

I. Bismarck Interchange Justification:

A. Do Nothing

The 'do nothing' option does not address the future need to reduce traffic congestion on both US 83 and Centennial Road. The combined average daily traffic (ADT) for the network is projected to be 106,000. With this option the majority of the average daily traffic (105,500) would be carried by US 83 and Centennial Road. The combined average daily traffic of 105,500 on US 83 and Centennial Road would be 27,500 ADT over the combined capacity of the corridors. This is already taking into account that Centennial Road will be improved to a 5-lane facility. Therefore, this option would not address the future capacity needs of the network.

B. Build Overpass Only

The 'build overpass only' option would provide a connection across Interstate 94, however it would not pull enough traffic from US 83 and Centennial to the proposed new beltway to alleviate the traffic congestion. The combined average daily traffic (ADT) for the network is projected to be 106,000. With this option the proposed beltway would carry 3,000 ADT. Therefore; the remaining projected total of 103,000 ADT on US 83 and Centennial Road would be 25,000 ADT over the combined capacity of the corridors. This is already taking into account that Centennial Road will be improved to a 5-lane facility.

C. Build Interchange

The 'build interchange' option would provide full access to Interstate 94. The combined average daily traffic (ADT) for the network is projected to be 106,000. With this option the proposed beltway would carry 16,000 ADT. Therefore; the remaining projected total of 90,000 ADT on US 83 and Centennial Road would be 12,000 ADT over the combined capacity of the corridors. This is already taking into account that Centennial Road will be improved to a 5-lane facility. This option would provide the most traffic congestion relief to US 83 and Centennial Road.

Table 1 - Bismarck Traffic Projections

Alternatives	Capacity (US 83 & Centennial)	Capacity Beltway	Combined ADT	ADT of Beltway	ADT Remaining (US 83 & Centennial)
Do Nothing (2007)	57,000	0	40,000	0	40,000
Do Nothing (2030)	*78,000	0	106,000	500	105,500
Overpass (2030)	*78,000	12,000	106,000	3,000	103,000
Interchange (2030)	*78,000	12,000	106,000	16,000	90,000

*45,000 ADT for US 83 & 33,000 ADT for Centennial

II. Mandan Interchange Justification:

A. Do Nothing

The ‘do nothing’ option would not address the future need to reduce traffic congestion on Sunset Drive. The current capacity of Sunset Drive is 12,000 ADT. The projected ADT of 13,200 on Sunset Drive would be 1,200 ADT over capacity. The current capacity of 1806 is 12,000 ADT. The projected ADT of 5,000 on 1806 would be well below the capacity of 1806. Therefore; there are no capacity concerns on 1806. This option would not address the future capacity concerns of Sunset Drive.

B. Build Overpass Only

The ‘build overpass only’ option would provide a connection across Interstate 94, however it would only see a projected total ADT of 500. The combined average daily traffic (ADT) for the north to south network with this option is projected to be 18,200. The proposed beltway would carry 500 ADT. Therefore; the remaining projected total of 17,700 ADT would include 12,700 ADT on Sunset Drive and 5,000 ADT on 1806. Sunset Drive would be at or slightly over capacity and 1806 would be well under capacity with this option.

C. Build Interchange

The ‘build interchange’ option would provide full access to Interstate 94. The combined average daily traffic (ADT) for the north to south network with this option is projected to be 22,500. The proposed beltway would carry 5,300 ADT. Therefore; the remaining projected total of 17,200 ADT would include 12,200 ADT on Sunset Drive and 5,000 ADT on 1806. Sunset Drive would be at or slightly over capacity and 1806 would be well under capacity with this option.

The corridor capacities were analyzed with the Northern Bridge Corridor and without the Northern Bridge Corridor. The results indicate that building the Northern Bridge corridor would decrease average daily traffic on the combined north to south corridors by approximately 3,000 ADT.

Table 2 - Mandan Traffic Projection (Sunset Drive & 1806)

Alternatives	Capacity Sunset Dr	ADT Sunset Dr	Capacity 1806	ADT 1806	Total N-S Capacity	Total N-S ADT
With Northern Bridge:						
Do Nothing (2007)	12,000	10,000	12,000	4,650	24,000	14,650
Do Nothing (2030)	12,000	13,200	12,000	5,000	24,000	18,200
Overpass (2030)	12,000	12,700	12,000	5,000	24,000	17,700
Interchange (2030)	12,000	12,200	12,000	5,000	24,000	17,200
Without Northern Bridge:						
Do Nothing (2007)	12,000	10,000	12,000	4,650	24,000	14,650
Do Nothing (2030)	12,000	16,000	12,000	5,000	24,000	21,000
Overpass (2030)	12,000	15,000	12,000	5,000	24,000	20,000
Interchange (2030)	12,000	13,100	12,000	5,000	24,000	18,100

Table 3 - Mandan Traffic Projections - Including Beltway

Alternatives	Capacity Beltway	ADT Beltway	Capacity Sunset Dr & 1806	ADT Sunset Dr & 1806	Total N-S Capacity	Total N-S ADT
With Northern Bridge:						
Do Nothing (2007)	12,000	0	24,000	14,650	36,000	14,650
Do Nothing (2030)	12,000	0	24,000	18,200	36,000	18,200
Overpass (2030)	12,000	500	24,000	17,700	36,000	18,200
Interchange (2030)	12,000	5,300	24,000	17,200	36,000	22,500
Without Northern Bridge:						
Do Nothing (2007)	12,000	0	24,000	14,650	36,000	14,650
Do Nothing (2030)	12,000	0	24,000	21,000	36,000	21,000
Overpass (2030)	12,000	1,000	24,000	20,000	36,000	21,000
Interchange (2030)	12,000	2,900	24,000	18,100	36,000	21,000