

Memorandum

Date:	Friday, June 18, 2021
Project:	City of Billings Inner Belt Loop BUILD
To:	Heidy Bruner, PE, FHWA
From:	Jon Schick, CEP, HDR Environmental Planner Mike Parsons, PE, INCE, Acoustic Engineer
Subject:	Noise Determination Memo

Introduction

In 2020, the City of Billings (City) was awarded \$11.6 million in funding from the Federal Better Utilizing Investments to Leverage Development, or BUILD, Transportation Discretionary Grant program to fund transportation improvements in the northwest Billings area. The overall scope of the proposed Northwest Billings Connector and Marathon Trail Project (project) includes design and construction of five miles of new collector roadway and eight miles of trails. The proposed project includes two main project elements—the Inner Belt Loop and the Skyline Trail—as described in the 2020 grant application and as shown in Figure 1 and described below.

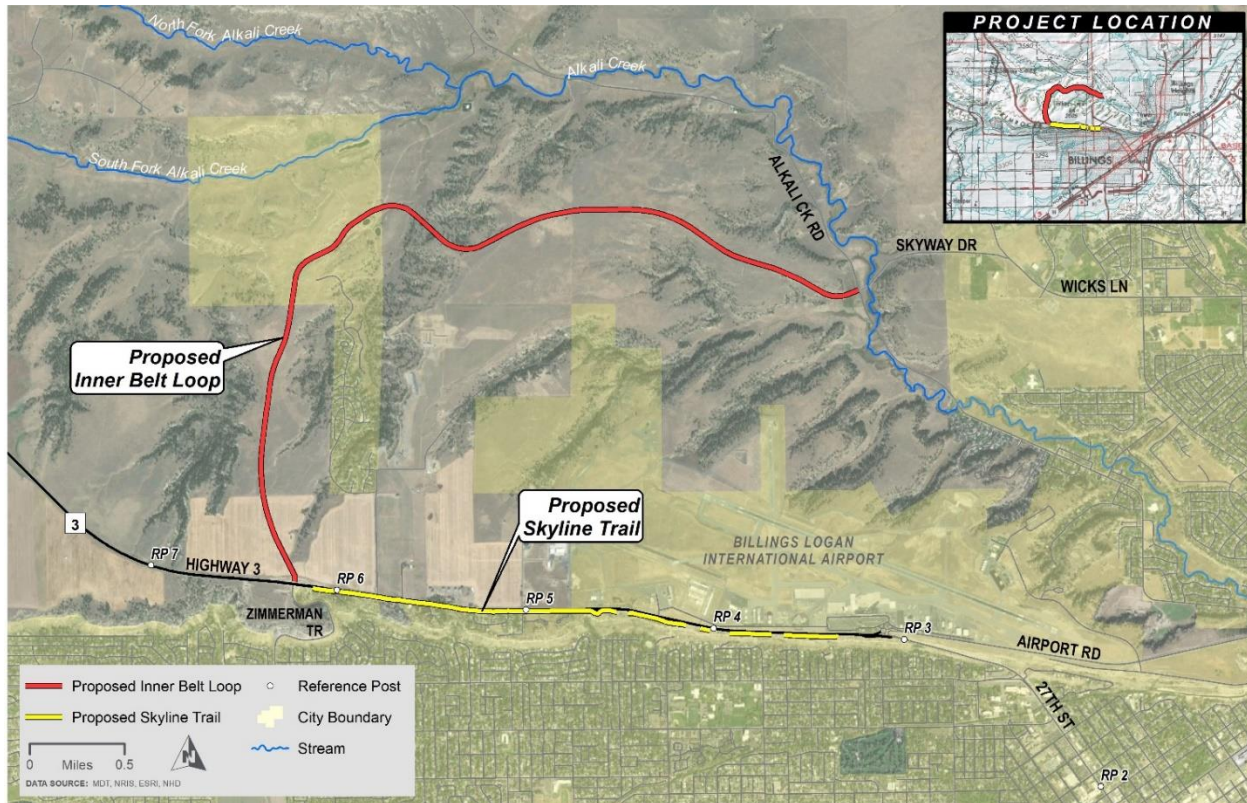


Figure 1. Northwest Billings Connector and Marathon Trail Project Elements

1. The Inner Belt Loop: This is a five-mile stretch of two-lane rural section roadway connecting Montana Highway 3 (MT-3)/Zimmerman Trail Road to Akali Creek Road/Skyway Drive accompanied by a separated multi-use trail. It will create a new connection between the Heights and West End. This proposed road has also been referred to as the Northwest Billings Connector.
2. The Skyline Trail: This is an approximately three-mile long 10-ft-wide multi-use trail that will extend from the intersection of MT-3/Zimmerman Trail through Airport Road along the south side of MT-3.

The purpose of the proposed project is to construct a new arterial roadway to provide an alternative transportation route between Billings' Heights area and West End area to alleviate widespread congestion near downtown resulting from a constrained arterial roadway and limited transportation options. In addition, the proposed project will enhance safety and travel time, provide economic development opportunities, and improve access to recreational opportunities.

The proposed project is a Type I project as defined by 23 CFR 772 and requires compliance with provisions of 23 CFR 772 and MDT's Noise Policy. As part of the environmental documentation, HDR reviewed the potential noise impact expected from the proposed project.

Project Location

The study area is located on the northern edge of Billings, Montana, and is partially located within the City of Billings limits. The study area is located to the north of MT-3 and to the west of Alkali Creek Road. The study area is located within portions of Section 18 of Township 1 North, Range 26 East and Sections 13, 14, 15, 22, and 27 of Township 1 North, Range 25 East.

Noise Determination

Following Section 5.4.1 of the Montana Department of Transportation (MDT) Noise Analysis & Abatement Policy¹ a noise study boundary of 500 feet on each side of the proposed roadway was drawn. It was determined through a review of aerial photography and mapping that there were not any noise receptors present in the noise study boundary. This determination was confirmed by the City's consultant design engineer per the ninety percent plans completed for the project. Therefore, noise impacts are not predicted as part of the proposed project.

Determination of Future Noise Levels on Undeveloped Lands

Highway traffic noise must be reduced through a program of shared responsibility. Local governments can use their authority to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that developments are planned, designed, and constructed in such a way that noise impacts are minimized, such as in noise mitigated developments.

It is MDT's policy to furnish the results of traffic noise analyses to local government officials. The Federal Highway Administration's (FHWA) Traffic Noise Model (TNM), Version 2.5, was used to calculate the distance to the design year noise levels of 56 db(A), 60 dB(A), 64 dB(A),

¹ Montana Department of Transportation, Traffic Noise Analysis and Abatement Policy (December 7, 2016).

66 dB(A) and 71 dB(A) for undeveloped lands. In order to create a conservative estimate, the noise model assumed flat terrain and a design speed of 45 miles per hour (mph). The maximum traffic volumes for the worst-noise hour were assumed to be 1,500 vehicles per hour per lane². A vehicle-mix of 94% autos, 5% heavy trucks and 1% buses was modeled³. Results are presented in Table 1.

TABLE 1 – DISTANCE TO FUTURE NOISE LEVELS

Design Year Noise Level	Distance from Edge of Nearest Travel Lane
56 dB(A)	372 feet
60 dB(A)	237 feet
64 dB(A)	152 feet
66 dB(A)	107 feet
71 dB(A)	57 feet

² Colorado Department of Transportation, Noise Analysis and Abatement Guidelines, *White Paper: General Methodology for Determining Proper Traffic Volumes for Use in Noise Analyses* (September 21, 2020).

³ Inner Belt Loop Corridor Study, Metropolitan Planning Organization, Billings Montana, Sanderson Stewart (November 2020).