

Public Input Meeting

April 20, 2023

I-94 and Sunset Drive Interchange, Exit 152
Preliminary Engineering and Feasibility Study
City of Mandan
1-094(231)152
PCN 23594



Welcome!

The purpose of the Public Input Meeting is to receive public input and comments on a preliminary engineering and feasibility study of the I-94 Interchange at Sunset Drive (Exit 152). The study will develop and evaluate plausible reconstruction alternatives for the interchange.

This meeting is an information gathering meeting that is an open forum. It is an opportunity for you to communicate to project design staff information and ideas that may be beneficial to the designers as they work through the design process to improve this interchange. Emailed and written comments are encouraged. If you have thoughts on travel through the existing interchange or are aware of historic buildings, septic systems, drain tiles, underground sprinklers, drainage problems, or other specific information such as safety concerns or thoughts on pedestrian and bicycle accommodations along the corridor, please share this with design staff.

Why is the Project Needed?

The project will evaluate the operational and geometric deficiencies of the current interchange and develop improvement alternatives and modifications to the I-94 and Sunset Drive interchange (Exit 152).

Project alternatives will also address the following:

- Increased traffic due to new developments in the area has caused roadway system inadequacies for proposed future land use and accelerated pavement deterioration.
- Skewed on and off ramps have inadequate sight distance for vehicles.
- Existing vertical clearance beneath Interstate 94 is greater than 2 feet lower than NDDOT design standards. This has resulted in bridge hits, resulting in safety concerns, traffic delays and the need for emergency repairs.

What are the Project Limits?

The study limits for the project are shown below. The limits along Interstate 94 begin at MP 151.5 (Scenic Overlook along eastbound I-94) to MP 153.0 (near Collins Avenue), Sunset Drive from 500 feet north of Old Red Trail to 500 feet south of Boundary Street NW, Old Red Trail from 500 feet west of Sunset Drive to 500 feet east of Sunset Drive, and Boundary Street NW from 500 feet west of Sunset Drive to 500 feet east of Sunset Drive



I-94 Interchange (Exit 152) Sunset Drive Study Area Map

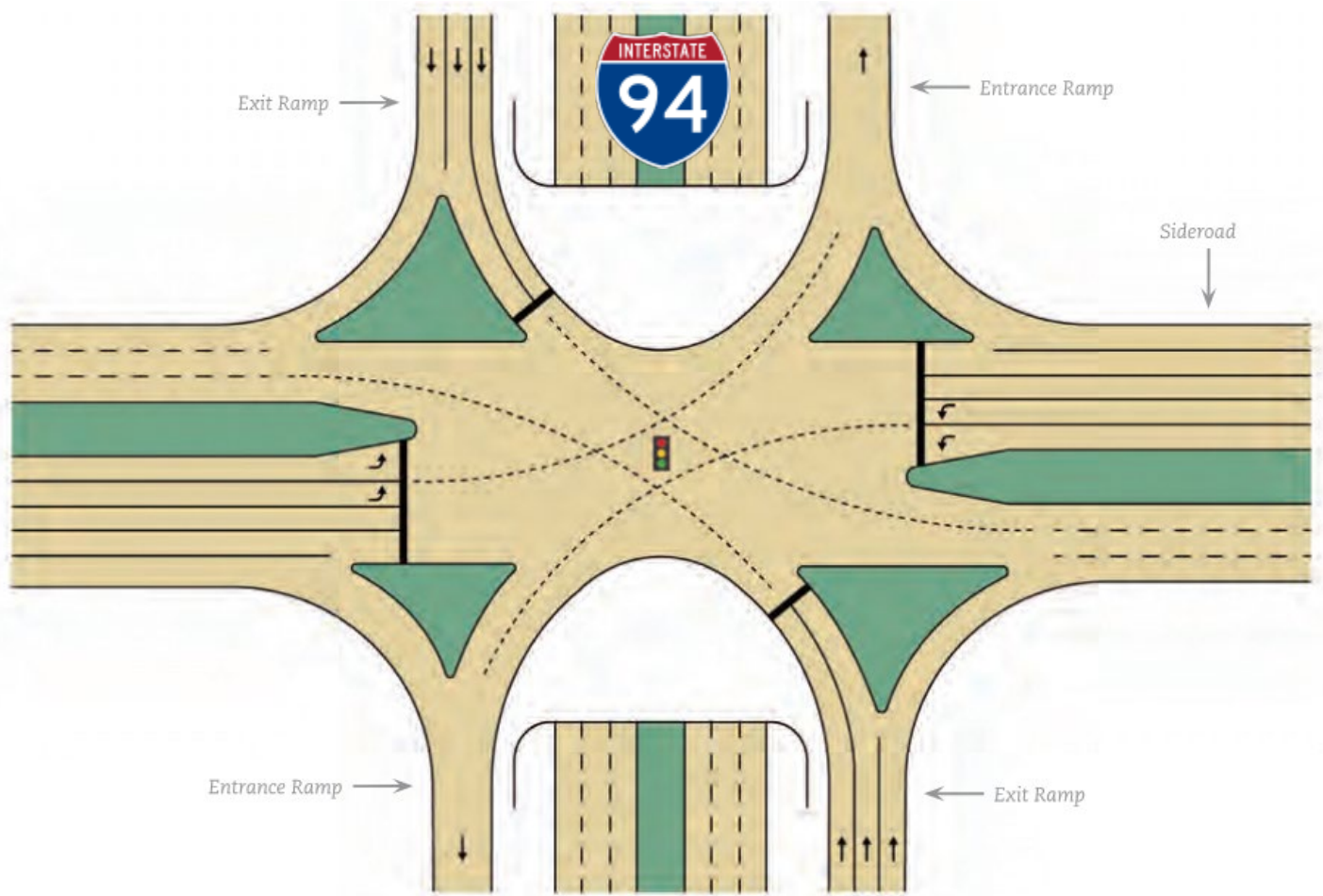
What types of interchanges are the project team evaluating?

The following pages contain representative examples of four interchange options being evaluated for the Sunset Drive Interchange along with the benefits they provide to improve operations and safety.

See the interchange alternative exhibits for detailed layouts of each interchange type at Interstate 94 and Sunset Drive and the preliminary impacts associated with each alternative.

Alternative #1 – Single Point Urban Interchange (SPUI)

A single-point urban interchange (SPUI) is a modification of the traditional diamond interchange that is in place at Sunset Drive today. The SPUI has the advantage of allowing opposing left turns to proceed simultaneously by compressing the two intersections of a diamond into a single intersection under the freeway. The term “single point” refers to the fact that all through traffic on the surface street, as well as the traffic turning left onto or off the freeway, can be controlled from a single set of traffic signals. Due to the space efficiency of SPUIs relative to the volume of traffic they can handle, the interchange design is used extensively when reconstructing existing freeways in urban environments.



Benefits:

- **Improved safety:** With only one signalized intersection rather than two at a conventional diamond interchange, vehicles only cross paths at one location.
- **Increased efficiency:** Main intersection operates with three traffic signal phases rather than four phases in a conventional diamond interchange, which reduces overall interchange delay.
- **Fewer traffic signals:** A single signalized intersection, rather than two intersections at a conventional diamond interchange, improves travel times along Sunset Drive.

Alternative #2 – Partial Cloverleaf Interchange (Parclo)

A Partial Cloverleaf Diamond Interchange has fewer than four loop ramps, making it part cloverleaf and part diamond. Loop ramps connect drivers from the sideroad to the freeway or vice versa. In addition to increased capacity, the loop ramp eliminates one left turn on the sideroad at the eastbound ramps. Loop ramps can also be used in lieu of a diagonal ramp to minimize impacts in any one quadrant of the interchange.

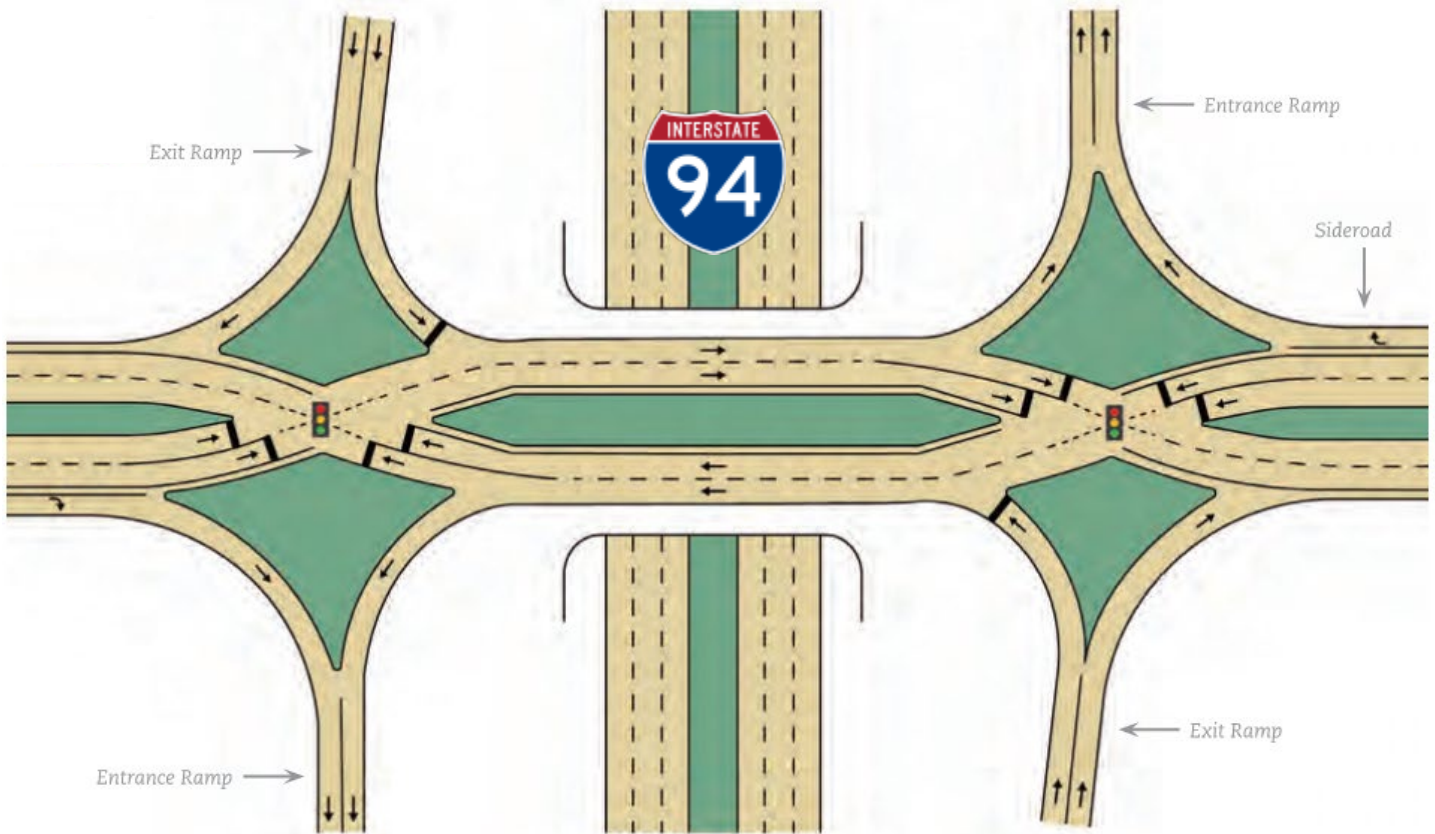


Benefits:

- **Increased efficiency:** Provides for improved operations on the crossroad by eliminating the left turn onto the freeway entrance ramp for eastbound movement.
- **Easier access to freeway:** Design allows southbound traffic on Sunset Drive to enter the freeway without crossing opposing lanes of traffic.
- **Cost effective:** A Parclo can have a narrower cross section and may be more cost effective than a retrofit or new interchange construction.

Alternative #3 – Diverging Diamond Interchange (DDI)

A Diverging Diamond Interchange (DDI), sometimes called a “double crossover diamond”, is a new type of interchange that connects a freeway with a major highway. The DDI is based on a standard diamond interchange with a shift in the highway thru traffic within the interchange to safely and efficiently accommodate high volume left turn movements. Within the interchange, traffic on the highway briefly drives on the left side of the road to allow left turn movements to occur without crossing oncoming traffic or stopping. A DDI has fewer conflict points than a standard diamond interchange, reducing the opportunities for crashes, and there is greater capacity for vehicles at the interchange.

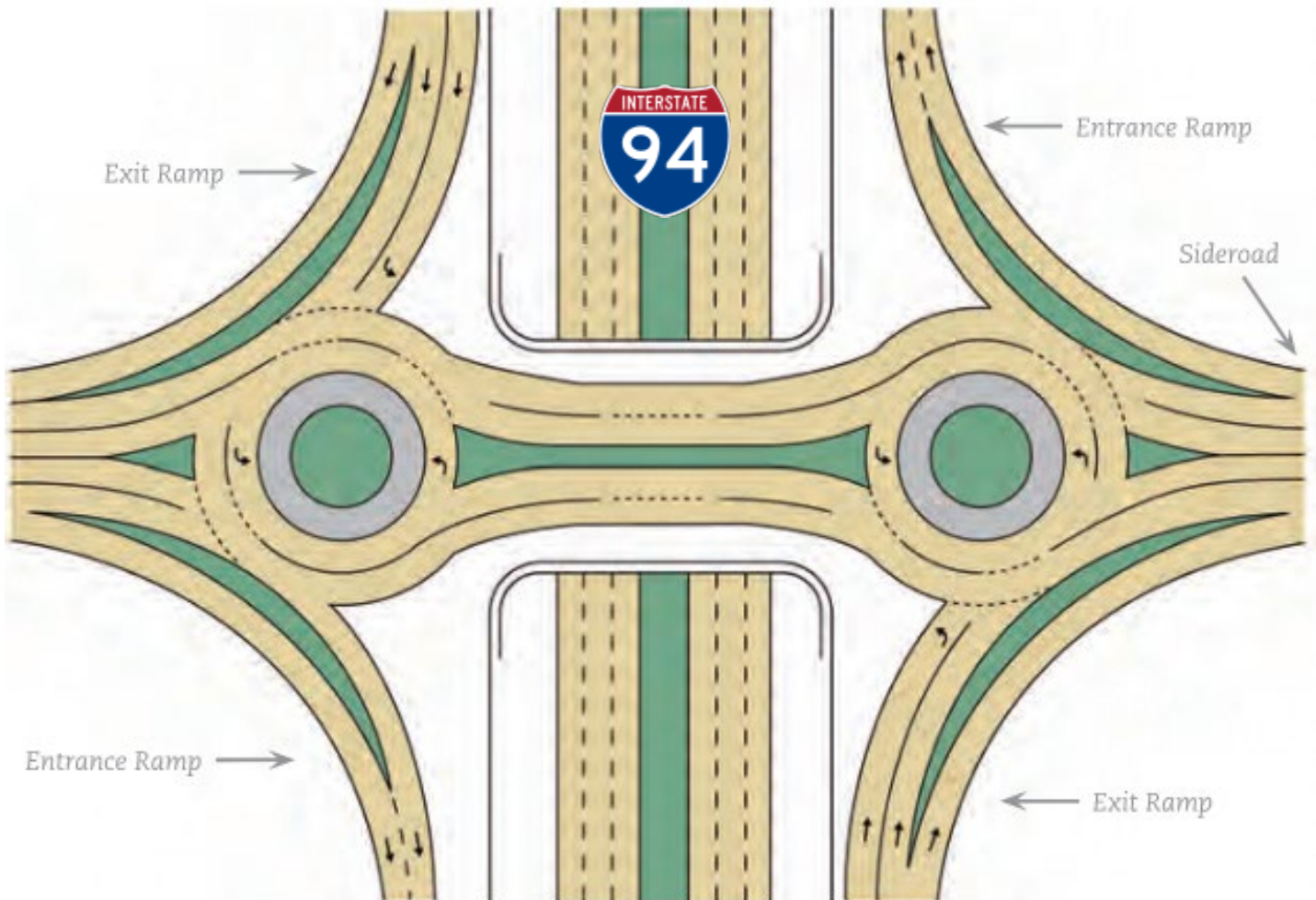


Benefits:

- **Improved safety:** Reduces the number of points where vehicles may cross paths.
- **Increased efficiency:** Crossovers can operate with only two traffic signal phases, which allows the interchange to handle a greater volume of traffic and operate with fewer delays.
- **Easier access to freeway:** Design allows traffic from Sunset Drive to enter and exit the freeway without crossing opposing lanes of traffic for all ramp movements.
- **Cost effective:** Since there are no left-turn lanes on Sunset Drive, a DDI can have a narrower cross section and may be more cost effective.

Alternative #4 – Diamond Interchange with Roundabouts

A diamond interchange includes four ramps, two exiting and two entering the free-flow highway. Diamond interchange designs are very economical compared to other options because they require less land and materials.



Benefits:

- **Improved safety:** Reduces the number of points where vehicles can cross paths and eliminates the potential for right-angle and head-on crashes.
- **Increased efficiency:** Decreases the delay for ramp traffic and eliminates signal coordination between the two ramp terminals.
- **Continuous flow:** Yield-controlled design minimizes backups on the freeway, reducing the potential for high-speed, rear-end crashes.
- **Cost effective:** Allows for a narrower bridge as it eliminates at least two turning lanes.

Intersection Improvements

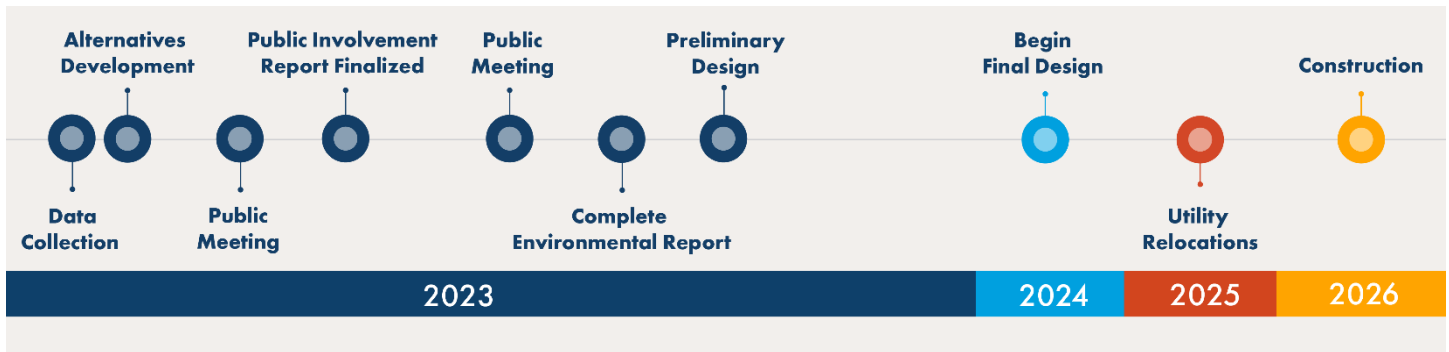
The use of roundabouts or signalized intersections are being considered at the following locations:

- Sunset Drive at Old Red Trail
- Sunset Drive at Boundary Street

Will there be Right of Way Needs for the project?

Right of way acquisition and temporary grading easements may be required for the project and the needs vary among the project alternatives. The project team will continue working diligently on the alternatives design and project impacts with the goal to minimizing permanent right-of-way acquisitions from adjacent properties.

What is the Tentative Project Schedule?



We want to hear from you!

We encourage you to talk to our project staff, view exhibits and discuss the proposed improvements. If you have questions or comments about the project, please use the contact information listed below. For written comments, please use the comment form online or email your comments to us by **May 5, 2023** to:

Mead & Hunt, Inc.
Attn: Chris Rossmiller
600 South Second Street, Suite 120
Bismarck, ND 58504

OR

Email comments with the subject line
"Public Input Meeting" to:
c.rossmiller@meadhunt.com

Thank you for attending the public information meeting regarding the proposed improvements to the Sunset Drive Interchange.

A virtual presentation and exhibits of each alternative are available on the project website:

www.dot.nd.gov/projects/bismarck/exit152/

Addition links to meeting forms:

Sign-in Form



Title VI Participation Survey



Comment Form

