

## EXECUTIVE SUMMARY

### Transportation Investment Generating Economic Recovery Program (TIGER)

#### MT Highway 64 – Rural Commuter Corridor Project

The full TIGER proposal was submitted on October 12, 2017 by:

Gallatin County  
Don Seifert, Chairman  
Gallatin County Commissioners  
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On behalf of Big Sky, Montana

To

Office of the Secretary of Transportation, U. S. Department of Transportation

## Overview

In September 2017, the U.S. Department of Transportation announced the opportunity for state and local stakeholders to apply for \$500 million in discretionary grant funding through the Transportation Investment Generating Economic Recovery (TIGER) program. The 2017 TIGER program stated that special consideration would be given to projects emphasizing improved access to reliable, safe, and affordable transportation for communities in *rural* areas, such as projects that improve infrastructure condition, address public health and safety, promote regional connectivity, or facilitate economic growth or competitiveness.

The Western Transportation Institute at Montana State University and Sanderson Stewart prepared a proposal for Gallatin County to submit on behalf of Big Sky Montana. As proposed, the \$10,292,000 request, the *Rural Commuter Corridor Project* will rehabilitate, bolster, and enhance a 10-mile segment of the MT 64 corridor from the U.S. 191 interchange through Big Sky, Montana. This essential corridor connects a growing number of visitors (tourists) to recreational opportunities, as well as residents to new jobs in the community of Big Sky. The project combines highway installations, transit additions, and trail upgrades to strengthen the transportation backbone of the region, and alleviates congestion by expanding transportation alternatives in a rural region with few alternative routes.

The project advances all five of the USDOT's primary selection criteria: 1) Safety, 2) State of Good Repair, 3) Economic Competitiveness, 4) Environmental Sustainability, and 5) Quality of Life, with an emphasis on enhancing safety and expanding economic opportunities for the fastest growing county in the state, and one of the fastest growing in the nation. Given the regional importance of implementing these corridor improvements, the Rural Commuter Corridor project has the strong support of the State of Montana, Gallatin and Madison counties, and private economic development organizations.

The proposal also highlights the efforts of local organizations that have provided leadership and funds to execute similar safety improvements in the Big Sky community. In recognition of the growing traffic volumes on this corridor, state, local and private interests have initiated and sponsored projects to identify and address targeted transportation needs on the corridor:

- The Big Sky Community Organization (BSCO) is currently drafting a Big Sky Parks and Open Space Plan, and updating the Big Sky Master Trails Plan, which have identified key projects for improving connectivity to parks and trails for pedestrian and bicycle users. The pedestrian tunnel, also included as part of the *Rural Commuter Corridor Project* proposal, has already been identified as a key issue in linking the north and south sides of the Big Sky community (those divided by MT 64).
- In a true grass roots effort, Big Sky community stakeholders, including Big Sky Resort Area District, Big Sky Town Center, Lone Mountain Land Company, and Yellowstone Club installed a traffic signal at the intersection, of MT 64 and Ousel Falls Road/Two Moons Road to improve safety for all forms of transportation.
- The Montana Department of Transportation (MDT) is conducting a speed study on MT 64 at the request of Gallatin and Madison Counties to identify safety issues and potential mitigations.
- Big Sky Transportation Study – Sponsored by the Big Sky Chamber of Commerce, this 2017 study conducted by Sanderson Stewart and funded by Gallatin and Madison Counties, and the

Big Sky Resort Area District (Resort Tax Board) identified and recommended key improvements to a 10-mile segment of MT 64 corridor from the U.S. 191 interchange through Big Sky. The study included a thorough evaluation of existing conditions relative to traffic operations and safety, a review of available historic traffic data from Montana Department of Transportation (MDT), a collection of new peak hour turning movement counts at major intersections, and a review and analysis of 10 years of crash data provided by MDT. A draft of the study may be found here: [https://www.dropbox.com/sh/e3meut68r5dgr2w/AABaJdSNknAqnjT0D0dy8X2ta?dl=0&preview=Big+Sky\\_Report\\_DRAFT\\_080217.pdf](https://www.dropbox.com/sh/e3meut68r5dgr2w/AABaJdSNknAqnjT0D0dy8X2ta?dl=0&preview=Big+Sky_Report_DRAFT_080217.pdf).

The project components included in the Rural Commuter Corridor Project submitted to the TIGER request were recommendations identified in the above mentioned Big Sky Transportation Study. These components were selected as priority safety measures that currently had no potential funding sources outside of TIGER. The proposed projects and their benefits are detailed in the following Project Components section.

## Project Components

This project will build on the foundational transportation network which includes U.S. Highway 191, Montana Highway 64, and the Skyline transit system. Through strategic investments at high priority locations, and expansion of transit/HOV options, the project will develop a more robust system that can accommodate rapidly growing traffic along the corridor, in a safe and sustainable manner. Specific components include:

### Install left turn lanes at key intersections to ease congestion and enhance safety

The Big Sky Transportation Study included the evaluation of turn lane guidelines at each of the corridor intersections using existing, 10- year and 20-year volumes based on the methodology outlined in MDT's Traffic Engineering Manual (November 2007). Turn lanes are warranted at many of the intersections based on existing volumes alone. Additional turn lanes will become warranted with each incremental increase in traffic volume up to the point where they are essentially all warranted for 20-year future volume projections (see **Error! Reference source not found.**).

Table 1: Proposed Left Turn Improvements

TURN LANE WARRANTS		MT 64 & Conoco/Chamber	MT 64 & Powder Light Sub (Ace Hardware)	MT 64 & Little Coyote (East)	MT 64 & Big Sky Medical	MT 64 & Huntley	MT 64 & Big Pine	MT 64 & Andesite	MT 64 & Little Coyote (West)	MT 64 & Big Sky Resort	MT 64 & Sitting Bull
2017 Volumes	EB Right-Turn Lane	✓	--	--	x	✓	✓	x	--	x	x
	EB Left-Turn Lane	x	✓	✓	--	--	--	x	--	--	--
	WB Right-Turn Lane	x	x	x	--	--	--	x	x	--	--
	WB Left-Turn Lane	✓	--	--	x	✓	✓	✓	x	✓	x
2027 Volumes	EB Right-Turn Lane	✓	--	--	x	✓	✓	x	--	x	x
	EB Left-Turn Lane	x	✓	✓	--	--	--	x	--	--	--
	WB Right-Turn Lane	x	✓	✓	--	--	--	x	x	--	--
	WB Left-Turn Lane	✓	--	--	x	✓	✓	✓	✓	✓	✓
2037 Volumes	EB Right-Turn Lane	✓	--	--	x	✓	✓	x	--	x	x
	EB Left-Turn Lane	x	✓	✓	--	--	--	x	--	--	--
	WB Right-Turn Lane	x	✓	✓	--	--	--	x	x	--	--
	WB Left-Turn Lane	✓	--	--	x	✓	✓	✓	✓	✓	✓

✓ = Turn-Lane Warranted                      x = Turn-Lane Not Warranted

Based on current and projected future traffic volumes, seven proposed left turn lanes are included in the project to ease congestion, expand capacity, and reduce risk of transportation related crashes. These turn lanes are in addition to installing a left-turn signal (creating a left-turn signal phase) on the existing signal at U.S. 191 and MT 64. The work, from east to west, is as follows:

Left turn lanes and left-turn phasing of MT 64/U.S. 191 signal (\$5,954,145)

- Install NB lead left-turn phasing & associated work (MT 64/U.S. 191)
- Left-turn lanes at Powder Light Subdivision (Ace Hardware - East)
- Left-turn lanes at Powder Light Subdivision (Ace Hardware - West)
- Left-turn lanes at Market Place (Meadow Village)
- Left-turn lanes at Huntley Drive
- Left-turn lanes at Big Pine Drive
- Left-turn lanes at Andesite Road
- Left-turn lanes at Big Sky Resort Road

Install signage and related improvements to enhance road safety conditions (\$547,700)

- Wildlife signage and pull-outs
- Curve warning signage
- Eliminate unauthorized roadway shoulder parking by Conoco (MT 64)

Expand safe facilities for pedestrians and non-motorized users (\$1,302,950)

- Grade separated pedestrian crossing tunnel at MT 64 & Little Coyote Road
- Extend trail and add pedestrian crossing to access the Big Sky Community Park and connect the existing multi-modal trail system.

Expand and enhance transit alternatives on U.S. 191 corridor (\$2,487,205)

- Purchase four motor coaches for Skyline
- Purchase six vans for Skyline’s vanpool program

# Benefits

The benefits of the proposed project components are summarized in *Table 2*.

*Table 2: Benefit Summary of Project Components*

<b>Improvement</b>	<b>Benefits</b>
Left Turn Lanes	Safety (reduce crashes); Travel time savings
Wildlife Signage and Pull-outs	Safety (reduce crashes); Travel time savings
Curve Warning Signage	Safety (reduce crashes)
Pedestrian Tunnel	Safety; Travel time savings (for vehicles)
Motor coaches and Vanpool Vans	Travel time savings (fewer cars on road), expand cost-effective travel alternatives, support growth of local economy

The project components advance all five of the USDOT’s primary selection criteria as summarized below.

## 1. Safety

Due to the multifaceted components of the project, multiple safety outcomes will be recognized. A thorough evaluation of existing conditions relative to traffic operations and safety conducted by Sanderson Stewart established a baseline for this project. It included a review of available historic traffic data from Montana Department of Transportation (MDT), collection of new peak hour turning movement counts at major intersections, and review and analysis of crash data provided by MDT for the past 10 years. The proposed additions of left turn lanes, curve warning signage, wildlife signage and pullouts, grade separated pedestrian crossing, transit/bike/pedestrian facilities, and eliminating on-street parking at Conoco will significantly improve safety.

## 2. State of Good Repair

The proposed transit improvements provide an example of an asset that if left unimproved, could threaten the future transportation network efficiency, including the accessibility and mobility of people, and economic growth of the community. While the Montana Department of Transportation (MDT) has State funds to maintain MT 64, the reality is that this is an “off network” route, meaning that Federal funds are not typically allocated to improvements on this roadway. The TIGER funds are critical to address many of the needed improvements noted in this application. As emphasized throughout the proposal, MT 64 provides the *only* public access to the Big Sky community. It is therefore critical that the roadway be improved and maintained in a state of good repair so that the community and the region can continue to thrive.

## 3. Economic Competitiveness

If MT 64 were to fail, the economic competitiveness of the entire community would essentially fail. The project components noted in this application will decrease transportation costs and improve access to businesses in Big Sky, a rural community, thereby allowing a meaningful connection to the many job opportunities that exist in the community. The project will improve the reliability and efficiency of connecting the community to the region, of both people and goods, which will result in further growth and job opportunities.

#### 4. Environmental Sustainability

By implementing the proposed measures outlined in Safety, this project could also provide environmental sustainability. Wildlife signage and pullouts will improve habitat connectivity by encouraging safer passage for wildlife moving through this corridor.

#### 5. Quality of Life

As the only public access to the Big Sky community, MT 64 serves as the backbone of the community. Enhanced transit options in this corridor will have a significant positive impact on this isolated rural area and play a major role in improving quality of life by improving access to employment and other services in the area. The Skyline bus system provides access to the recently opened hospital in Big Sky, as well as provides a connection to the larger hospital and additional health services in Bozeman.

## Benefit Cost Analysis

The Benefit Cost Analysis (BCA) took a very conservative approach, while still providing a positive Net Present Value (NPV) for the project. Instead of trying to capture (calculate) every potential benefit, it was decided to use a basic and conservative approach, meaning that the true NPV is likely much higher than what was calculated. For example, the BCA indicated that fatalities will be reduced by 50% over the twenty-years after completion of the project (an overall reduction of three fatalities). The benefits of those reduction were shown in Years 10, 15 and 20, reducing the overall value of the savings. If, for example, the benefits of those reductions were shown in Years 3, 7, and 10, the NPV would increase by \$4,025,134. The NPV was calculated to be \$5,507,902, which is a very conservative estimate of the net present value of the project.

The NPV calculation was also very conservative regarding the reduction of injury and property damage only crashes. The NPV calculated benefits on a reduction of one injury crash per year and 5 property crashes per year (both equating to a 30% reduction at current traffic volumes). As noted in the application, the Average Annual Daily Traffic (AADT) is expected to more than double during the next twenty years, so given the increase in traffic volumes, it is likely that more crashes would occur, and the corresponding 30% reduction would have higher values in the “out years.”

The travel time savings calculation was based on a very small amount, starting at just 3.6 seconds per vehicle after construction is completed, and growing to just 1.2 minutes (72 seconds) per vehicle 20 years after the project is completed. This is believed to be a very conservative figure, and could easily be increased to show a higher NPV.

In general, the NPV calculated to be \$5,507,902 is very conservative and could easily have been two to three times higher.