

# Step 2 Evaluation Results

In Step 2, the performance of each alternative was evaluated against the previously identified criteria on a good/fair/poor basis for each criterion. The objective of Step 2 was to identify which alternatives best meet the criteria and should be advanced to the Step 3 evaluation and those with inadequate performance or substantial adverse impacts that should be dismissed from further consideration.

The following alternatives are recommended for advancement:

- Alternative 4-a: Overpass with Eastbound Buttonhook Exit and Slip Ramp Entrances
- Alternative 4-b: Overpass with Eastbound and Westbound Buttonhook Ramps
- Alternative 5-a: Double Roundabout Interchange
- Alternative 5-b: Double Roundabout Interchange with Right Turn Ramps
- Alternative 7: Tight Diamond Interchange
- Alternative 10: Single Roundabout Interchange

The following alternatives are recommended for dismissal based on inadequate performance in relation to the project primary needs of vehicle safety and mobility, the secondary need of walkability/bikeability and/or additional considerations:

- Alternative 1: Restricted Crossing U-Turn (RCUT) Intersection
- Alternative 2: Single Loop Intersection
- Alternative 3: Partial Displaced Left Turn Intersection
- Alternative 6: Traditional Diamond Interchange
- Alternative 8: Single Point Urban Interchange (SPUI)
- Alternative 9: Diverging Diamond Interchange (DDI)
- Alternative 11-a: Folded Diamond Interchange with Ramps on West Side
- Alternative 11-b: Folded Diamond Interchange with Ramps on East Side
- Alternative 12: Michigan Urban Diamond (MUD) Interchange

A summary of the ratings and reasons for dismissal is provided below, with a table on the last page.

## 1. Restricted Crossing U-Turn (RCUT) Intersection

Alternative 1 received a Fair rating on both primary needs criteria and a Poor rating on the walkability/bikeability secondary need criterion. Therefore, Alternative 1 is dismissed from further consideration based on these ratings.

## 2. Single Loop Intersection

Alternative 2 received a Poor rating on the crash potential criterion, a Fair rating on the network delay criterion, a Fair rating on the mainline performance criterion and a Fair rating on the walkability/bikeability need criteria. Therefore, Alternative 2 is dismissed from further consideration based on these ratings.

### **3. Partial Displaced Left Turn Intersection**

Alternative 3 received a Poor rating on the crash potential and walkability/bikeability criteria, and a Fair rating on the network delay criteria. Therefore, Alternative 3 is dismissed from further consideration based on these ratings.

### **6. Traditional Diamond Interchange**

Alternative 6 received a Poor rating on the ability to accommodate future local roadways; specifically, the ability to accommodate a south frontage road. With the traditional diamond, the required ramp spacing would preclude the introduction of additional local road intersections between TH 36 and the existing local neighborhood streets along CSAH 17. Therefore, Alternative 6 was dismissed from further consideration.

### **8. Single Point Urban Interchange (SPUI)**

While Alternative 8 received a Good rating on each of the primary needs criteria, it received a Poor rating on the walkability/bikeability criteria, as this alternative is uncomfortable for non-motorized users to safely navigate while crossing TH 36. This alternative also received a Fair rating on the future local roadways criterion based on the challenge of making this connection. Specifically, the MnDOT Road Design Manual notes that “attaching a frontage road... should be avoided as it will necessitate adding a fourth phase to the signal thus significantly increasing the overall delay” which hinders the goal of improving mobility. Alternative 8 is dismissed from further consideration based on these factors.

### **9. Diverging Diamond Interchange (DDI)**

While Alternative 9 received a Good rating on each of the primary needs criteria, it received a Poor rating on the walkability/bikeability, future local roadways, and a Fair rating on access management guidelines criteria. Additionally, this alternative is not ideal for the context due to low left-turning volumes on CSAH 17 and would be over-built even for future volumes. Therefore, Alternative 12 is dismissed from further consideration based on these factors.

### **11-a/11-b. Folded Diamond Interchange with Ramps on West Side (11-a) or East Side (11-b)**

Both variations of the folded diamond interchange type received a Poor rating on their ability to accommodate local roadways. With either of these options, the required ramp spacing would preclude the introduction of additional local road intersections between the trunk highway ramp intersections and the existing local neighborhood streets along CSAH 17. Therefore, both 11-a and 11-b were dismissed from further consideration.

### **12. Michigan Urban Diamond (MUD) Interchange**

Alternative 12 received a Poor rating on the maximum out of direction travel criterion. Due to the frontage road configuration/one-way frontage road, local traffic from the northwest quadrant of the intersection would experience greater than one mile of out of direction travel to access TH 36 eastbound. Therefore, Alternative 12 is dismissed from further consideration.

Alternative Category	At-Grade Alternatives				Grade-Separated Alternatives												
	No Build	1	2	3	4-a	4-b	5-a	5-b	6	7	8	9	10	11-a	11-b	12	
<b>Primary Transportation Needs</b>																	
Crash Potential	Poor	Fair	Poor	Poor	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	
Network Delay	Poor	Fair	Good	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	
Mainline Performance	Poor	Fair	Fair	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	
<b>Secondary Transportation Needs</b>																	
Walkability/ Bikeability	Poor	Poor	Fair	Poor	Fair	Good	Fair	Fair	Fair	Fair	Fair	Poor	Poor	Fair	Good	Good	Fair
<b>Additional Considerations &amp; SEE Impacts</b>																	
Future Local Roadways	Good	Good	Good	Good	Good	Good	Good	Good	Good	Poor	Fair	Fair	Poor	Fair	Poor	Poor	Good
Access Management Guidelines	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
2040 TPP Appendix F	N/A	N/A	N/A	N/A	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Maximum Out of Direction Travel	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Poor
Environmental Justice*	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
<b>Recommendation</b>	<u>Retain</u> as base- line for Step 3 evalua- tion	<u>Dismiss</u> from further consider- ation	<u>Dismiss</u> from further consider- ation	<u>Dismiss</u> from further consider- ation	<u>Retain</u> for evalua- tion in Step 3	<u>Dismiss</u> from further consider- ation	<u>Retain</u> for evalua- tion in Step 3	<u>Dismiss</u> from further consider- ation	<u>Dismiss</u> from further consider- ation	<u>Retain</u> for evalua- tion in Step 3	<u>Dismiss</u> from further consider- ation	<u>Dismiss</u> from further consider- ation	<u>Dismiss</u> from further consider- ation				

\*This impact was considered but is not a differentiator among alternatives as no areas of Environmental Justice concern were identified.