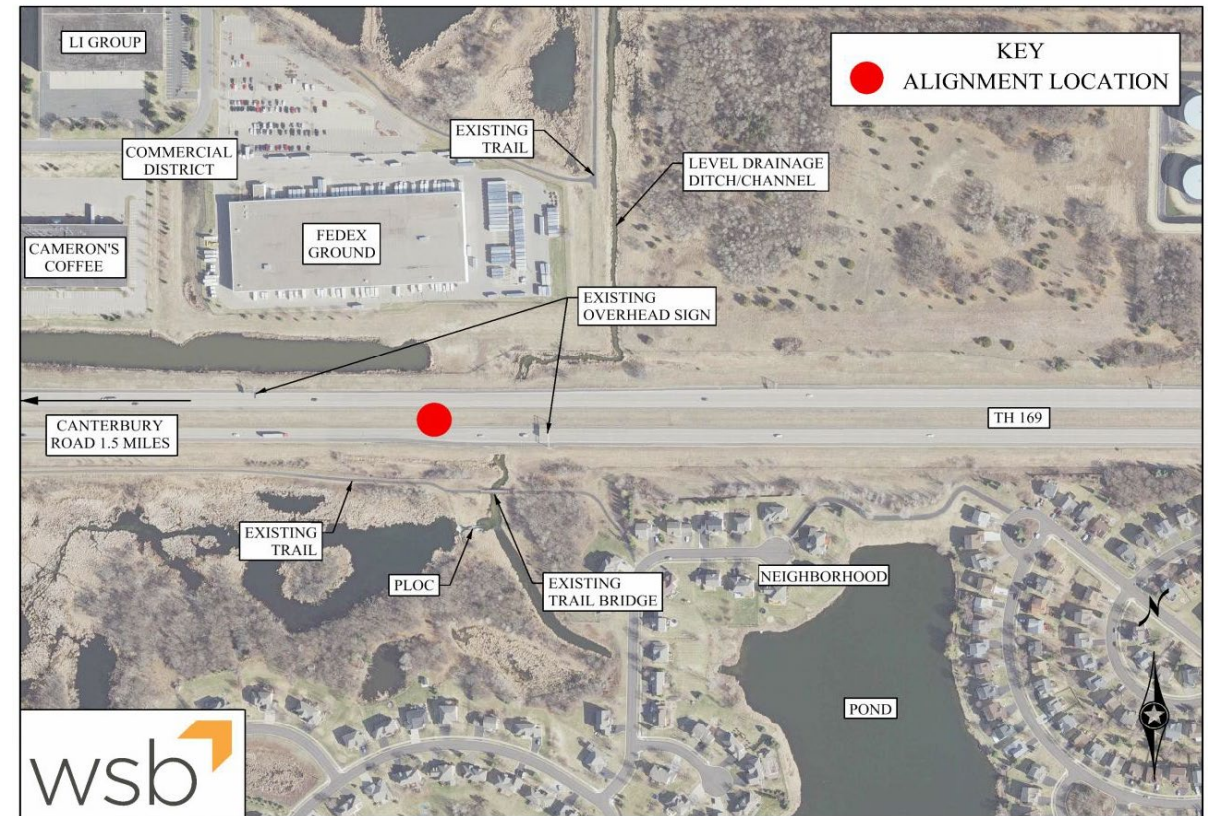


Highway 169 Pedestrian Bridge Concepts and Recommendations

August 17, 2021

History and Location

- \$2M received in legislative funding from Minnesota Budget and Management (MMB)
- Goal to connect Quarry Lake Park to trail system near Deans Lake



Options Considered – Option 1 Helix Ramp South Side

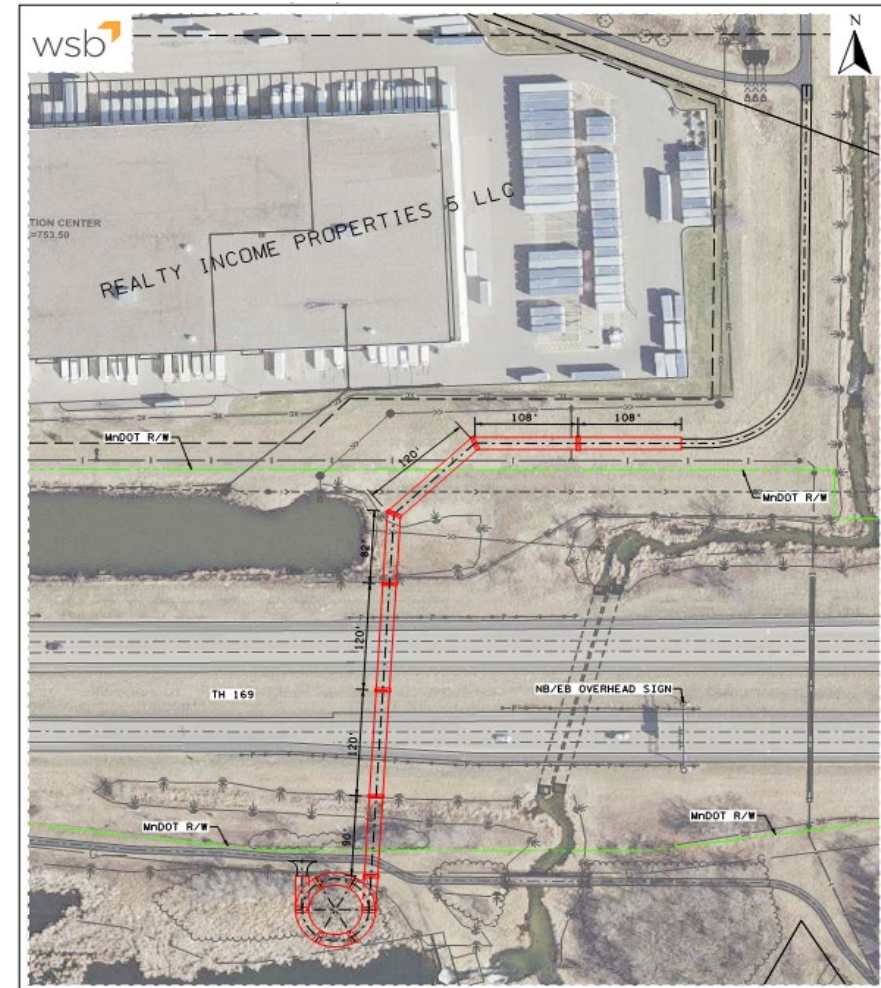
Pros:

- Has the smallest footprint.
- Minimal utility impacts.
- Minimal impacts to MnDOT R/W.
- Option doesn't impact the Prior Lake Outlet Channel.

Cons:

- Most expensive option.
- Helix can be more difficult for pedestrians to maneuver and to maintain.
- Location of helix will impact wetlands.

Cost Estimate: \$5,690,000



Options Considered – Option 2 South Trail Crossover

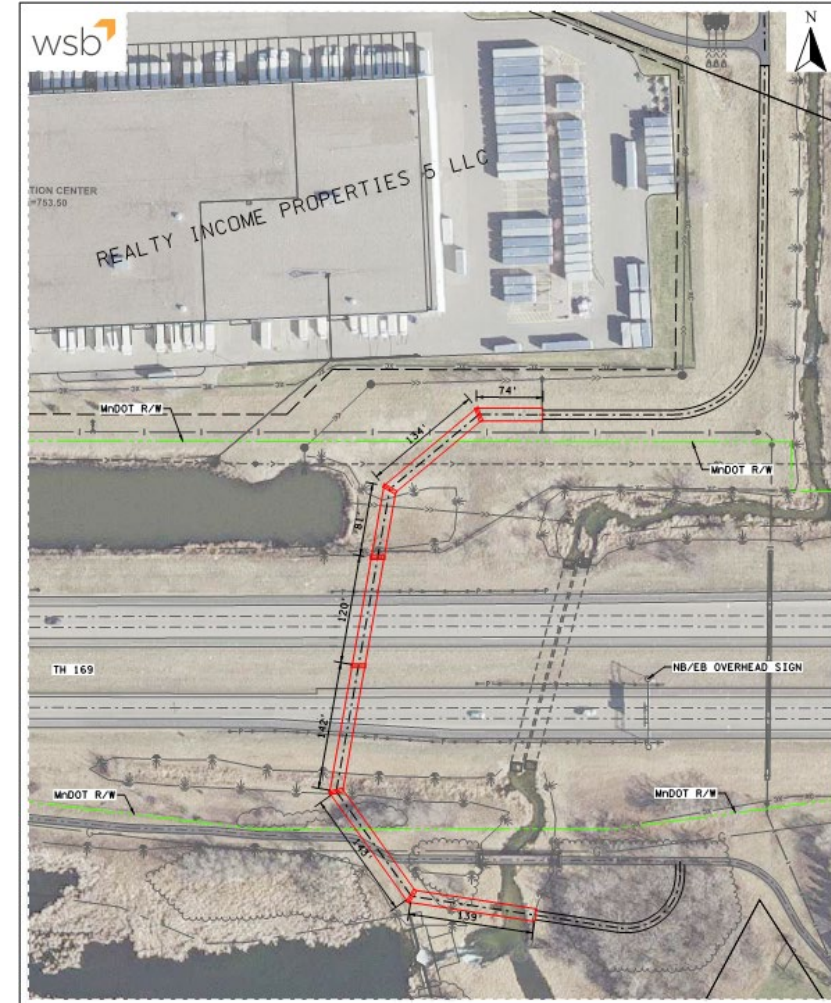
Pros:

- Alignment has gradual curves; this makes it easy to use and maintain.
- Lowest cost to construct.
- Ties into existing trail near neighborhood.
- Minimal impact to MnDOT R/W.
- Minimal utility impacts.

Cons:

- Trail and bridge will impact wetlands.
- Will require more R/W to construct.
- Will be impacts Prior Lake Outlet Channel.
- Longest bridge.

Cost Estimate: \$4,311,000



Options Considered – Option 3 South Trail Parallel Ramp with East Side Connection

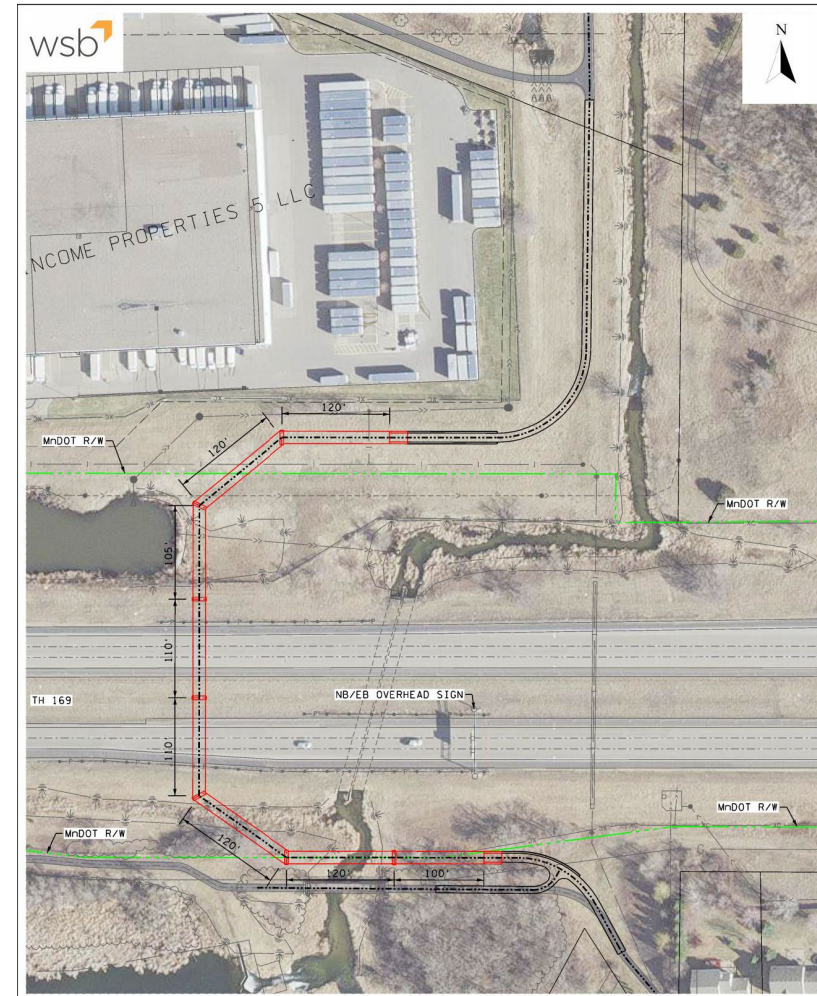
Pros:

- Lower cost to construct.
- Ties into existing trail near neighborhood.
- Easy for residents to use.

Cons:

- Requires work within MnDOT R/W to construct the trail.
- Potentially more utility impacts.
- Alignment curves are sharper to stay north of the existing trail.
- Impacts Prior Lake Outlet Channel (Final design will limit impacts).

Cost Estimate: \$4,323,000



Options Considered – Option 4 South Trail Parallel Ramp with West Side Connection

Pros:

- Minimal impacts to wetlands.
- Option doesn't impact the Prior Lake Outlet Channel.
- Requires less R/W.
- Easier to construct as the alignment stays out of wetlands.

Cons:

- Requires the most work within MnDOT R/W.
- Potentially more impacts to utilities.
- Requires the most amount of retaining walls.
- Alignment at the connection with the existing trail is sharp due to limited space.
- Goal of the project is to get pedestrians north and south and less east and west.

Cost Estimate: \$4,525,000



Preferred Option – Option 3

Alternatives Matrix

ITEM/FACTOR	ALTERNATIVES								
	ALTERNATIVE 1		ALTERNATIVE 2		ALTERNATIVE 3 *PREFERRED*		ALTERNATIVE 4		
	Helix Ramp South Side		South Trail Crossover Connection		South Trail Parallel Ramp with East Side Connection		South Trail Parallel Ramp with West Side Connection		
Construction Cost	-	Total project cost \$5,690,000.	++	Total project cost \$4,311,000.	++	Total project cost \$4,323,000.	+	Total project cost \$4,525,000.	Cost to construct the bridge and trail alternatives, includes 20% contingency.
Pedestrian Accessibility/ Distance Traveled	+	Length of trail equals 1,660 feet. Intersects the existing trail south of TH 169 with helix. This is slightly more difficult for pedestrians to maneuver.	++	Length of trail equals 1,620 feet. Intersects existing trail south of TH 169 near neighborhood, allowing for easy access to residents.	++	Length of trail equals 1,650 feet. Intersects existing trail south of TH 169 near neighborhood, allowing for easy access to residents. Direct north to south connection.	-	Length of trail equals 1,720 feet. Intersects existing trail south of TH 169 away from neighborhood, making it more difficult for residents of that neighborhood to use.	The easy for pedestrians to use the bridge/trail and access the trail south of TH 169.
Pedestrian Safety/Ease of Use	-	Helix may be more difficult for some pedestrians to utilize.	++	Easy connection for residents living south of TH 169. Provides gradual curves when connecting into the existing trail.	++	Easy connection for residents living south of TH 169. Provides gradual curves when connecting into the existing trail.	+	Connects further away for residents living south of TH 169. Provides good sight lines at intersection with existing trail.	The safety of each option for pedestrians to use the bridge/trail.
Resident Impacts	+	Will impact traffic on TH 169 and will impact pedestrians using the existing trail south of TH 169. Similar impacts for all options.	+	Will impact traffic on TH 169 and will impact pedestrians using the existing trail south of TH 169. Similar impacts for all options.	+	Will impact traffic on TH 169 and will impact pedestrians using the existing trail south of TH 169. Similar impacts for all options.	+	Will impact traffic on TH 169 and will impact pedestrians using the existing trail south of TH 169. Similar impacts for all options.	Amount of impacts to the local residents and businesses.
Impacts to wetlands	-	The Helix is located south of the existing trail south of TH 169 and will be located within a wetland. Will include wetland impacts.	+	Will have wetland impacts to construct the bridge south of TH 169, slightly more impacts due to trail being located south of existing trail.	++	Will have wetland impacts to construct the bridge south of TH 169, less impacts due to the trail being located north of the existing trail.	++	Will have minimal impacts to wetlands.	Amount of Wetland impacts based on the preliminary wetland delineation. All alternatives will have similar impacts north of TH 169.
Right of Way Impacts	+	One parcel impacted north of TH 169.	+	One parcel impacted north of TH 169.	+	One parcel impacted north of TH 169.	+	One parcel impacted north of TH 169.	Amount of Right of Way needed to construct each alternative. All alternatives will have similar R/W impacts north of TH 169 and City owns property south of TH 169.
Impacts to MnDOT Facilities	++	Only the bridge piers will need to be constructed within MnDOT R/W.	++	Only the bridge piers will need to be constructed within MnDOT R/W.	+	Bridge piers will need to be constructed within MnDOT R/W. A portion of the bridge that parallels the existing trail falls within MnDOT R/W and will require a permit to construct.	+	Bridge piers will need to be constructed within MnDOT R/W. This alternative will also require a permit to construct the trail within MnDOT R/W.	Impacts required within the MnDOT Right of way. All alternatives will have similar impacts north of TH 169.
Utility Impacts	++	Will have similar utility impacts. Initial investigation shows minimal impacts.	++	Will have similar utility impacts. Initial investigation shows minimal impacts.	++	Will have similar utility impacts. Initial investigation shows minimal impacts.	-	This alternative may have additional impacts due to more utilities being located within MnDOT R/W. There is the potential to impact more utilities.	Extent of utility impacts needed to construct each alternative.
Maintenance	-	Most difficult alternative to maintain since there are steel girders in the helix and tight curves	+	Typical maintenance efforts needed. A passenger truck turning template will be used to ensure the bridge works for snow removal equipment.	+	Typical maintenance efforts needed. A passenger truck turning template will be used to ensure the bridge works for snow removal equipment.	+	Typical maintenance efforts needed. A passenger truck turning template will be used to ensure the bridge works for snow removal equipment.	Amount of maintenance effort needed for each alternative.
Tree Impacts	-	Increased impacts due to the location of the helix.	-	Increased impacts due to trail being located south of existing trail.	+	Minimal tree impacts due to trail being located north of existing trail.	++	Minimal to no tree impacts.	Amount of trees that will need to be removed due to trail/bridge location, no impacts north of TH 169.
Impacts to Prior Lake Outlet Channel	++	This alternative will not impact the channel.	-	This alternative will have some impacts due to the bridge crossing over the channel south of TH 169, slightly more due to the trail crossing south of the existing trail.	+	This alternative may have some impacts due to the bridge crossing over the channel south of TH 169, slightly less due to the trail crossing north of the existing trail.	++	This alternative will not impact the channel.	Impacts to the channel based on each alternative. All options will avoid impacting the channel north of TH 169.

Bridge Type and Aesthetics

- Prestressed Girder Bridge
- Match aesthetics will match the bridge at Marschall Road
- Matches proposed design on west side of Marschall Road Bridge by Scott County





Lighting on Bridge

- Lighting to be placed for security purposes
- Placed at middle and ends of bridge, 110' spacing



Schedule and Next Steps

- Produce MnDOT Level 1 Layout for Approval
- Geotechnical Investigation
- Develop Preliminary Bridge Plans
- Develop 60/90/Final Plans

- Authorize Bid – Fall/Winter, 2021
- Bid Project – January/February, 2022

- Begin Construction – Spring, 2022