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**DEEPHAVEN
BIKEWAY
FEASIBILITY
REPORT**

January 20, 2020 | DRAFT

CONTENTS

CHAPTER 1 | Introduction & Existing Conditions Analysis

Introduction	4
Previous Planning Efforts	4
Goals of the Study	5
Bikeway Options Analyzed in Study	5
Existing Conditions	6
Bikeway Facility Selection	7
Bicycle Rider Types	7
Bicycle Facility Types	9

CHAPTER 2 | Bikeway Options

Option 1: Minnetonka Blvd. Enhanced Shoulders	12
Option 2: Minnetonka Blvd. Trail	14
City Limits to Maplewood Rd. (Segment B)	14
Northome Blvd. to Heathcote Rd. (Segment C)	16
Heathcote Rd. to Vine Hill Rd. (Segment D)	17
Option 3: Bicycle Boulevard	19
Bicycle Blvd. - CR 101 to Thorpe park (Segment E)	19
Bicycle Blvd. - Thorpe park to LRT Trail (Segment F)	20
County Road 101 Crossing (Segment G)	21
Highland Ave. Connection (Segment H)	23
Carsonwood Rd. Connection (Segment I)	24
Heathcote Rd. Connection (Segment J)	25
Option 4: Neighborhood Connections	27
Bicycle Blvd. - Robinson Bay Beach to Thorpe Park (Segment K)	28
Walden Ln. Connection (Segment L)	29
Minnetonka Blvd. Trail Connection (Segment M)	30
Carsonwood Rd. Connection (Segment I)	31
Heathcote Rd. Connection (Segment J)	32
Summary of Bikeway Options	34

CHAPTER 3 | Public Engagement

Public Engagement	37
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CHAPTER 4 | Implementation and Funding

Implementation	39
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CHAPTER 1

INTRODUCTION & EXISTING CONDITIONS ANALYSIS





Minnetonka Blvd. Source: Google Maps

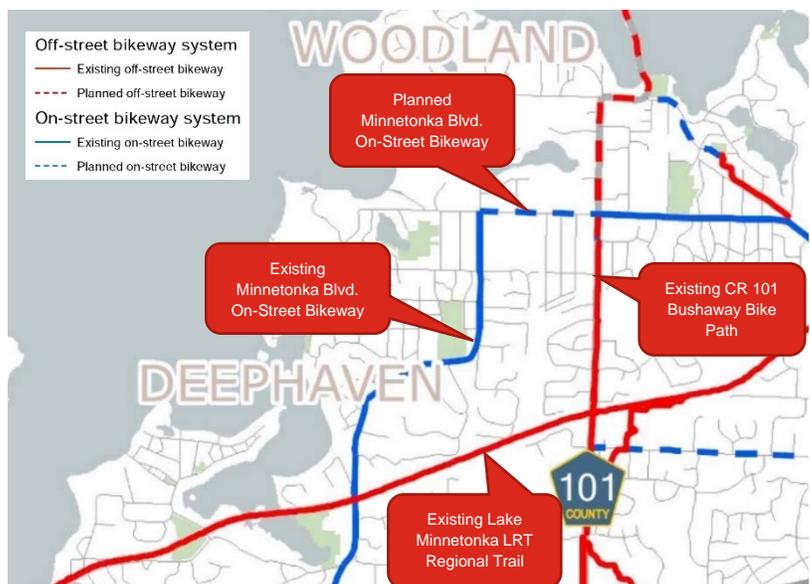
INTRODUCTION

In early 2019, the City of Deephaven initiated a study to explore the feasibility of bikeway improvements in the northern half of the city that would provide connections to the City of Minnetonka, the Lake Minnetonka LRT Regional Trail, St. Therese School, and Deephaven Elementary School. A total of four bikeway options were explored – two of the options along Minnetonka Boulevard, and two options using other local streets as alternate routes to make these connections. This report summarizes previous planning efforts, bike facility selection guidance, existing conditions within the study area, the four bikeway improvement options explored, planning-level cost estimates, and potential funding sources for implementation.

PREVIOUS PLANNING EFFORTS

The [Hennepin County 2040 Bicycle Transportation Plan](#) (2015) includes a planned county-wide bikeway system using a combination of trails, county roads, and local roads. Minnetonka Blvd. is designated as an on-street bikeway. The 1.5-mile portion from Northome Blvd. to Vine Hill Rd. is identified as an existing bikeway, while the half-mile segment from County Road 101 to Maplewood Rd. is identified as a planned bikeway.

Based on public surveys collected for the 2016 Deephaven Parks Master Plan, Minnetonka Blvd. was identified as a big issue of concern for residents. The route had the potential to be a strong north-south bikeway connection, but safety



Hennepin County Planned Bikeway System, April 2015. Source: Hennepin County

concerns limited its use. The Parks Master Plan called for future on-street bikeways to be clearly marked, with painted buffers and flexible delineator posts used to maximize user comfort levels.

In 2017, the City of Deephaven was awarded grant funding to develop a feasibility report that would evaluate the impact of constructing a bikeway along Minnetonka Blvd. The award was given by Hennepin County with the goal of expanding and enhancing the county's bikeway system.

GOALS OF THE STUDY

The City of Deephaven identified the following project goals prior to the start of the study:

- Address the existing east-west gap in the bikeway network in partnership with the City of Minnetonka
- Provide a bikeway connection to the Lake Minnetonka LRT Regional Trail
- Provide a safe bikeway for users of all ages that connects to the St. Therese Catholic School
- Provide a safe bikeway for users of all ages that connects to Deephaven Elementary School
- Study the existing and planned routes from the [2040 Hennepin County Bicycle Transportation Plan](#)
- Investigate alternate routes for bikeway connections within the study area
- Make recommendations for improving the City's existing bikeway system

BIKEWAY OPTIONS ANALYZED IN STUDY

Toole Design worked with the City of Deephaven to develop and analyze four bikeway improvement options within the study area:

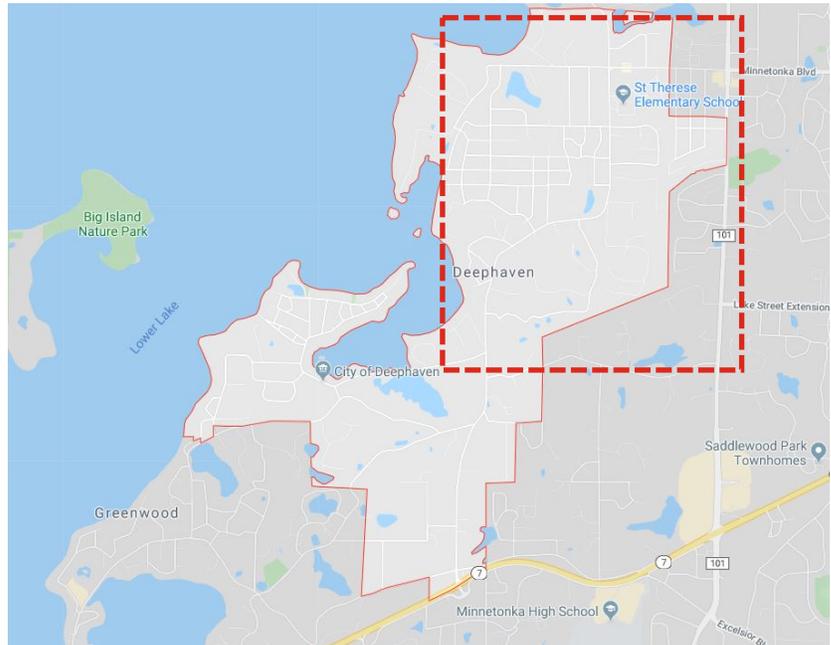
1. Minnetonka Blvd. Enhanced Shoulders
2. Minnetonka Blvd. Trail (off-street shared use trail)
3. Bicycle Boulevard (local street route)
4. Neighborhood Connections (connections to improve biking throughout the study area)

The bikeway improvement options are documented in detail in Chapter 2. These options are not mutually exclusive and can be developed together to expand the City's walking and bicycling network.

EXISTING CONDITIONS

The study area covers Minnetonka Blvd. from the northeastern city limits near St. Therese St. to the intersection of Minnetonka Blvd. and Vine Hill Rd, as well as the surrounding neighborhoods. Land use within the area is primarily single-family residential with the addition of some commercial, civic, and recreational uses. The C1 Commercial District near Minnetonka Blvd. and Northome Blvd. includes a mix of offices, neighborhood services, and a café. Grace Lutheran church, St. Therese Catholic church and school, and Deephaven Woods senior living center are also located in the study area. Nearby recreation includes Robinson's Bay Beach and the City's main park, Thorpe Park. The southern limits of the study area include Deephaven Elementary School and the Lake Minnetonka LRT Regional Trail, which connects to City Hall and the Excelsior Park and Ride.

Minnetonka Blvd. is the City's primary collector roadway. It is a 35 MPH two-lane rural road with 12-foot travel lanes and paved shoulders that vary from 2'-6'. Portions of the roadway are hilly and wooded. There are instances of private use encroachments in the 66-foot wide public right-of-way. The Metro Transit express commuter bus #671 has multiple stops along Minnetonka Blvd. on its way to and from Downtown Minneapolis. In 2019, Minnetonka Blvd. was resurfaced between the northeastern border of the City to Vine Hill Road.



The study area covers approximately the northern half of the city. Source: Google



Example of private encroachment in the public ROW.

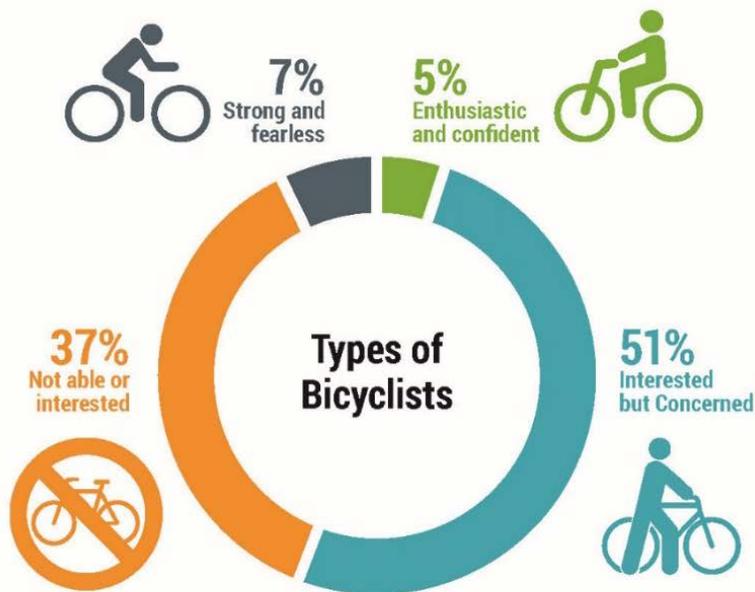
BIKEWAY FACILITY SELECTION

Deephaven, and its scenic roadways, is a popular destination for experienced recreational bicyclists. The challenge for the City moving forward will be to encourage those who are less comfortable with the current bikeway system to ride, especially for short trips.

BICYCLE RIDER TYPES

To develop a bicycle network that serves a broad range of users and achieves the City's goals, it is important to understand who currently rides, who does not, and why. The Oregon Transportation Research and Education Consortium identified four general attitudes and perceptions about bicycling. The four types of bicyclists are referred to as:

- 'Strong and fearless'
- 'Enthusiastic and confident'
- 'Interested but concerned'
- 'Not able or interested'



Bicyclists generally fall into one of four categories based on their level of comfort:

			
Strong and Fearless bicyclists will ride in any road conditions or environment.	Enthusiastic and Confident bicyclists will ride comfortably on most types of streets, but may be uncomfortable in certain situations or road conditions.	Interested but Concerned bicyclists require physical bicycle infrastructure improvements before they will want to ride.	People who identify as No Way, No How will not ride a bicycle, no matter the circumstances.

Source: Dill, Jennifer and McNeil, Nathan. "Revisiting the Four Types of Cyclists: Findings from a National Survey." *Transportation Research Record: Journal of the Transportation Research Board*, vol 2587, no 1, January 2016.

Strong and fearless – about 7 percent of people

This group is generally undeterred by any roadway conditions or design. They prefer separation from pedestrians more than they do from motor vehicles. They tend to wear specialized biking gear and ride high-performance bikes. Their preferred bikeways are shoulders or bike lanes. They are likely completely comfortable riding on Minnetonka Blvd. in its current form.



Strong and fearless riders prefer direct routes.

Enthusiastic and confident – 5 percent of people

This group is comfortable sharing the road with vehicular traffic but prefer dedicated bikeways and will go a little out of their way for less-stressful riding conditions. They might wear clothing that works well for biking but also is wearable as everyday clothing. Their preferred bikeways are buffered bike lanes, bike boulevards, and off-street trails. They might ride on Minnetonka Blvd. for short distances or during off-peak hours but would prefer wider bike lanes or off-street trails.



Interested but concerned riders prefer separation from motor vehicle traffic.

Interested but concerned – 51 percent of people

This is the largest group of the population. Comfort is priority for them and their primary motivation for biking is to have a good time. One or two bad experiences can keep them off their bikes for an extended time. Their preferred bikeways are quiet neighborhood streets, buffered bike lanes, and off-street trails. They would likely stick to the side streets and avoid riding on Minnetonka Blvd unless there was an off-street trail.

Not able or interested – 37 percent of people

This group includes those that have no current interest in bicycling or are unable to bike. Some of this group could transition into the Interested but concerned group if bikeways were more common or personal circumstances change.

To meet the goal of providing a safe bikeway for users of all ages, the City of Deephaven will need to establish a low-stress bicycle network, which is one that is designed to be comfortable for people who are "interested but concerned." The following section outlines some bikeway types and how they can be used to create a low-stress bicycle network.

BICYCLE FACILITY TYPES

This section describes various bicycle facility types, their benefits, and potential design considerations for each. These facilities are incorporated in the Chapter 2 bikeway options.

Bicycle Boulevards

A bicycle boulevard is typically suited for a local low-speed, low-volume street. Bicycle boulevards prioritize biking by turning stop signs to prioritize bike movements, giving bicycles the right of way, and using traffic calming (i.e., curb extensions or traffic circles), vehicle diverters, and enhanced signage. They are intended to improve safety and comfort and to provide an alternative to higher speed roadways that may be more intimidating for those with less experience or confidence biking.

Design Considerations:

- No separation from motor vehicles
- Low vehicle traffic volumes
- 20-30 MPH (posted speed)



Bicycle boulevard example image.



Shoulder example image.

Shoulders

A paved shoulder may be used along low- to moderate-volume roads in suburban and rural areas with long distances between intersections and access points. A paved shoulder improves connections where bike lanes would be inappropriate, and a shared use path would be prohibitively expensive. However, shoulders may be signed or marked as bicycle lanes when greater than four feet. Shoulders' drawbacks, including frequent interruption by turn lanes or bypass lanes and ambiguous legal standing, make them less appropriate for the general public.

Design Considerations:

- Low separation from motor vehicles
- Low to moderate motor vehicle traffic volumes
- 35-55 MPH (posted speed)
- Minimum width is 4-feet (width should be determined based on motor vehicle speed)

Standard Bike Lanes and Buffered Bike Lanes

Standard bicycle lanes provide a dedicated space for bicycling alongside motor vehicle traffic. Bicycle lanes can be a low-cost option when adequate right-of-way is available, and often can be incorporated into street paving, sealcoating, and restriping projects. Buffered bike lanes enhance standard bike lanes with additional striped or buffered space between those biking and motor vehicles for added comfort.

Design Considerations:

- Low to moderate separation from motor vehicles
- Moderate motor vehicle traffic volumes
- Minimum width is 5-feet (6-feet desired)



Standard bike lane example image.



Buffered bike lane example image

Shared Use Path

Shared use paths provide a shared space for bicycling, walking and other non-motorized uses. They offer a high-quality bicycling environment preferred by a wide range of people. Sometimes shared use paths are outside of the street right-of-way, and often are sited along abandoned or active rail corridors, bodies of water, and parks.

Design Considerations:

- High separation from motor vehicles
- Minimum width is 8-feet with a 2-foot clear zone on each side (two-way)
- Preferred width is 10-feet or greater with a 2-foot clear zone on each side (two-way)



Shared use path example image.



CHAPTER 2

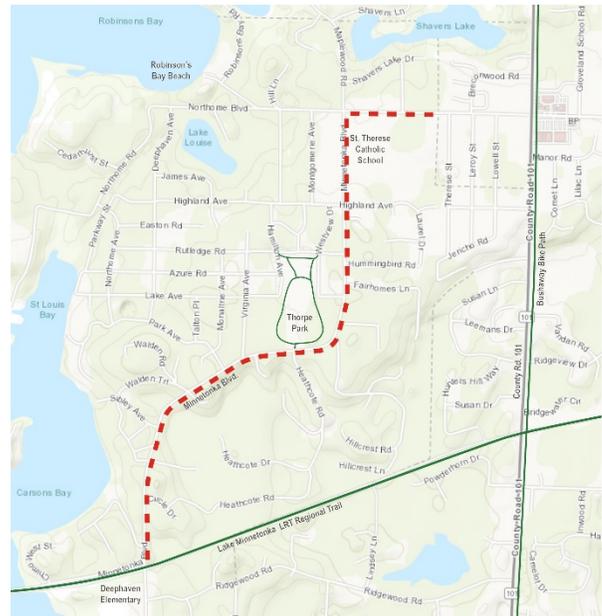
BIKEWAY OPTIONS



This chapter outlines the benefits, challenges, and preliminary cost estimates for the four bikeway options analyzed in the study area. The following preliminary concepts are for planning purposes only. Field verification, site condition assessments, engineering analysis and design are necessary prior to implementation. Estimated costs are based on MnDOT 2018 average bid prices. All estimates are in 2018 dollars and may require inflation for future year construction (see Appendix A for detailed cost estimates).

OPTION 1: MINNETONKA BLVD. ENHANCED SHOULDERS

In the fall of 2019, the City of Deephaven resurfaced a section of Minnetonka Boulevard from the northeastern border of the City to Vine Hill Road. The resurfacing project included two 12-foot vehicular travel lanes and varied width shoulders (typically 4 feet) on each side of the road along most of the corridor. Option 1 is a proposed on-street bike route along Minnetonka Blvd that would enhance the existing paved shoulders by widening the shoulders to 4 feet and narrowing the vehicular travel lanes to 11 feet. The widened shoulders are proposed to run along Minnetonka Blvd. from the northeastern Deephaven city limits near Therese Street to Vine Hill Road near Deephaven Elementary School. This option would also include adding bike route signs to the side of the roadway. This option is proposed to coincide with the next time the City restripes the roadway, which would minimize implementation costs. According to the [Federal Highway Administration Bikeway Selection Guide](#), paved shoulders 4-foot wide or greater on rural roads (similar to Minnetonka Boulevard) are operationally the same as bike lanes.



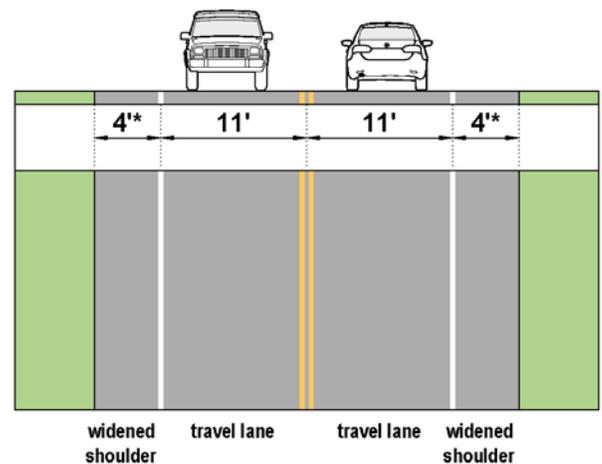
On-street bike route along Minnetonka Blvd.

Benefits

- Restriping the roadway to widen the shoulders and narrow the vehicular travel lanes would require minimal additional costs with a future restriping project.
- The enhanced shoulders will address Deephaven's portion of the east-west bikeway gap.
- Bicycle riders from adjacent neighborhoods will be able to use the widened shoulders to access the St. Therese Catholic School.
-

Challenges

- The existing roadway width varies in areas. In certain locations, the shoulder width may be narrower.



Proposed typical Minnetonka Blvd. cross section
*Shoulder width may vary in some areas

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Cost Estimate

The total preliminary cost estimate for Option 1 is \$30,000, which includes removing existing pavement markings, striping a new wider shoulder, and adding bicycle route signs.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

Option 1 (Segment A) - Enhanced Shoulders (City limit to Vine Hill Road)					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Pavement Marking Removal	LF	18120	\$0.76	\$13,771	To remove both edge lines
Sign Panel Type C	SF	21	\$36.52	\$767	1 sign every 500 feet
4" Solid Line Epoxy (WR)	LF	18120	\$0.32	\$5,798	Edge Lines (both sides)
Construction Cost Subtotal				\$20,337	
Contingency (25%)				\$5,084	
Engineering Estimate (N/A)				\$0	
Total Cost				\$25,420	
Rounded Total Cost				\$30,000	

OPTION 2: MINNETONKA BLVD. TRAIL

The Minnetonka Blvd. Trail (Option 2) is a proposed off-street shared use trail along the north/west side of Minnetonka Blvd. The trail would follow the same route as Option 1 but is beyond the scope of a resurfacing project and would be best implemented as a separate project. The 10-foot wide paved trail would be shared by bicyclists and pedestrians. Option 2 is split into 3 segments (B-D).

CITY LIMITS TO MAPLEWOOD RD. (SEGMENT B)

Segment 1 is approximately 1,300 linear feet (LF) of trail on the east-west portion of Minnetonka Blvd. from the eastern city limits near Therese St. to Maplewood Rd.

Benefits

- This portion of Minnetonka Blvd. has higher motor vehicle volumes – an off-street trail would provide a more comfortable experience by adding greater separation between motor vehicles and bicycle riders.
- It would address Deephaven’s portion of the east-west gap in the existing bikeway network. Coordination with the City of Minnetonka would be needed to fill the remaining portion of the gap to the east.

Challenges

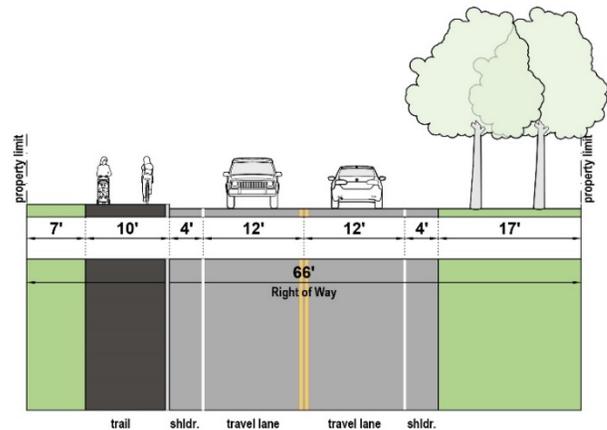
- Driveway crossing for the existing commercial uses on Minnetonka Blvd. could create conflict points with the proposed trail
- Portions of commercial parking lots along the corridor are encroaching into the ROW.
- Three parking spaces would need to be removed near the intersection of Minnetonka Blvd. and Maplewood Rd. to accommodate a 10-foot wide trail.

Cost Estimate

The total preliminary cost estimate for Segment B is \$200,000, which includes removing portions of the existing parking lot and sidewalk and constructing a 10-foot trail, curb and gutter, and four ADA ramps.



Proposed alignment of an off-street shared use path along Minnetonka Blvd.



Proposed typical Segment 1 cross section.



Existing Bushway Bike Path (CR 101). Source: Google Maps

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This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

Segment B - Minnetonka Blvd. Trail (Minnetonka City Limits to Maplewood Rd.)					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Saw Cut Bituminous Pavement (Full Depth)	LF	1200	\$1.45	\$1,740	
Remove Bituminous Pavement	SF	6000	\$0.60	\$3,600	
Remove Curb and Gutter	LF	50	\$5.31	\$266	
Remove Sidewalk	SF	480	\$0.75	\$360	
Install Curb and Gutter Design B624	LF	1200	\$22.47	\$26,964	
Common Excavation	CY	1348	\$10.82	\$14,587	
Aggregate Base (CV) Class 5	CY	578	\$25.37	\$14,658	
Type SP 12.5 Wearing Course Mixture (3, B)	TON	204	\$48.88	\$9,973	113 lbs./sy*in, assume 2.5" thick for trail
Geotextile Fabric Type V	SY	2022	\$1.84	\$3,721	
ADA Ramps (per quadrant)	EA	4	\$7,000.00	\$28,000	
Easement	SF	149	\$8.00	\$1,192	1-foot wide to install trail
Construction Cost Subtotal				\$105,060	
Landscaping/Turf Establishment (5%)				\$5,253	
Signing/Markings (5%)				\$5,253	
Drainage/Utilities (15%)				\$15,759	
Contingency (25%)				\$26,265	
Engineering Estimate (25%)				\$39,397	
Total Cost				\$196,988	
Rounded Total Cost				\$200,000	

NORTHOME BLVD. TO HEATHCOTE RD. (SEGMENT C)

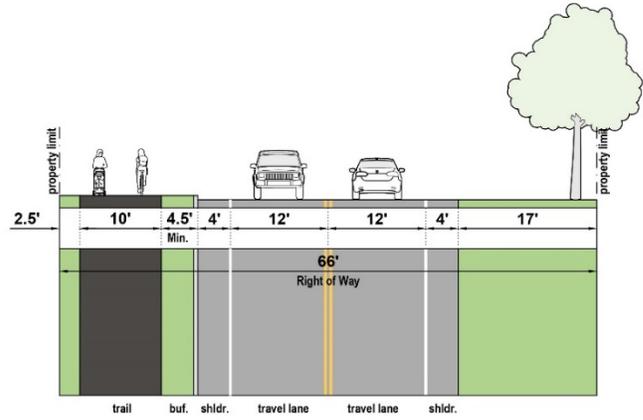
Segment C is approximately 3,650 LF of trail on the north-south portion of Minnetonka Blvd. from Northome Blvd. to Heathcote Rd.

Benefits

- Separating the bikeway from motor vehicle traffic would allow younger riders that might not be comfortable riding in the roadway to use this route, which is important considering this segment's proximity to St. Therese Catholic School and Thorpe Park.

Challenges

- The proposed trail and St. Therese Catholic School are on opposite sides of the roadway – crossing treatments would be required to assist students that use the trail to get to school.
- The right-of-way (ROW) is not wide enough to accommodate the trail and stormwater – a curb and gutter would need to be installed on the trail-side of the road to manage runoff.
- Existing sidewalk on private property requires an easement.



Proposed Segment 2 typical cross section.

Cost Estimate

The total preliminary cost estimate for Segment C is \$500,000, which includes installing curb and gutter on the trail side of the road, eight ADA ramps, a 10-foot trail, and acquiring a 2,225 square foot (SF) easement for the portion where the existing sidewalk is on private property.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

Segment C - Minnetonka Blvd. Trail (Northome Blvd. to Heathcote Rd.)					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Saw Cut Bituminous Pavement (Full Depth)	LF	800	\$1.45	\$1,160	
Remove Bituminous Pavement	SF	4000	\$0.60	\$2,400	
Remove Sidewalk	SF	1680	\$0.75	\$1,260	
Install Curb and Gutter Design B624	LF	3080	\$22.47	\$69,208	
Common Excavation	CY	3785	\$10.82	\$40,956	
Aggregate Base (CV) Class 5	CY	1622	\$25.37	\$41,156	
Type SP 12.5 Wearing Course Mixture (3, B)	TON	573	\$48.88	\$28,001	113 lbs/sy*in, assume 2.5" thick for trail
Geotextile Fabric Type V	SY	5678	\$1.84	\$10,447	
ADA Ramps (per quadrant)	EA	8	\$7,000	\$56,000	

Segment C - Minnetonka Blvd. Trail (Northome Blvd. to Heathcote Rd.)					
Easement	SF	2250	\$8.00	\$18,000	5-foot wide, sidewalk on private property
Construction Cost Subtotal				\$268,587	
Landscaping/Turf Establishment (5%)				\$13,429	
Signing/Markings (5%)				\$13,429	
Drainage/Utilities (15%)				\$40,288	
Contingency (25%)				\$67,147	
Engineering Estimate (25%)				\$100,720	
Total Cost				\$503,601	
Rounded Total Cost				\$500,000	

HEATHCOTE RD. TO VINE HILL RD. (SEGMENT D)

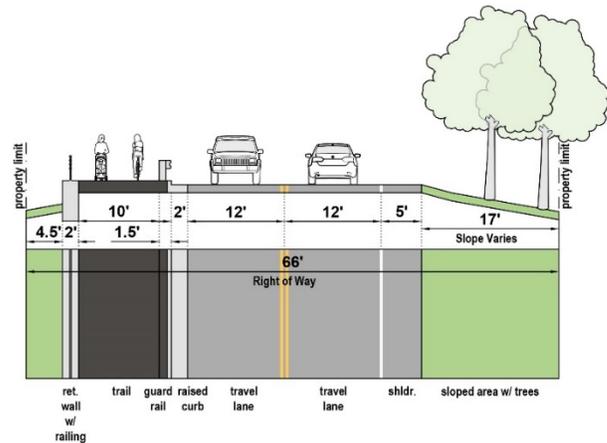
Segment D is approximately 4,110 LF of trail along Minnetonka Blvd. from Heathcote Rd. to Vine Hill Rd.

Benefits

- A trail on the north/west side of Minnetonka Blvd. could easily connect into the existing paths within Thorpe Park.

Challenges

- This portion of Minnetonka Blvd. has steep topography that would require a constrained trail section including a curb and gutter, guardrail, and prefabricated block retaining wall with railing.
- Existing vegetation on the proposed trail-side of the roadway would be impacted. This may require removing over 200 trees to construct all trail segments.
- The proposed trail would not provide direct connections to the Lake Minnetonka LRT Regional Trail or Deephaven Elementary School. These additional segments would need to be completed as additional projects.



Proposed Segment 3 typical cross section.

Cost Estimate

The total preliminary cost estimate for Segment D is \$2,790,000, which includes the trail, curb and gutter, guardrail, prefabricated block wall, railing installation, and tree removal.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

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Segment D - Minnetonka Blvd. Trail (Heathcote Rd. to Vine Hill Rd.)					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Saw Cut Bituminous Pavement (Full Depth)	LF	300	\$1.45	\$435	
Remove Bituminous Pavement	SF	1500	\$0.60	\$900	
Remove Sidewalk	SF	80	\$0.75	\$60	
Install Curb and Gutter Design B624	LF	3820	\$22.47	\$85,835	
Common Excavation	CY	4262	\$10.82	\$46,117	
Aggregate Base (CV) Class 5	CY	1827	\$25.37	\$46,343	
Type SP 12.5 Wearing Course Mixture (3, B)	TON	645	\$48.88	\$31,530	113 lbs/sy*in, assume 2.5" thick for trail
Geotextile Fabric Type V	SY	6393	\$1.84	\$11,764	
ADA Ramps (per quadrant)	EA	12	\$7,000.00	\$84,000	
Install Guardrail	LF	3090	\$14.96	\$46,226	
Prefabricated Modular Block Wall	SF	17040	\$65.00	\$1,107,600	
Install Pipe Railing	LF	1080	\$80.02	\$86,422	
Easement	SF	640	\$8.00	\$5,120	8-foot wide, Vine Hill Rd. corner
Construction Cost Subtotal				\$1,552,352	
Landscaping/Turf Establishment (2%)				\$31,047	
Signing/Markings (2%)				\$31,047	
Drainage/Utilities (15%)				\$232,853	
Contingency (25%)				\$388,088	
Engineering Estimate (25%)				\$558,847	
Total Cost				\$2,794,233	
Rounded Total Cost				\$2,790,000	

OPTION 3: BICYCLE BOULEVARD

Option 3: Bicycle Boulevard is a proposed on-street bike route that follows Highland Ave., Westview Dr., and Heathcote Rd. The route would be designed as a bicycle boulevard where people biking and driving share the lane.

A proposed crossing of County Road 101 at Highland Ave. would connect the bikeway to the existing County Road 101 Bushway Bike Path.

The on-street bicycle boulevard would require a few specific off-street trail connections to link it together. The Highland Ave. gap is currently connected by a paved footpath, which would be replaced by a 10-foot wide paved trail. An existing eight-foot wide path in Thorpe Park would be used to connect Westview Dr. to Heathcote Rd. Finally, a 15-foot easement on private property would be required to make a trail connection from Heathcote Rd. to the Lake Minnetonka LRT Regional Trail.



BICYCLE BLVD. - CR 101 TO THORPE PARK (SEGMENT E)

A proposed bicycle boulevard along Highland Ave. and Westview Dr. from County Road 101 to Thorpe Park.

Benefits

- The cost to implement a bicycle boulevard would be relatively low, since Highland Ave. and Westview Dr. are currently low-volume, low-speed streets that would not require additional traffic calming measures.

Challenges

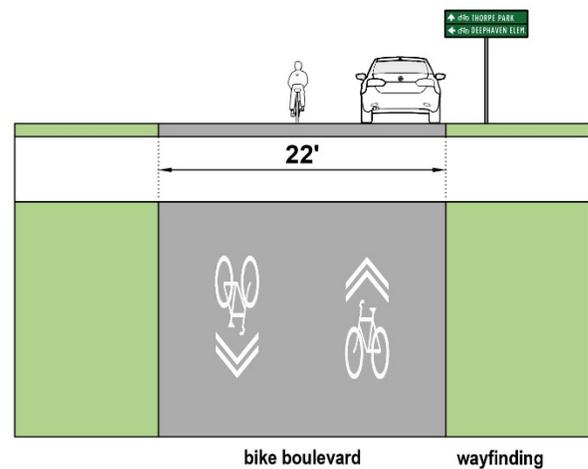
- The bike boulevard route would not provide a direct connection to the St. Therese Catholic School. Those wishing to walk or bike to the school would be required to use the existing Minnetonka Blvd. shoulder.

Cost Estimate

The total preliminary cost estimate for the Highland Ave. and Westview Dr. bicycle boulevard is \$10,000, which includes wayfinding signage and pavement markings.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

On-street bike route along local streets.



Proposed bicycle boulevard typical cross section.



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Segment E - Bicycle Blvd. (CR 101 to Thorpe Park)					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Sign Panel Type C	SF	21	\$41.54	\$872	1 sign every 500 feet
Pavement Message Epoxy (Bike Symbols)	SF	324	\$14.16	\$4,595	Large bike symbols every 250 feet
Construction Cost Subtotal				\$5,467	
Contingency (25%)				\$1,367	
Engineering Estimate (25%)				\$1,708	
Total Cost				\$8,542	
Rounded Total Cost				\$10,000	

BICYCLE BLVD. - THORPE PARK TO LRT TRAIL (SEGMENT F)

A proposed bicycle boulevard along Heathcote Rd.

Benefits

- Heathcote Rd. is currently a low-volume, low-speed street that would not require additional traffic calming measures.

Challenges

- The narrow roadway, with many driveways and divergent routes, may make this route difficult to navigate. Clear wayfinding signage will be important.

Cost Estimate

The total preliminary cost estimate for the Heathcote Rd. bicycle boulevard is \$10,000, which includes wayfinding signage and pavement markings.



Bicycle boulevard example image.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

Segment F - Bicycle Blvd. (Thorpe Park to Lake Minnetonka LRT Regional Trail)					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Sign Panel Type C	SF	15	\$41.54	\$623	1 sign every 500 feet Large bike symbols every 250 feet
Pavement Message Epoxy (Bike Symbols)	SF	211	\$14.16	\$2,991	
Construction Cost Subtotal				\$3,614	
Contingency (25%)				\$1,367	
Engineering Estimate (25%)				\$1,245	
Total Cost				\$6,226	
Rounded Total Cost				\$10,000	

COUNTY ROAD 101 CROSSING (SEGMENT G)

A median refuge island with a rectangular rapid flashing beacon (RRFB) is proposed at Highland Avenue, which would allow those walking and biking to cross County Road 101 and access the Bushaway Bike Path.

Benefits

- The crossing would connect the Deephaven bikeway to the Bushaway Bike Path that runs along the eastern side of County Road 101.
- Refuge islands make crossings easier by providing an area for people to wait, rest, and look for oncoming motorists. People crossing are only required to negotiate one direction of motor vehicle traffic at a time.



Median refuge island example image.

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- Refuge islands provide a traffic calming effect.

Challenges

- Installing a pedestrian refuge island and an RRFB on a county road would require approval from Hennepin County.
- Access to the Lake Minnetonka LRT Regional Trail from Minnetonka Blvd is difficult for some people due to the elevation change
- This crossing would need to be coordinated with the City of Minnetonka. Hennepin County may ask Deephaven, Minnetonka, or both cities to participate in the construction cost or ongoing maintenance of this crossing.



RRFB example image.

Cost Estimate

The total preliminary cost estimate for the County Road 101 Crossing is \$180,000, which includes removal of pavement, installation of the median island, two ADA ramps, 30 LF of trail, and an RRFB.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

Segment G - County Road 101 Crossing					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Saw Cut Bituminous Pavement (Full Depth)	LF	48	\$1.45	\$70	
Remove Bituminous Pavement	SF	240	\$0.60	\$144	
Remove Curb and Gutter	LF	40	\$5.31	\$212	
Remove Sidewalk	SF	120	\$0.75	\$90	
Common Excavation	CY	31	\$10.82	\$337	
Aggregate Base (CV) Class 5	CY	13	\$25.37	\$338	
Type SP 12.5 Wearing Course Mixture (3, B)	TON	5	\$48.88	\$230	113 lbs/sy*in, assume 2.5" thick for trail
Geotextile Fabric Type V	SY	47	\$1.84	\$86	
Install Curb and Gutter Design B624	LF	48	\$22.47	\$1,079	
4" Concrete Walk	SF	192	\$5.01	\$962	
ADA Ramps (per quadrant)	EA	2	\$7,000	\$14,000	
Pedestrian Crosswalk Flasher System	EA	1	\$67,466	\$67,467	
Construction Cost Subtotal				\$85,014	
Landscaping/Turf Establishment (10%)				\$8,501	
Signing/Markings (10%)				\$8,501	
Drainage/Utilities (20%)				\$17,003	
Contingency (25%)				\$21,254	
Engineering Estimate (25%)				\$35,068	
Total Cost				\$175,341	
Rounded Total Cost				\$180,000	

HIGHLAND AVE. CONNECTION (SEGMENT H)

Improvements to the existing Highland Avenue footpath between Laurel Drive and Therese Street can improve legibility and formalize an important bicycle and pedestrian connection. This alternative includes minor improvements to the path to make it fully ADA compliant by adding curb ramps and improving the surface and adding signage to improve the legibility of the connection.

Benefits

- Improved surface for biking and walking
- A more visible, recognized connection.

Challenges

- Minimal – the connection already exists.

Cost Estimate

The total preliminary cost estimate for the Highland Ave. Connection is \$10,000, which includes asphalt resurfacing, adding ADA compliant curb ramps, and signage.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.



Existing Highland Ave. connection (path has been paved since photo was taken). Source: Google Maps

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Segment H - Highland Ave. Connection					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Sign Panel Type C	SF	12	\$41.54	\$498	4 signs at 3 SF each
Type SP 12.5 Wearing Course Mixture (3, B)	TON	24	\$48.88	\$1,151	113 lbs/sy*in, assume 2.5" thick for trail
Curb Ramps	Each	2	\$3,000	\$6,000	
Construction Cost Subtotal				\$7,649	
Contingency (25%)				\$1,912	
Engineering Estimate (25%)				\$2,390	
Total Cost				\$11,952	
Rounded Total Cost				\$10,000	

CARSONWOOD RD. CONNECTION (SEGMENT I)

A proposed natural path on neighborhood association owned land will connect the cul-de-sacs on Carsonwood Rd. to Heathcote Dr. Feedback from the neighborhood association and concerns over impact and maintenance of a 10-foot trail led to the conclusion that this connection would remain a natural path. Wayfinding signage would be installed at either end of the path to notify users.

Benefits

- The connection would allow Carsonwood Rd. residents to access Heathcote Dr. and the future connection to the Lake Minnetonka LRT Regional Trail without using Minnetonka Blvd.

Challenges

- The path would be unimproved and not ADA compliant.

Cost Estimate

The preliminary cost estimate for the Carsonwood Rd. connection is \$1,000, which includes wayfinding signage. Cost estimate assumes Carsonwood Rd. connection is an unimproved natural path.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

Segment I - Carsonwood Rd. Connection					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Sign Panel Type C	SF	12	\$41.54	\$498	4 signs at 3 SF each

Segment I - Carsonwood Rd. Connection	
Construction Cost Subtotal	\$498
Contingency (100%)	\$498
Engineering Estimate (25%)	\$249
Total Cost	\$1,246
Rounded Total Cost	\$1,000

HEATHCOTE RD. CONNECTION (SEGMENT J)

A proposed 15-foot wide easement on private property required to make a 130 LF trail connection from Heathcote Rd. to the Lake Minnetonka LRT Regional Trail.

Benefits

- Installing this short segment of trail would meet the City’s goal of providing a bikeway connection to the Lake Minnetonka Regional Trail.
- There is an existing footpath in this location, however, the proposed 10-foot wide trail would make the connection ADA compliant.



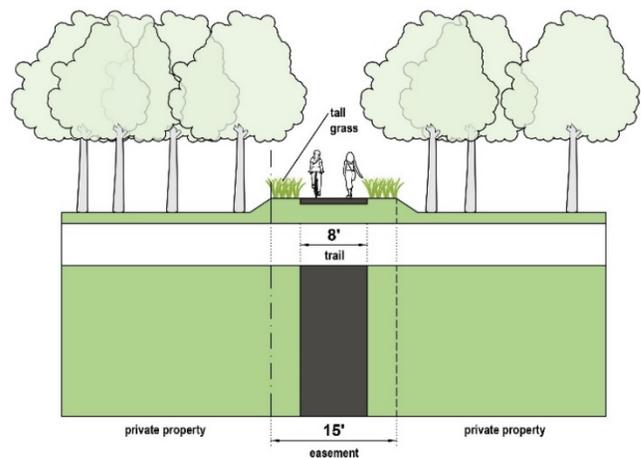
Existing Heathcote Rd. footpath. Source: Google Maps

Challenges

- The land between Heathcote Rd. and the Lake Minnetonka LRT Regional Trail is private property.
- There is a natural drainageway that flows through the area that would need to be accommodated in the trail design.

Cost Estimate

The total preliminary cost estimate for the Heathcote Rd. connection is \$30,000, which includes acquiring a 15-foot wide easement and constructing the 10-foot trail and trail embankment with 24-inch culvert for drainage.



Proposed Heathcote Rd. connection typical cross section

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

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Segment J - Heathcote Rd. Connection					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Common Excavation	CY	135	\$10.82	\$1,459	
Common Embankment	CY	107	\$4.48	\$478	
24" GS Pipe Apron	EA	2	\$332.08	\$664	
24" CS Pipe Culvert	LF	24	\$53.02	\$1,272	
Aggregate Base (CV) Class 5	CY	58	\$25.37	\$1,466	
Type SP 12.5 Wearing Course Mixture (3, B)	TON	20	\$48.88	\$997	113 lbs/sy*in, assume 2.5" thick for trail
Geotextile Fabric Type V	SY	202	\$1.84	\$372	
Easement	SF	1125	\$8.00	\$9,000	15-foot wide
Construction Cost Subtotal				\$15,708	
Landscaping/Turf Establishment (10%)				\$1,571	
Signing/Markings (10%)				\$1,571	
Contingency (25%)				\$3,927	
Engineering Estimate (25%)				\$5,694	
Total Cost				\$28,471	
Rounded Total Cost				\$30,000	

OPTION 4: NEIGHBORHOOD CONNECTIONS

Option 4: Neighborhood Connections consists of multiple proposed strategic connections to improve the overall walking and bicycling environment within the study area. These connections can be completed as standalone projects or with other improvements. Together they help form a complete network within the city that can be used by bicyclists of all ages and abilities.

Many of Deephaven's roads were designed to limit cut-through vehicular traffic. The positive side is that these dead-end roads provide low-stress bicycle routes. However, the negative side is that dead-ends reduce street network connectivity and directness, and often force bicyclists onto high traffic volume collector roadways to get to their destinations. Making these strategic connections would allow bicyclist to travel more direct routes while avoiding higher-stress roadways.

The five connections included in Option 4 do not have to be completed together. While a complete network of bikeways is important for achieving the maximum benefit, they can be implemented separately over time, as budget allows. Segments I and J are the same proposed connections featured in Option 3.



Strategic Connections to improve walking and biking

BICYCLE BLVD. - ROBINSON BAY BEACH TO THORPE PARK (SEGMENT K)

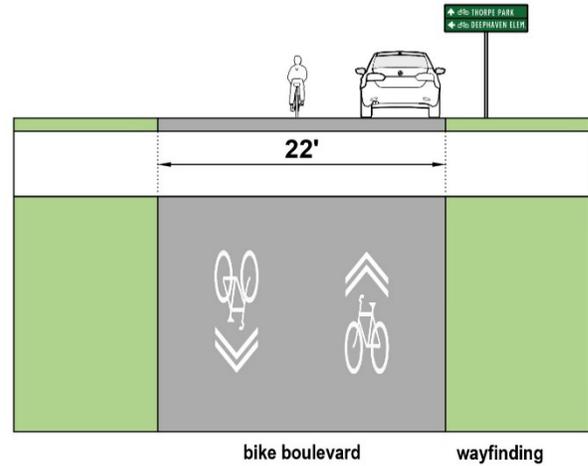
A proposed bicycle boulevard along Robinson Bay Rd., Hamilton Ave., a portion of Northome Blvd., and a portion of Highland Ave.

Benefits

- The bicycle boulevard would connect two recreation areas: Robinson Bay Beach and Thorpe Park.
- Additional signage along this route would help alert motorists of the likely presence of bicycle riders.

Challenges

- The multiple jogs in the route may be difficult to follow without clear wayfinding signage.
- This bicycle boulevard does not meet the City's goal of providing a bikeway connection to the St. Therese Catholic School.



Proposed typical bicycle boulevard cross section.

Cost Estimate

The total preliminary cost estimate for the bicycle boulevard is \$10,000, which includes wayfinding signage and pavement markings.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

Segment K - Bicycle Boulevard (Robinson Bay to Thorpe Park)					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Sign Panel Type C	SF	21	\$36.52	\$767	1 sign every 500 feet Large bike symbols every 250 feet
Pavement Message Epoxy (Bike Symbols)	SF	326	\$14.16	\$4,622	
Construction Cost Subtotal				\$5,389	
Contingency (25%)				\$1,347	
Engineering Estimate (25%)				\$1,684	
Total Cost				\$8,420	
Rounded Total Cost				\$10,000	

WALDEN LN. CONNECTION (SEGMENT L)

A proposed 30-foot wide easement centered on the property line between two single-family residences and a 190 LF trail connection from the Walden Ln. cul-de-sac to Park Ave.

Benefits

- Connecting a trail to Park Ave. would allow residents of Walden Tr., Walden Rd., and Walden Ln. to travel north without the need to cross Minnetonka Blvd.

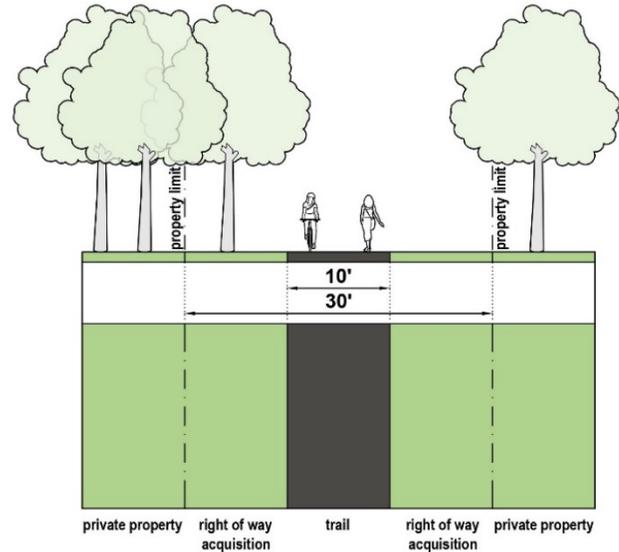
Challenges

- 2,225 SF of easements would need to be acquired from private property owners for the proposed trail connection.

Cost Estimate

The total preliminary cost estimate for the Walden Tr. connection is \$50,000, which includes acquiring an easement and the 10-foot wide trail construction.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.



Proposed Walden Ln. connection typical cross section.

Segment L - Walden Tr. Connection					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Common Excavation	CY	197	\$10.82	\$2,132	
Aggregate Base (CV) Class 5	CY	84	\$25.37	\$2,142	
Type SP 12.5 Wearing Course Mixture (3, B)	TON	30	\$48.88	\$1,458	113 lbs/sy*in, assume 2.5" thick for trail
Geotextile Fabric Type V	SY	296	\$1.84	\$544	
Easement	SF	2250	\$8.00	\$18,000	30-foot wide
Construction Cost Subtotal				\$24,276	
Landscaping/Turf Establishment (10%)				\$2,428	
Signing/Markings (10%)				\$2,428	
Drainage/Utilities (20%)				\$4,855	
Contingency (25%)				\$6,069	
Engineering Estimate (25%)				\$10,014	

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Segment L - Walden Tr. Connection	
Total Cost	\$50,069
Rounded Total Cost	\$50,000

MINNETONKA BLVD. TRAIL CONNECTION (SEGMENT M)

This connection would be a 470 LF off-street trail along a segment of Minnetonka Blvd., linking Sibley Ave. and Carsonwood Ave. It would share the same design as the off-street path of Option 3 but only for this segment.

Benefits

- The trail connection would allow those walking or biking this route to avoid using the Minnetonka Blvd. shoulder to access Thorpe Park or Robinson’s Bay Beach.

Challenges

- This portion of Minnetonka Blvd. has steep topography and the trail would require a 4-foot high retaining wall.

Cost Estimate

The total preliminary estimate for the off-street trail connection is \$460,000, which includes the site clearing, trail, guardrail, and modular block wall with pipe railing.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

Segment M - Minnetonka Blvd. Trail Connection (Sibley Ave. to Carsonwood Rd.)					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Saw Cut Bituminous Pavement (Full Depth)	LF	40	\$1.45	\$58	
Remove Bituminous Pavement	SF	200	\$0.60	\$120	
Common Excavation	CY	487	\$10.82	\$5,274	
Aggregate Base (CV) Class 5	CY	209	\$25.37	\$5,300	
Type SP 12.5 Wearing Course Mixture (3, B)	TON	74	\$48.88	\$3,606	113 lbs/sy*in, assume 2.5" thick for trail
Geotextile Fabric Type V	SY	731	\$1.84	\$1,345	
ADA Ramps (per quadrant)	EA	4	\$7,000	\$28,000	
Install Guardrail	LF	390	\$14.96	\$5,834	
Prefabricated Modular Block Wall	SF	2220	\$65.00	\$144,300	
Install Pipe Railing	LF	370	\$80.02	\$29,607	
Construction Cost Subtotal				\$223,444	
Landscaping/Turf Establishment (10%)				\$22,344	

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Segment M - Minnetonka Blvd. Trail Connection (Sibley Ave. to Carsonwood Rd.)	
Signing/Markings (10%)	\$22,344
Drainage/Utilities (20%)	\$44,689
Contingency (25%)	\$55,861
Engineering Estimate (25%)	\$92,171
Total Cost	\$460,853
Rounded Total Cost	\$460,000

CARSONWOOD RD. CONNECTION (SEGMENT I)

A proposed natural path on neighborhood association owned land that would connect two cul-de-sacs, Carsonwood Rd. and Heathcote Dr. Wayfinding signage would be installed at either end of the path to notify users.

Benefits

- The connection would allow Carsonwood Rd. residents to access Heathcote Dr. and the future connection to the Lake Minnetonka LRT Regional Trail without using Minnetonka Blvd. shoulders.

Challenges

- The unimproved path would not be ADA compliant.

Cost Estimate

The preliminary cost estimate for the Carsonwood Rd. connection is \$1,000, which includes wayfinding signage. Cost estimate assumes Carsonwood Rd. connection is an unimproved natural path.

This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

Segment I - Carsonwood Rd. Connection					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Sign Panel Type C	SF	12	\$41.54	\$498	4 signs at 3 SF each
Construction Cost Subtotal				\$498	
Contingency (100%)				\$498	
Engineering Estimate (25%)				\$249	
Total Cost				\$1,246	
Rounded Total Cost				\$1,000	

HEATHCOTE RD. CONNECTION (SEGMENT J)

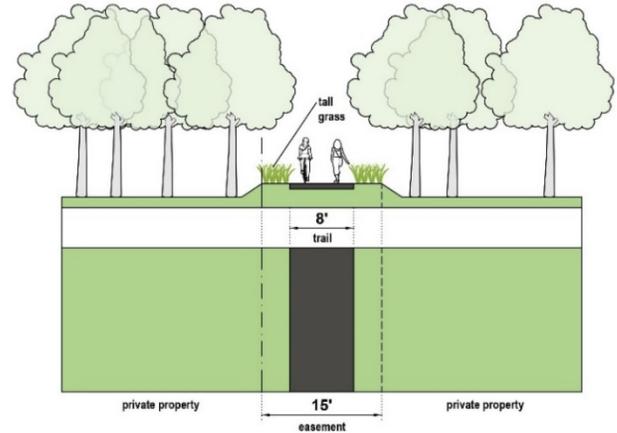
A 130 LF proposed trail connection from Heathcote Rd. to the Lake Minnetonka LRT Regional Trail, including a 15-foot wide easement on private property.

Benefits

- Installing this short segment of trail would meet the City’s goal of providing a bikeway connection to the Lake Minnetonka Regional Trail.
- There is an existing footpath at this connection, however, the proposed 10-foot wide trail would make the connection ADA compliant.

Challenges

- The land between Heathcote Rd. and the Lake Minnetonka LRT Regional Trail is private property.
- There is a natural drainageway that flows through this area that would need to be accommodated in the trail design.



Proposed typical Heathcote Rd. connection cross section

Cost Estimate

The total preliminary cost estimate for the Heathcote Rd. connection is \$30,000, which includes acquiring a 15-foot wide easement and constructing the 10-foot trail and trail embankment with 24-inch culvert for drainage.

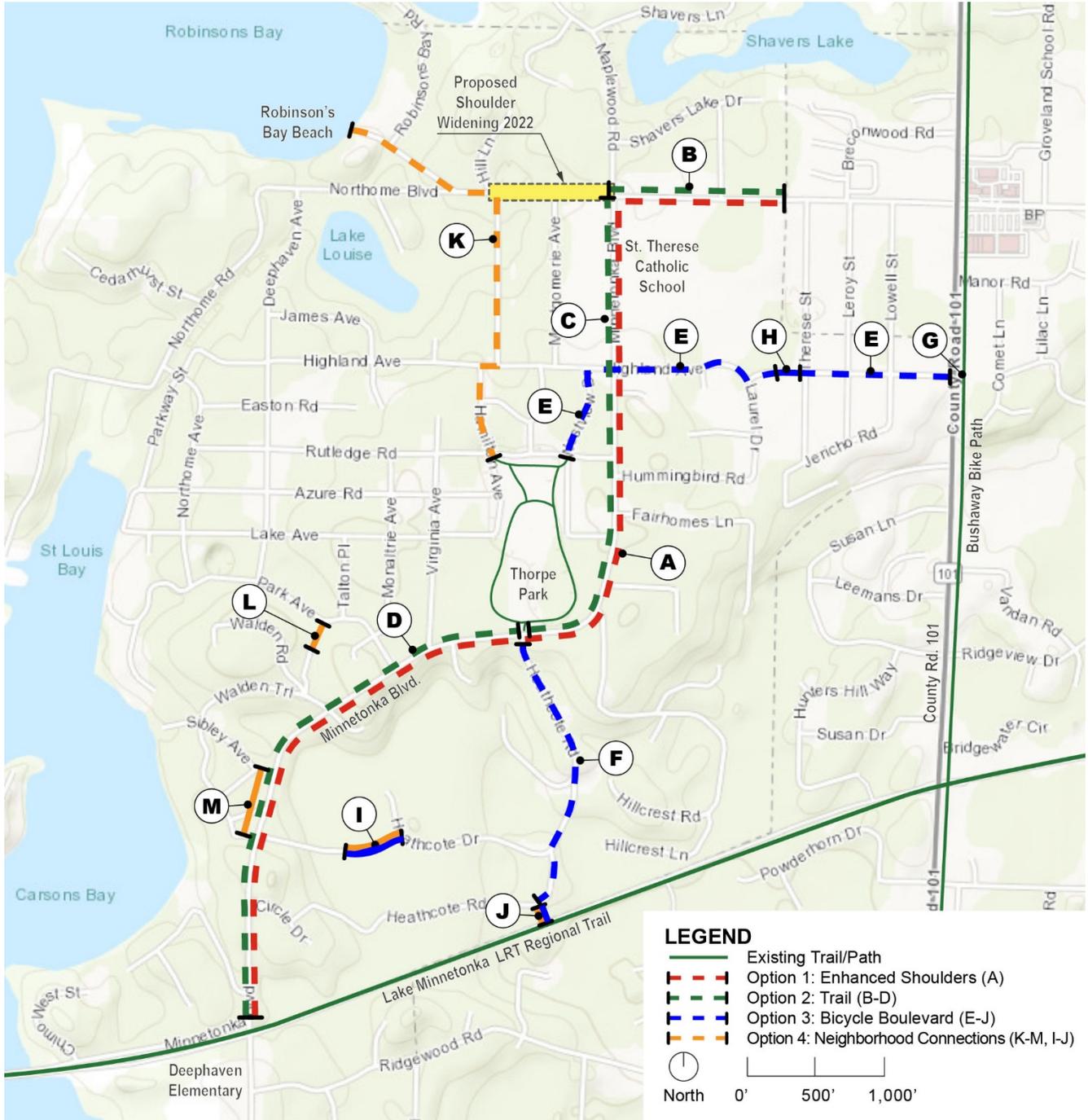
This planning level cost estimate does not itemize every cost. Various items, such as mobilization and traffic control, are covered with the contingency. Unit prices per MnDOT 2018 average bid prices, all estimates are in 2018 dollars and may require inflation for future year construction.

Segment J - Heathcote Rd. Connection					
Item	Unit	Quantity	Unit Cost	Total Cost	Assumptions
Common Excavation	CY	135	\$10.82	\$1,459	
Common Embankment	CY	107	\$4.48	\$478	
24" GS Pipe Apron	EA	2	\$332.08	\$664	
24" CS Pipe Culvert	LF	24	\$53.02	\$1,272	
Aggregate Base (CV) Class 5	CY	58	\$25.37	\$1,466	
Type SP 12.5 Wearing Course Mixture (3, B)	TON	20	\$48.88	\$997	113 lbs/sy*in, assume 2.5" thick for trail
Geotextile Fabric Type V	SY	202	\$1.84	\$372	
Easement	SF	1125	\$8.00	\$9,000	15-foot wide
Construction Cost Subtotal				\$15,708	
Landscaping/Turf Establishment (10%)				\$1,571	
Signing/Markings (10%)				\$1,571	
Contingency (25%)				\$3,927	
Engineering Estimate (25%)				\$5,694	

Segment J - Heathcote Rd. Connection		
Total Cost	\$28,471	
Rounded Total Cost	\$30,000	

SUMMARY OF BIKEWAY OPTIONS

The *Deephaven Bikeway Feasibility Report* includes an analysis of four different bikeway options that would provide bicycling connections in the northern half of the city. The figure below displays all four options, and the bikeway segments within each option. **Table 1** on the following page includes the facility type and a planning-level cost estimate for each of the segments within each option. Segments I and J are included in both options 3 and 4.



Map displaying all four of the bikeway options.

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Table 1: Planning-level cost estimates for each of the four bikeway options, including estimated costs for each individual segment.

Segment ID	Segment Name	Facility Type	Cost Estimate
Option 1: Minnetonka Blvd. Enhanced Shoulders			
A	Northeastern City limits to Vine Hill Rd.	On-street widened shoulders	\$30,000
Option 1 Total Cost			\$30,000
Option 2: Minnetonka Blvd. Trail			
B	City limits to Maplewood Rd.	Trail	\$200,000
C	Northome Blvd. to Thorpe Park	Trail	\$500,000
D	Thorpe Park to Vine Hill Rd.	Trail	\$2,790,000
Option 2 Total Cost			\$3,490,000
Option 3: Bicycle Boulevard			
E	CR 101 to Thorpe Park	Bicycle boulevard	\$10,000
F	Thorpe Park to LRT Regional Trail	Bicycle boulevard	\$10,000
G	County Road 101 Crossing	Pedestrian refuge island and RRFB	\$180,000
H	Highland Ave. Connection	Trail	\$10,000
I	*Carsonwood Rd. Connection	Unimproved natural path	\$1,000
J	*Heathcote Rd. Connection	Trail	\$30,000
Option 3 Total Cost			\$241,000
Option 4: Neighborhood Connections			
K	Robinson Bay Beach to Thorpe Park	Bicycle boulevard	\$10,000
L	Walden Ln. Connection	Trail	\$50,000
M	Minnetonka Blvd. Trail Connection	Trail	\$460,000
I	*Carsonwood Rd. Connection	Unimproved natural path	\$1,000
J	*Heathcote Rd. Connection	Trail	\$30,000
Option 4 Total Cost			\$551,000

*Carsonwood Rd. and Heathcote Rd. connections are included in both Option 3: Bicycle Boulevard and Option 4: Neighborhood Connections.



CHAPTER 3

PUBLIC ENGAGEMENT



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PUBLIC ENGAGEMENT

**Summary of the public engagement feedback will be added to the final version of the report once public engagement is completed.*



CHAPTER 4

IMPLEMENTATION & FUNDING



IMPLEMENTATION

There are several types of funding sources available to implement bikeways in Deephaven, including sources from the federal, state, regional, county, and local levels. The following table describes various grant programs and other funding sources that can be utilized for developing bikeways in the City of Deephaven.

Bikeway Funding Source	Description
City of Deephaven Capital Improvement Program	The City of Deephaven can set aside dedicated funding in their capital improvement program (CIP) to fund bikeway and trail development. A CIP is a short-range plan which identifies capital projects and equipment purchases, provides a planning schedule and identifies options for financing the plan.
Hennepin County Community Works Program	The Hennepin County Community Works program is focused on strategic public works investments to improve quality of life, stimulate economic development, strengthen communities through connections, maintain and improve natural systems, and enhance the tax base. The community works program targets investment in specific areas based on opportunities identified through comprehensive planning and stakeholder engagement. The community works program has funded multi-use trails, bike lanes, access improvements, and bicycling support facilities.
Hennepin County Capital Improvement Prog	Hennepin County provides funding for bikeway and sidewalk projects through its pedestrian and bicycle capital improvement program (CIP). The purpose of the bikeway solicitation is to provide funding assistance to develop and implement effective bikeway projects that extend the Hennepin County bikeway system, support local plans, and support the implementation of the Hennepin County Transportation Systems Plan, including the Hennepin County Complete Streets Policy and the Hennepin County 2040 Bicycle Transportation Plan. Bicycle projects must be designated on the most current Hennepin County 2040 Bicycle Transportation System Plan Map, and eligible sidewalk projects must be located along Hennepin County roadways. Funds for the construction of bicycle and sidewalk infrastructure will be awarded at a maximum of \$100,000 per project, and all project contracts must fully encumber funds within 3 years of the date of the funding award.
Hennepin County Pavement Preservation Program (Preservation Plus)	The pavement preservation plus program is a new county program that provides funding for additional small construction improvements to the bicycle and pedestrian environment such as curb extensions, pedestrian refuge medians, signage, and curb ramps.
Minnesota Legacy Funds	In 2008 the <u>Minnesota Clean Water, Land and Legacy Amendment</u> was passed to support funding for a number of activities through a sales tax, including <u>parks and trails funding</u> . The Parks and Trails Fund receives 14.25 percent of the sales tax revenue resulting from the Clean Water, Land and Legacy amendment. Those funds may only be spent to support parks and trails of regional or statewide significance.
Minnesota Department of Natural Resources Local Trail Connections Program	The <u>Minnesota DNR’s Local Trail Connections Program</u> provides grants to local units of government to promote relatively short trail connections between where people live and desirable locations, not to develop significant new trails. Eligible projects include acquisition and development of trail facilities.

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<p>Minnesota Safe Routes to School Infrastructure Grants</p>	<p>The Minnesota Department of Transportation offers an <u>infrastructure funding program</u> for Safe Routes to School (SRTS) projects that make it safer to walk or bicycle to school. Eligible projects for MnDOT's SRTS infrastructure grants include bikeways and shared use paths. A SRTS plan is recommended to apply, but not required.</p>
<p>Minnesota DNR Recreational Trails Program (RTP)</p>	<p>The <u>Recreational Trails Program (RTP)</u> provides federal funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Eligible projects include motorized and non-motorized trail projects; maintenance/restoration of existing recreational trails; development/ rehabilitation of recreational trail linkages, including trail side and trail head facilities. Grant requests may be a minimum of \$1,000 and a maximum of \$150,000, with a match of 25% required.</p>
<p>FHWA Congestion Mitigation and Air Quality Improvement Program (CMAQ)</p>	<p>FHWA's <u>CMAQ program</u> provides a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards.</p>
<p>FHWA Surface Transportation Block Grant Program (STBG)</p>	<p>The <u>STBG, formerly known as the Transportation Alternatives Program</u>, authorizes funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities. In the Twin Cities metropolitan area, the Metropolitan Council's <u>Regional Solicitation process</u> allocates these funds to locally-initiated projects to meet regional transportation needs. Regional solicitation funds support locally-initiated highway, road, transit and other transportation improvements in the seven-county metro.</p>
<p>Community Services Block Grant Program (CSBG)</p>	<p>The <u>Community Services Block Grant</u> provides funds to alleviate the causes and conditions of poverty in communities and includes transportation projects. Administered by the U.S. Department of Health and Human Services, funding is allocated to states who then make it available to local communities. Funded projects have included: commercial district streetscape improvements; sidewalk improvements; safe routes to school; and neighborhood-based bicycling and walking facilities that improve local transportation options or help revitalize neighborhoods.</p>
<p>FHWA Highway Safety Improvement Program (HSIP)</p>	<p>The <u>Highway Safety Improvement Program (HSIP)</u> is a core Federal-aid program with the purpose to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned roads and roads on tribal land. Eligibility criteria for HSIP funds can be found here.</p>