

# METHODS & ASSUMPTIONS

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

Office of Project Development

May 19, 2023



**Stakeholder Acceptance Page:**

The undersigned parties concur with the Methods and Assumptions for the Hill City Master Transportation Plan as presented in this document.

SDDOT:

FHWA:

\_\_\_\_\_  
Signature

The South Dakota Division of FHWA  
has relinquished oversight of this study  
to the South Dakota Department of  
Transportation.

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

(1) Participation on the Study Advisory Team and/or signing of this document does not constitute approval of the Hill City Master Transportation Plan’s Final Report or conclusions.

(2) All members of the Study Advisory Team will accept this document as a guide and reference as the study progresses through the various stages of development. If there are any agreed upon changes to the assumptions in this document a revision will be created, endorsed and signed by all the signatories.

## I. Introduction and Project Description

### Background Information:

Hill City was established in 1876 after the discovery of gold at French Creek 13 miles south of the townsite. The town was almost completely abandoned shortly thereafter after gold was discovered in the northern Black Hills. In 1883 tin was discovered near Hill City and the population of the city began to rebound, although this tin fueled growth would end in 1902 after the tin mining company found it had become unprofitable. The first railway line came to Hill City in 1893 when the Burlington Northern Line, also known as the High Line, operated by the Chicago, Burlington, and Quincy Railroad first arrived in Hill City. At its peak the Burlington Northern Line was operating trains carrying primarily freight at 45-minute intervals. On January 20, 1900, the Black Hills Central Line was completed as a spur off the Burlington Northern Line from Hill City to Keystone. In 1957 the Black Hills Central Line was acquired by the Black Hills Central Railroad and began operation tourist passenger services on the line and is locally known as the 1880 train. The Burlington Northern Line ceased passenger operation in 1949 and was completely abandoned by 1983. In the 1990s it was converted into the George S. Mickelson Trail, a regional bike network. Hill City currently has US Highway 16 passing through as its primary downtown corridor with the US Highway 16 bypass located one block East. Hill City's population at the 2020 census was 872 and had a peak population of 948 in 2010.

### Location:

The area that this study is analyzing is Hill City's city limits and anticipated extraterritorial boundary, which is represented in Figure 1 of this document.

### A. Need for Study:

Hill City has expressed a need for a Master Transportation Plan and laid the groundwork for one in their comprehensive plan that was adopted in 2017. The transportation and utility plan outlined in the comprehensive plan lays out priorities for road paving projects and other community generated suggestions. This section of the comprehensive plan does not include any long-term visions for the future of the transportation network, nor does it suggest solutions to the community generated suggestions or any issues currently present within Hill City. The current state of Hill City's infrastructure does provide opportunity for positive change. With the location of the school nestled between both Highway 16 and the Highway 16 Bypass, school aged pedestrians, traffic heading to and from the school, and traffic passing through Hill City must all compete with one another for space. In addition to this, the sidewalk network throughout the city is disconnected which limits the number of safe routes for pedestrians.

### B. Study Advisory Team Members:

<b>Members</b>	<b>Organizations</b>
Brett McMacken	City of Hill City
Justin Asher	City of Hill City
Gary Auch	City of Hill City

Steve Gramm	SDDOT – Project Development
Katrina Burekhard	SDDOT – Project Development
Cole Hansen	SDDOT – Project Development

**C. Study Schedule:**

The study is to take place from May 15<sup>th</sup> through the middle of August.

March- April	Communities submit application and a community is selected
May:	Meet and Greet with city – identify problem areas Gather field inventory Establish SAT members
June:	Gather field inventory Conduct stakeholder meetings Hold first public information meeting Initiate web-based survey
July:	Close public input, including survey Refine and consider transportation alternatives Deduce recommendations Produce draft plan document Hold public meeting presenting results
August:	Produce and publish final plan document

**D. Facilities that will be affected by the study:**

The study will have no direct impact on any facilities in the study area, as the purpose of this study is to provide an inventoried analysis of Hill City’s transportation system. The findings of this study will provide examples of feasible projects through the identification of transportation related issues and/or deficiencies unique to Hill City.

**E. Previous Studies:**

Pennington County Master Transportation Plan, June 2012  
Hill City Comprehensive Plan, 2017  
Hill City Trails Master Plan, 2022

**II. Study Area**

The study area for the Hill City Master Transportation Plan is highlighted below in Figure 1. This study area encompasses Hill City’s city limits and anticipated extraterritorial boundaries.

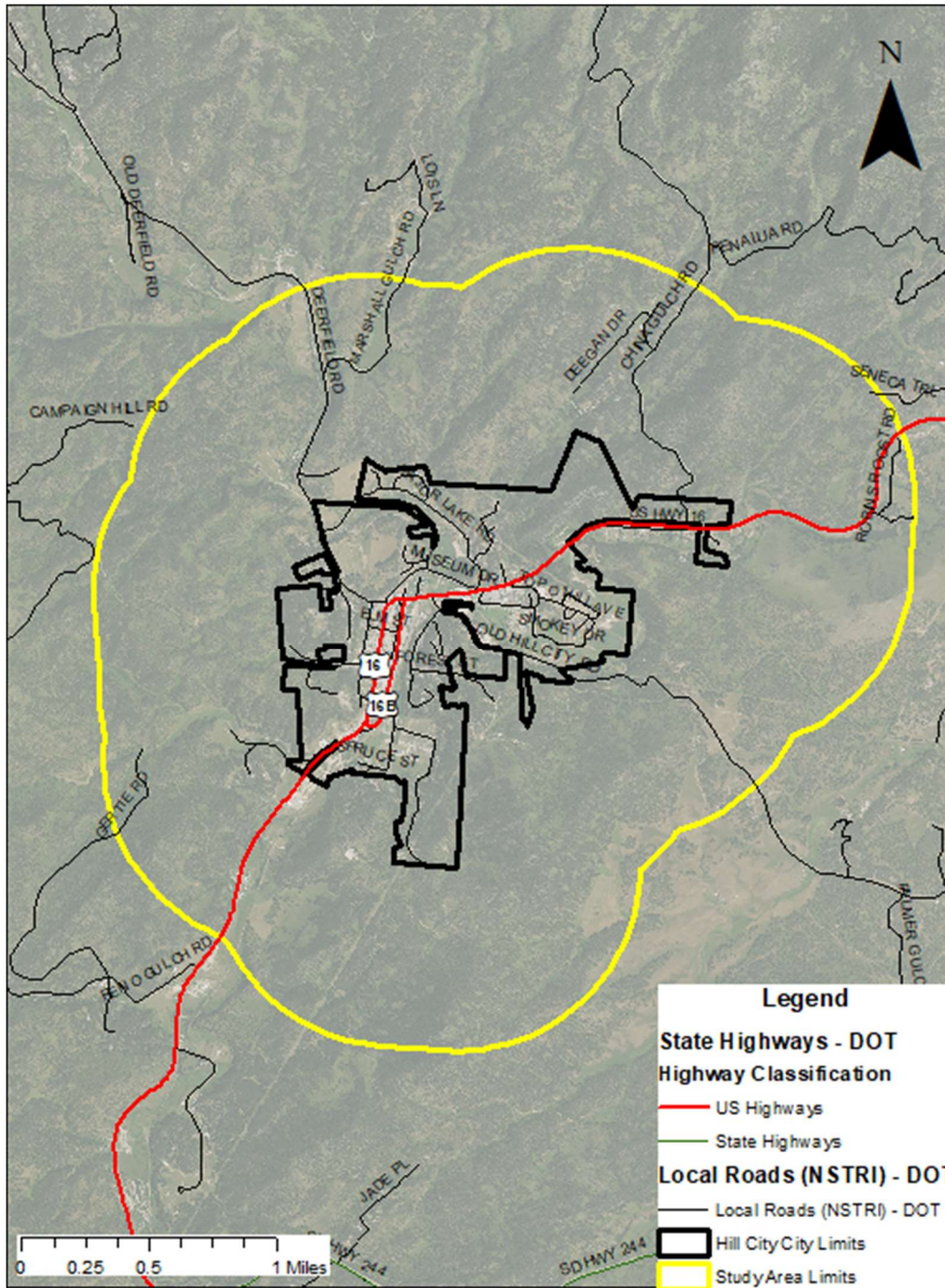


Figure 1 – Hill City Study Area

### III. Analysis Years/Periods

Upon completion, the Hill City Master Transportation Plan will have a planning horizon of a minimum of 20 years. If at any point after the Master Transportation Plan is completed and data becomes invalid an interim year may be placed by members of the Study Advisory Team. The Master Transportation Plan incorporates peak usage periods as well as special events like the town’s celebrations in July in addition to increased travel throughout the area

in the summer months due to tourist generated traffic.

#### **IV. Data Collection**

##### **Field Data:**

Field data for this study will be collected through observational logging and inventory of transportation related infrastructure. More specifically, the state of the infrastructure, the performance of the system in relationship to safety, and the performance in relationship to ease of mobility.

##### **Supplied Data:**

Data supplied to SDDOT to complete this study includes Hill City's municipal ordinances and future development plans. Additional data already supplied by SDDOT's GIS database will be utilized to complete the study as well.

#### **V. Traffic Operations Analysis**

A traffic count will be performed at the intersection of Old Hill City Rd. and US Highway 16. Analysis will be done using HCS software.

#### **VI. Travel Forecast**

Traffic projections will be made using SDDOT growth factors for rural Pennington County and will be done with a model.

#### **VII. Safety Issues**

Crash data will be analyzed to identify areas that represent significant safety issues. In addition to crash data, a major safety issue that the study will address is the interaction between the children attending Hill City's School and the traffic associated with the busy US Highway 16 and the US Highway 16 Bypass. The presence of a high amount of pedestrian traffic due to the school and the George S. Mickelson Bike Trail creates several crossings, both marked and unmarked, across US Highway 16 Bypass. That combined with many drivers ignoring the posted yield to pedestrian signage creates numerous safety hazards along this route through the city.

#### **VIII. Selection of Measures of Effectiveness (MOE)**

Due to no traffic operation analysis and no travel forecast will be made for this study there cannot be a MOE.

#### **IX. Deviations/Justifications**

There are no known deviations from study standards at this time. If deviations are deemed necessary during the study process, these issues will be documented and presented to the Study Advisory Team.

#### **X. Conclusion**

After the conclusion of the study process, the City of Hill City will receive a Master Transportation Plan that will be able to be used in the decision-making process. The final document will accomplish the following:

- Provide baseline conditions.
- Document the public involvement process.

- Document the process used for the identification of future needs (Methods and Assumptions).
- Identify projects and solutions that will be provide Hill City a defined trajectory for transportation planning moving forward.
- Describe and highlight enhancements to existing transportation facilities and future roadway segments using maps and photographs of similar improvements where applicable.
- Describe proposed solutions for known problem areas and additional problem areas that arise throughout the development of the plan.
- Identify and describe desirable projects that go beyond meeting future needs of the transportation system, including a planning-level cost estimate.
- Demonstrate (by the use of a matrix that evaluates project cost, need, potential impacts, and anticipated benefits) a methodology for prioritization of improvement projects.
- Prioritize projects and present a course of action.