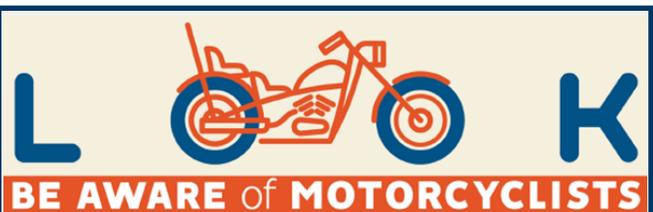
MDT is committed to safe engineering and maintaining Montana highways. For more information about Vision Zero, contact Janet Kenny at 444-7417 or jakenny@mt.gov.

MDT Announces EMS Grant Opportunity, Applications Due June 30, 2021

MDT has opened the State Fiscal Year (SFY) 2022 grant round for applications for the Emergency Medical Services (EMS) Grants to enhance traffic safety in Montana. The purpose of the program is to provide grants to mostly volunteer, Medicare-level billing providers for emergency response vehicles, ambulances, equipment to provide medical care, communications equipment, and training. Approximately \$1 million is granted annually by the program, and grant recipients are required to provide a 10% match for any grant funds received.

Online Application: Applications will only be accepted through the Montana Grants and Loan Web grants system at <https://funding.mt.gov/index.do>.

Applicants will need to register and submit application through the web-based system. For program eligibility and the application process, see MDT’s website at www.mdt.mt.gov/business/grants_ems.shtml. For more information, contact Chad Newman at chnewman@mt.gov or 444-0856



As spring melts away winter, Montana’s roadways beckon to motorists looking to explore our expansive state. May is Motorcycle Safety Awareness Month, an important reminder that motorcyclists – both residents and travelers alike – will be out and about with the warmer weather. Increasing driver awareness of motorcycles, their driving practices, and safety challenges can all help reduce the number of crashes.

Preliminary numbers for 2020 indicate there were 29 motorcycle fatalities in Montana, representing almost 13% of the total fatalities. Of those fatalities, 15 were unhelmeted, or 51%. These numbers were up from 2019, and motorcyclists remain an at-risk group for crashes and fatalities in Montana.

“Motorcycles are some of the most vulnerable vehicles on the road,” said Jim Morrow, director of Montana Motorcycle Rider Safety (MMRS). “It is very important for drivers to remember that a motorcycle has all the rights of the road as any other motorist.”

Every spring, MDT coordinates media and messaging for Motorcycle Safety Awareness Month through federal (NHTSA) funds. These activities are an example of MDT’s “Education” focus area of Vision Zero – the goal of achieving zero deaths and zero serious injuries on Montana’s roadways.

Montana’s scenic views make it an ideal place for motorcyclists to “hit the open road” when warm weather arrives. It’s important to remember to share Montana’s roadways and safe behaviors like observing the speed limit, staying alert, and only driving sober can mean the difference between a memorable summer ride and the tragedy of life lost on our roads. MDT and MMRS offer these tips to drivers and riders on how to safely share the road and prevent a fatal crash:

Tips for drivers:

- **Stay Alert.** Keep your full attention on driving and avoid distractions.
- **Stay Back.** Allow the motorcycle the full width of a lane at all times and allow more follow distance—three to four seconds—when behind a motorcycle, which gives them more time to maneuver or stop in an emergency.
- **Stay Aware.** Check all mirrors and blind spots for motorcycles before changing lanes or merging with traffic, especially at intersections, and always signal your intent.

Tips for motorcycle riders:

- **Stay Safe.** Take a motorcycle safety course (<http://motorcycle.msun.edu>), never ride distracted, and wear reflective or brightly colored protective gear and a DOT-compliant helmet.
- **Stay Visible.** Ride in the middle of the lane where you will be more visible to drivers. Use hand and turn signals at every lane change or turn. Use caution and slow down when approaching left turns or intersections.
- **Stay Lawful.** Obey all traffic laws and be properly licensed. Observe speed limits, and never ride impaired.

To learn more about MDT’s Motorcycle Safety program, visit www.mdt.mt.gov/visionzero/plans/motorcycle.shtml.

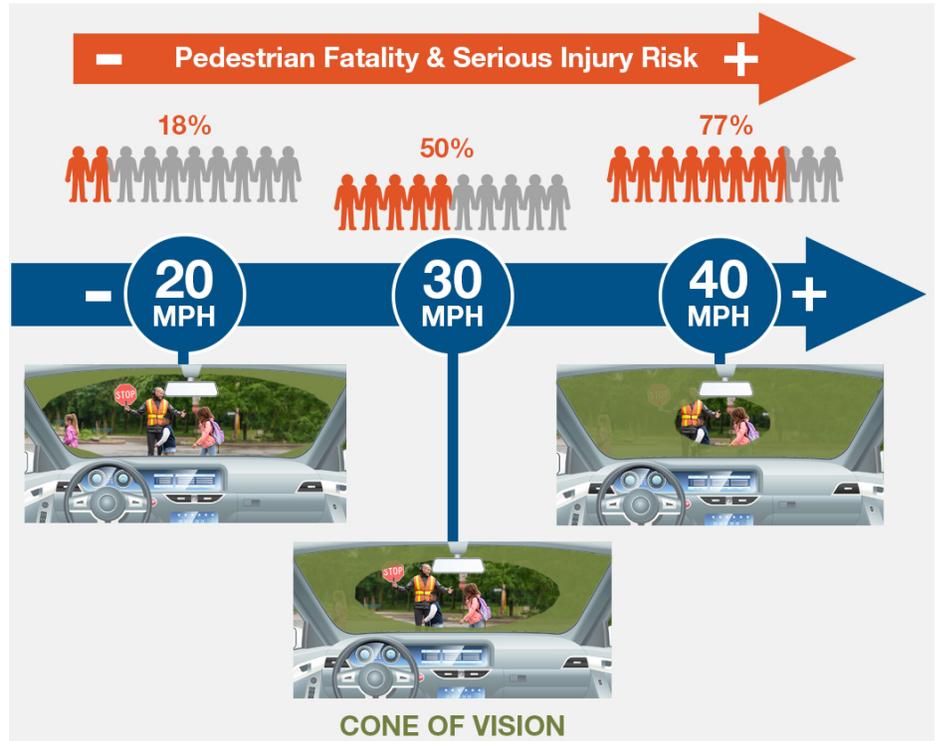
Slow and Cautious Keeps Us Safe!

As the skies brighten and snow melts, Montanans are considering how they can incorporate time outside into their daily routine. Dusting off your bike for a sunny commute to work or walking to the grocery store for some mid-week essentials are attractive transportation options for many as warming weather overtakes winter cold. With this seasonal increase in non-motorized travel, our neighborhood streets and open highways see more bicyclists and pedestrians, requiring heightened focus from all users of Montana's roadways. Distractions, excessive speed, and erratic behavior can mean life or death to a bicyclist or pedestrian.

One simple and effective way to protect all roadway users is to lower your speed – particularly when driving a passenger vehicle. As the speed of a vehicle involved in a collision increases, the risk of fatality for a pedestrian involved also increases. The higher the speed, the more deadly the crash. According to the Federal Highway Administration (FHWA), a collision between a vehicle and a pedestrian at approximately 20 miles per hour presents a 18% risk of a fatal injury for the pedestrian. Increase the vehicle speed to 40 miles per hour, and that risk increases to 77%. Slowing down, especially in the presence of others, can drastically reduce the risk of fatality should a collision occur.

Pedestrians and bicyclists can protect themselves by remaining predictable, signaling intent, and being aware and focused while traveling. For motorists, following posted speed limits, keeping a steady eye on the road, and avoiding distractions such as mobile devices, food, stereos, and other passengers can ensure everyone gets to their destination safely.

Sunny days and increasing temperatures mean we all can start enjoying Montana's beautiful open highways and bustling urban centers. Whatever form of transportation you take, make sure you're aware, keeping a safe speed appropriate to the environment, and behaving predictably. Together, we can keep all travelers safe and work toward the Vision Zero goal of ending fatalities on Montana's roadways. To learn more about Vision Zero, visit www.mdt.mt.gov/visionzero/. For resources and information about MDT's Bicycle & Pedestrian program, contact MDT's Bicycle & Pedestrian Coordinator at mdtbikeped@mt.gov or 444-9273.



This relationship graphic between vehicle speeds, pedestrian injury outcomes, and the driver's "cone of vision" shows how 10 mph differences in motor vehicle speed can increase the severity of vehicle vs. pedestrian crashes. (Source: FHWA, 2016)

Montana Traffic Safety Dates

⇒ **May 1-31, 2021**

Motorcycle Safety Awareness Month

⇒ **May 24, 2021 - June 6, 2021**

Click It or Ticket Law Enforcement Seat Belt Mobilization (2021 STEP)

⇒ **June 30, 2021 - July 5, 2021**

4th of July Drive Sober or Get Pulled Over Law Enforcement Impaired Driving Mobilization (2021 STEP)

⇒ **August 16, 2021 - September 6, 2021**

Labor Day Drive Sober or Get Pulled Over Law Enforcement Impaired Driving Mobilization (2021 STEP)

Note: A total of 848 hours were worked during the Federal Fiscal Year (FFY) 2020 Labor Day Mobilization by 17 participating Agencies. 2,365 citations and warnings were issued during this mobilization. For more information, contact Chad Newman, chnewman@mt.gov or 444-0856

⇒ **September 19-25, 2021**

Child Passenger Safety Week (National Seat Check Saturday is September 25, 2021)

Safety Bills from 67th Montana State Legislature

During biennial sessions, MDT staff sponsor or closely follow and support a number of bills relating to department work. The following are a sampling of safety bills that have been signed into law:

- **HJ 10**—This bill was signed by the Senate President on April 7, 2021, and will provide for an interim study regarding autonomous vehicle use in Montana.
- **HB 226**—This bill was signed by the Governor on April 14, 2021, and will generally revise alcohol laws to provide for curbside pickup at establishments in Montana.
- **HB 256**—This bill was signed by the Governor on March 26, 2021, and will revise Montana's child restraint laws.
- **HB 264**—This bill was signed by the Governor on April 29, 2021, and will revise emergency vehicle passing laws (notably including tow trucks in current "Move Over" law and increasing penalties for reckless endangerment of emergency personnel and highway workers).
- **SB 9**—This bill was signed by the Governor on March 2, 2021, and will provide for motorcycle filtering on Montana roadways.
- **SB 129**—This bill was signed by the Governor on March 31, 2021, and will generally revise Montana's alcohol laws relating to department investigations.

Find more information on these and other bills from the 2021 Session at www.leg.mt.gov.

Guidelines for Chemically Stabilizing Problematic Soils

Montana has a diverse geology with a wide variety of subgrade soils present across the state. These subgrades include soils with low bearing capacities such as soft clays and loose sands, as well as soils with high bearing capacity such as dense sands and stiff clays. In addition, the state also has expansive soils capable of volumetric strains due to moisture fluctuations. The pavement subgrade section of MDT's geotechnical manual lists geosynthetic reinforcement as well as chemical treatment as choices for subgrade stabilization. The practice has been inclined toward geosynthetic usage due to the familiarity with the method and applicability for all soil types. Through this research project, MDT sought an understanding of chemical methods for subgrade stabilization and the development of stabilization guidelines tailored to the needs of MDT, thus providing an alternative for subgrade stabilization other than geosynthetics. The life-cycle cost analysis (LCCA) conducted for this project indicates cost savings in using chemical stabilization range from 9% to 15.9%, depending on the soil type and the type of chemical stabilization.



Montana's diverse geology and variety of subgrade soils can create challenges for roadway infrastructure and improvements.

Each year, there is a competition among the 50 states, DC, and Puerto Rico to identify the top 16 high value research projects. This project was selected as high value research in 2020. (Learn more about high value research: <https://research.transportation.org/rac-value-of-research-task-force-document-library/>)

For more information, visit the project website at https://mdt.mt.gov/research/projects/geotech/chemical_stablize.shtml, or contact Susan Sillick at ssillick@mt.gov or 444-7693.

Learn More About MDT's Aeronautics Division!

The Montana Aeronautics Division, part of MDT, has two bureaus: Safety and Education and Airports/Airways. These bureaus are responsible for providing for the protection and promotion of safety and improvement in aeronautics across our state. The division facilitates and assists with the maintenance, improvement, inspection, and management of various components of airport infrastructure for many public-use airports statewide. Montana has approximately 126 public airports, and the state owns and operates 16 of them. The state-owned Yellowstone Airport has seasonal airline service from Denver and Salt Lake City.



Teachers take a discovery flight during the annual Teacher Workshop with Aeronautics pilot Karen Speeg in the division's search aircraft.

Efforts to foster, promote, and supervise aviation and aviation safety are coordinated through educational efforts and programs, registering aircraft and pilots in accordance with Montana laws and regulations, and aerial search and rescue operations for aviation-related incidents. In accordance with the division's overall mission, it administers a loan and grant program to municipal governments to fund airport development and improvement projects. The division also conducts safety inspections at many public-use airports and sells airport parts at a reduced cost.

Educational efforts focus on a variety of industry-related programs. Recertification programs are available for FAA certified flight instructors and aircraft mechanics, as well as public school teachers with an aviation-focused curriculum. Survival skills training, youth aviation education, aviation outreach, and the annual Montana Aviation Conference keep the division hustling and bustling year-round, as well.

To learn more about the Aeronautics Division, please visit www.mdt.mt.gov/aviation/.

MDT Updating Storm Water Management Program

Montana's streams and lakes are valuable resources that contribute to our economy, public health, and ecosystems. To protect these resources, MDT implements a statewide Storm Water Management Program (SWMP). This program is intended to reduce the discharge of pollutants from our transportation infrastructure into local surface waters. Components of this program include:

- Public education to raise awareness of behaviors and activities that impact storm water and to motivate action to reduce pollution;
- Strategies to involve key target audiences in the development and implementation of the SWMP;
- Detection and elimination of illicit (i.e. unauthorized) discharges;
- Reduction of pollutant runoff from construction activities;
- Control of storm water runoff from new development and redevelopment projects; and
- Implementation of an operation and maintenance program, including training, that prevents or reduces pollutant runoff from MDT operations.

In accordance with regulatory requirements, MDT's SWMP is specifically targeted to control storm water pollutant discharges in the following urban areas: Billings, Missoula, Great Falls, Butte, Helena, Kalispell, and Bozeman. The SWMP is the formal document that

contains the strategies MDT is taking to reduce storm water runoff pollution into Montana's waterbodies.

MDT is currently taking action to update the SWMP and is asking for public input to improve the function of the program and further protect water quality. Learn more about this process and review MDT's current SWMP online: <https://mdt.mt.gov/pubinvolve/swmp>

MDT is requesting input from the public on this SWMP. If you have areas of concern regarding storm water discharges from MDT's transportation infrastructure and/or suggestions to improve other areas of the program listed above, please email comments to the following address: mdtms4datamanager@mt.gov. Alternatively, comments can be mailed to the following physical address:

Montana Department of Transportation
Environmental Services Bureau
Attention: Tom Gocksch, P.E., Environmental Engineering
Section Supervisor
2701 Prospect
PO Box 201001
Helena, MT 59620-1001

It is MDT's intent to complete revisions to the current SWMP by the end of 2021. Once the revised SWMP is drafted, it will be offered for public review and comment before finalizing. If you have any questions, please feel free to contact Tom Gocksch at 444-9412.

Montana's Ubiquitous Timber Bridges

By Jon Axline, MDT Historian

Probably the least remarkable bridge type on Montana's highways, timber bridges are significant to the development of the state's highway system in the twentieth century. There are, however, no tales of remarkable engineering feats associated with them or any juicy stories involving their construction. They remain the most common type bridge on Montana's highways. The bridges are also structurally unremarkable. Bridge engineers designed them to be structurally simple and inexpensive to build so that contractors could build a lot of them to keep up with the highway programs. Currently, Montana has 1,656 steel, concrete, and timber bridges on its NHS, primary, secondary, urban, and other routes. Approximately twenty percent of them are timber bridges mostly located in eastern Montana. Perhaps because they are so unexceptional is why timber bridges are so important.

Timber bridges consist, simply, of precut and creosote-treated components that could be constructed easily at small stream, drainage, and coulee crossings. They range in length from twenty feet to 380 feet; the average span length is nineteen feet. Multi-span structures rest on timber piling bents, some with diagonal sway braces and a few with the pilings encased in wood plank walls. The decks are supported by 6" x 18" timber beams, called stringers, with 2" x 4" wood decks overlaid with asphalt; timber curbs with sheet metal drains delineate the roadway. The number of stringers depended on the width and length of the structure. Originally, motorists could easily recognize timber bridges by the double-rowed wood guardrails, often painted white, that flanked the deck. Today, there are few timber bridges with the original guardrails. Beginning in the 1970s, MDT removed the top rails or completely replaced them with steel guardrails. This allowed the structures to accommodate wider loads, especially in the agricultural areas of the state. The original specifications also stipulated that Douglas fir, grown in the wetter climate of the Pacific Northwest, would be best suited for timber bridges.

The Montana State Highway Commission's first bridge engineer, Charles Kyle, developed a standardized design for timber bridges in the summer of 1915. The commission utilized that design, with a few modifications based on changing traffic demands, until the late 1950s and the beginning of the Interstate highway era. Sheridan County built the first highway commission-designed timber bridge on an unnamed route in the fall of 1915. Big Horn County built the second timber bridge about the same time. It crossed Fly Creek a little over three miles from the community of Toluca. Both were two-span structures with pile bents and the familiar double-rowed wood guardrails. Hundreds of timber bridges followed them on Montana's highways. As it turned out, timber bridges were perfect for the highway building booms of the late 1920s, 1930s, and early 1950s.

Timber bridges grew in importance to the development of the highway system after the passage of Montana's Good Roads Law in November 1927. The law enacted a three cents per gallon gasoline tax that provided the highway commission with the matching money needed to qualify for federal highway funds. From 1928 until 1930, commission contractors built 241 timber bridges on Montana's Federal Aid primary highway system. The design deviated little from that developed by Charles Kyle in 1915 with one important addition: new specifications for timber bridges mandated the timber components be treated with a preservative, creosote, to make them more long-lasting and durable. Wood preserving companies in Oregon and Washington supplied creosote-treated bridge components to Montana contractors well into the 1950s. By 1930, the number of timber bridges exceeded the number of steel truss, rein-

forced concrete, and steel stringer bridges built on the state's highways. The two oldest timber bridges still in service on Montana's highway system were built in 1930 and are located in Fergus County.

Even though Montana's economy tanked during the Great Depression, road and bridge construction boomed during that decade. From January 1931 to December 1941, the Montana Highway Department built 1,145 bridges on the state's primary and secondary roads. Of those, 948, or 83 percent, were timber bridges. Throughout that ten-year period, the number of timber stringer bridges built in any given year far outnumbered the number of steel truss, reinforced concrete, and steel stringer bridges built by the department. The highway department built most timber bridges in eastern Montana where the drier climate functioned as a natural preservative that augmented the creosote-treated structural components. Indeed, most of the existing Great Depression-era timber bridges that still carry traffic are in eastern Montana. Like the steel truss bridges, there were a few contractors who specialized in the construction of timber bridges. These included Walter Mackin of Billings, Dave Manning of Hysham, and L. V. Lockwood of Glasgow.

After three years of minimal operations during World War II, the highway commission initiated a second highway construction boom in the post-war years. The commission, however, built fewer timber bridges and concentrated more on reinforced concrete, steel stringer, and steel girder structures. The highway commission contracted for the construction of only 211 timber bridges from 1945 to 1960; most of which were on secondary highways. Changes to the design primarily involved the addition of extra stringers to accommodate the heavier traffic loads.

Timber bridges are still abundant on Montana's transportation landscape. Unlike many other states, which relied more on steel stringer and reinforced concrete bridges to expeditiously span obstacles, Montana's arid climate proved an excellent preservative for timber bridges, many of which are still in service. Simple in design, they were uncomplicated, inexpensive, and could be built in large numbers. They were perfect for the make work programs of the Great Depression and expedient in the 1950s. Eventually, however, the introduction of cheaper steel and prestressed concrete had a profound impact on the number of new timber bridges. Timber bridges, however, still exist in large numbers in eastern Montana and are a testament to the hardiness of the design and the Montana Highway Department's early road-building efforts.



Cottonwood Creek Bridge in Fallon County, Mont. (Built in 1934)

MDT Wants Your Comments On New Projects

To receive a list of highway projects MDT plans to present to the Transportation Commission, visit mdt.mt.gov/other/webdata/external/planning/proposed_proj.pdf, mdt.mt.gov/pubinvolve/stip.shtml or call 800-714-7296. You can mail comments on proposed projects to MDT Project Analysis Manager, PO Box 201001, Helena, MT 59620-1001 or email them to: mdtnewprojects@mt.gov.

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MDT's mission is to serve the public by providing a transportation system and services that emphasize quality, safety, cost effectiveness, economic vitality, and sensitivity to the environment. Newsline is a quarterly publication of the Rail, Transit, and Planning Division, Montana Department of Transportation.



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