

# Lake Vermilion Trail Master Plan



**Adopted by the  
Lake Vermilion Trail  
Joint Powers Board  
April 26, 2018**

**This document was prepared by the former Lake Vermilion Trail Steering Committee, and the current Lake Vermilion Trail Joint Powers Board and Work Group, with assistance from the Rivers, Trails and Conservation Assistance Program of the National Park Service, and the Arrowhead Regional Development Commission, with funding support from the Lake Vermilion Resort Association and other generous donors.**

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# Lake Vermilion Trail Master Plan

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# Chapter 1: Background

## **1.1 Location**

The Lake Vermilion Trail (LVT) will be located in north-central St. Louis County, about 90 miles northwest of Duluth and 25 miles north of Virginia. It will extend from its western terminus in the City of Cook north through Owens Township and Beatty Township to the western side of Lake Vermilion, then south of the lake through the Townships of Beatty, Greenwood, then through the Lake Vermilion Reservation of the Bois Forte Band of Chippewa. It will continue through the Townships of Vermilion Lake, and Kugler to its eastern terminus in the City of Tower, where it will directly connect to the City of Tower Trail System along a ½ mile segment scheduled for construction in 2018 to the regional Mesabi Trail. The Soudan Underground Mine State Park and Lake Vermilion State Park are along the Mesabi Trail, approximately two miles east of Tower.

The Lake Vermilion Trail is a planned 10 foot-wide, 40 mile-long, non-motorized, bituminous-surface trail connecting the cities of Cook and Tower south of Lake Vermilion, directly serving 4,170 permanent residents, 20,000 annual resort visitors, plus seasonal residents and other area tourists. About four miles of the trail to be incorporated into or connected to the LVT already exist near Fortune Bay Resort. Set in the year-round tourist destination of the Lake Vermilion area (which is partially adjacent to the Superior National Forest and the Boundary Waters Canoe Area Wilderness), the Lake Vermilion Trail will traverse through forested land primarily consisting of boreal hardwood-conifer and Great Lakes pine forests among granite outcrops, pocketed wetlands, and peat bogs. While known for its Ojibwe, fur trade and mining history, the quality of the area's premier natural features convinced the State Legislature to acquire and designate the state's newest state park, Lake Vermilion State Park in Soudan on the eastern end of the lake. The lake's scenic, forested bays have inspired a tourism economy based primarily on fishing and water recreation.

## **1.2 Trail Management**

The Joint Powers Board for the Lake Vermilion Trail was established in 2017, when the Cities of Cook, City of Tower, Bois Forte Band of Chippewa, Beatty Township, Greenwood Township, Kugler Township, Owens Township, and Vermilion Lake Township all signed a Joint Powers Agreement to establish the Lake Vermilion Trail Joint Powers Board for the purpose of developing, owning, managing and operating the Lake Vermilion Trail. All of the governments that have signed the Agreement appointed Board Members and Alternates to represent their governments on the Board. The Board held its first meeting on February 14<sup>th</sup>, 2018. The Joint Powers Agreement is included in the Appendix.

## **1.3 Other Project Supporters:**

Other project supporters include: the Lake Vermilion Resort Association, and many other financial contributors and volunteers from the Lake Vermilion area.

It is intended that St. Louis County should join the Joint Powers Board as a representative of Unorganized Townships 62-17 and 63-17, since the County is the local government for these townships. As of this writing, the County has not joined the Board. The County Board is currently reviewing their overall trail policy, which they want to finish before considering joining the Joint Powers Board.

## Chapter 2: Trail Description

### **2.1 Regional Significance Statement Summary:**

As a non-motorized regional trail, the Lake Vermilion Trail traverses 40 miles through a scenic, diverse forest area, connecting populations to recreational opportunities at the Soudan Underground Mine State Park, Lake Vermilion State Park, and Mesabi Trail, which logs over 132 miles across northern Minnesota. Facilities for on-shore recreation in the Lake Vermilion Trail corridor do not currently exist. This high quality recreational trail serving the growing, tourism-driven Lake Vermilion area fills this need.

### **2.2 Trail Vision**

**The Lake Vermilion Trail will be a premier, paved, scenic route providing an opportunity for healthy, safe, non-motorized, year-round transportation and recreation connecting Cook and Tower/Soudan in the beautiful natural landscape south of Lake Vermilion for residents and visitors.**

This trail will expand land-based recreational opportunities to better align with changing tourist desires. Existing state- and regional-level facilities that will make a direct connection to the Lake Vermilion Trail include the Arrowhead and Taconite State (snowmobile) Trails, Kabetogama and Sturgeon River State Forests, and the 132-mile Mesabi Trail. Soudan Underground Mine and Lake Vermilion State Parks will be accessible from the LVT via a 2-mile link on the planned Tower Harbor Trail and the existing Mesabi Trail. In addition, existing local trails that will feed into the LVT include the Greenwood Walking and Biking Trail, Bois Forte Reservation Trails, the Hoodoo Point Trail, Breitung Township's McKinley Park Trail, and the 24-mile Ashawa Ski Trails. As a connector among local facilities, large-scale facilities, and multiple cities, the LVT will form the backbone of a regional trail system within a prized recreational area in the state.

Despite Lake Vermilion's draw to tourists, seasonal residents, and permanent populations for water recreation, opportunities for non-motorized land-based recreation are limited in the area. Other than facilities on the lake's southeastern shore near Tower, few locations for residents and visitors to safely walk or bicycle on an off-road, paved surface now exist. The LVT will fill that gap. The trail will be located outside of road rights-of-way for the majority of the route, taking advantage of scenic views, and large tracts of government managed forest land. The pine forests, elevation changes, rock outcrops, and tamarack lowlands will make this, arguably, one of the most scenic trails in the state. Variation of trail type may also occur in wetland areas, which is the primary trail development obstacle along some segments of the

trail corridor. In this case, modular floating docks or boardwalks may be used to ensure continuity. For programming, the Joint Powers Board seeks to add interpretative signage highlighting the area's history and culture, natural features, sustainable land management practices, and possibly locally made art installations along the corridor. The energetic, active trail Work Group and Board plans on offering running races, bike rides, and other events to promote trail use, and an adopt-a-trail program to assist with maintenance.

Total Mileage: approximately 40

### **2.3 Regional Context**

The Lake Vermilion area is the home of 4,170 permanent residents and serves as a regional tourist destination within driving distance of a regional population center in the City of Virginia (population 8,700). Most of the local population, as well as 20,000 annual resort guests, are within a mile of the Lake Vermilion Trail corridor, which spans 40 miles from the City of Cook to the City of Tower. From west to east, the trail will connect to or pass through: Cook City Park, Wakemup Hill scenic overlook, the Arrowhead State Trail, Kabetogama State Forest, Head of the Lakes DNR public lake access, Wakemup Campground, an overlook near Oak Narrows Road, Fraser Bay Public Access, Greenwood Town Hall/Community Center and Park, Bois Forte Community Center, Tower's new harbor and riverfront park, the Taconite State Trail, the Mesabi Trail, Soudan Underground Mine State Park, and Lake Vermilion State Park. The trail may also pass through a portion of the Sturgeon River State Forest, and will offer views of portions of Superior National Forest.

On its western end, the trail will make connection to the City of Cook's business district and the U.S. Forest Service LaCroix Ranger Station, which acts as an information center for area natural resources. West and south of Lake Vermilion, the trail will make connection to resorts, areas of permanent and seasonal residence, and Fortune Bay Resort and Casino (with its hotel, casino, golf course, RV park, Heritage Museum, and conference center). On its eastern end, the trail will make connection to the City of Tower (including a business district, museum, campground, and marina), the Soudan Underground Mine State Park, the Lake Vermilion State Park, and the Mesabi Trail. With Mesabi Trail connection, the Lake Vermilion Trail will serve as a collector and connector for the Mesabi Trail by bridging the gap between local existing paved trails (the 0.9-mile Greenwood Walking and Biking Trail, the 1.1-mile Hoodoo Point Trail, and the 5-mile Vermilion Reservation Trail) and the Mesabi's existing and planned 132 miles, which has a recently built segment between Tower and Ely. The Lake Vermilion Trail will also directly connect to the 145-mile Taconite State Trail and the 135-mile Arrowhead State Trail as well as approximately 24 miles of rugged backcountry cross country ski trails maintained by the Ashawa Trail Ski Club. The state trails are primarily for snowmobiles and, although officially open to horseback riding, mountain biking, and hiking in the summer, are frequently impassable when not frozen due to wet soils and standing water. Other uses or improvements to these trails may be considered in the future.

## Chapter 3: Site Characteristics

### 3.1 Existing Facilities:

#### Existing Non-motorized, Paved Trails:

There are a few short trail segments within the Lake Vermilion Trail project area, between Cook and Tower/Soudan, south of Lake Vermilion. They are:

- **Greenwood Walking and Biking Trail:** This 0.9 mile paved trail parallels the northeast end of County Road 77 on the peninsula between Greenwood Bay and Daisy Bay. The trail is in good condition, and features attractive signage and benches. There is no designated public parking area for trail users, but the Moccasin Point public water access is a short distance away.
- **County Road 77 Shoulders:** Since the 2011 Trail Plan was written, wide, paved shoulders have been built along County Road 77 from the south end of the Greenwood Walking and Biking Trail to the intersection of Old Highway 77 and the current County Road 77. While they are not designated as official bike lanes, they serve pedestrians and bicyclists.
- **Bois Forte Trails:** The Tribal Council owns and operates 4 miles of paved, non-motorized trail on Reservation land. The trails run alongside Reservation Road and Farm Road. The Tribal Council has plans to extend their trail system as well.
- **City of Tower Trails:** A paved, 1.1 mile trail extends along Hoodoo Point Road from the City-owned Hoodoo Point Campground to the northwest corner of Tower's commercial area. The City has funding to extend the trail to the southeast, across State Highway 169, past a planned new harbor development, and connecting to the Tower Mesabi Trailhead behind the Tower Civic Center. Construction will begin on this new segment in 2018. This new Tower trail will connect to the Lake Vermilion Trail at Hwy 135, south of State Highway 169.
- **Mesabi Trail:** The regional Mesabi Trail, owned and operated by the St. Louis & Lake Counties Regional Railroad Authority, will be a 155 mile, non-motorized, paved trail from Grand Rapids to Ely that connects 28 communities. In 2018, over 120 miles are complete, including a segment of about five miles connecting Tower to Soudan & beyond, and a segment between Soudan and Ely. The Tower Trailhead is at Pine Street, two blocks south of State Highway 169. Parking is available behind the Civic Center. The trailhead includes historic railroad cars and depot with outdoor exhibits.
- **McKinley Park (Breitung) Trail:** The Township of Breitung owns and operates a paved, non-motorized trail that connects the Mesabi Trail in Soudan, which is within Breitung Township, with the Township-owned McKinley Park & Campground, with the new Lake Vermilion State Park. The western end of the trail is a short distance west of McKinley Park on County Road 697. The Township plans to extend this trail to the City of Tower boundary within the next few years. The approximately ¼ mile trail gap between the end of that planned Breitung Trail and the City of Tower's Hoodoo Point Trail is Segment 8 of the Lake Vermilion Trail.

These trails will continue to be owned and operated by the government that currently owns them. However, for marketing purposes, they will be considered as part of the Lake Vermilion Trail system. Some of the current trail segment owners have expressed interest in possibly joining the Lake Vermilion Trail as part of the Joint Powers Board-operated system at some point in the future. This option will be considered in future Trail Master Plan updates.

#### Existing Trail Destinations and Access Points:

The Lake Vermilion Trail will offer trail users connections to many destinations, points of interest and services, including the following locations (moving from west to east.) The Lake Vermilion Trail will take advantage of existing public facilities, as much as possible, to serve as trailheads/trail access points. Several of these destinations/trailheads will offer direct access to the lake.

- North Woods School, on Olson Road off US Highway 53, four miles north and west of the City of Cook, is the public K-12 school for students from the Cook and Orr areas, part of the St. Louis County School District 2142. In this Plan, Segment 1B intends to connect to the school along Olson Road (County Road 540). Because there is not much other development near the school, the City of Cook will be the primary western terminus of the Lake Vermilion Trail instead of the school.
- The City of Cook is on State Highway 53 near the intersection with State Highway 1. With a population of about 575, the City includes a hotel, hospital & clinic, grocery store, and other businesses of interest to tourists, such as restaurants, gift shops, and banks. The US Forest Service LaCroix Ranger Station is located in Cook, where permits to the Boundary Waters Canoe Area Wilderness can be obtained, as well as information about recreational opportunities on Forest Service managed land in the region. Other attractions are the historic Comet Theater and City parks. One of the City parks will likely serve as a Trailhead for the Lake Vermilion Trail. The trailhead location and any additional amenities will be planned when that trail segment is planned.
- Wakemup Hill is a scenic overlook on the Arrowhead State Trail, an unpaved snowmobile trail, west of Vermilion Drive (County Road 24) and south of Winnifred Road. The land surrounding the snowmobile trail is State-owned, County-managed tax forfeit land. The Lake Vermilion Trail will access this overlook either via a spur trail or the main Lake Vermilion Trail. The Lake Vermilion Trail will not displace the snowmobile trail. (Also see the Development Plan section re: trail use.)
- Wakemup Village Road Area, where the Beatty Township Wakemup Village Road intersects with County Road 24 and the partially County-owned but unmaintained Winnefred Road, is in the vicinity where the north-south and east-west portions of the Lake Vermilion Trail will meet. The location where the trail will cross CR 24 has not yet been determined.
- Head of the Lake Public Boat Access, a State-owned, DNR-managed boat ramp on the western end of Lake Vermilion, includes a small parking area, water access and a scenic view. It is in a small commercial area with a store/ice cream shop, restaurant, private campground and several resorts. This area will be a destination for trail users. Because the existing public parking area is small, the Lake Vermilion Trail will develop additional parking in the vicinity to serve as a trailhead.

- The Ashawa Ski Trail system is a cross country ski trail of about 24 miles that extends on private and public land west and east of CR 24, southwest of the head of the lake. It was maintained by a volunteer group, the Ashawa Trail Ski Club, but has not been regularly maintained in recent years. The Club has informal agreements with landowners to use the ski trail corridor. The Lake Vermilion Trail may cross or connect to this trail, and may use some of the same trail corridor. The Lake Vermilion Trail will be open to cross country skiing in the winter, so no ski trail miles will be lost. (Also see the Development Plan section re: trail use.)
- Camp Vermilion is a private camp owned by Voyageurs Lutheran Ministry, which offers programming for adults and children. The LVT will likely pass through Camp Vermilion land, but will not provide public access to camp facilities.
- Wakemup Campground and Day Use Area is a State-owned area on Wakemup Bay within Kabetogema State Forest that is managed by DNR. It includes a primitive campground with 22 sites, drinking water, vault toilets, picnic shelter, a swimming beach and public boat ramp. A new, natural surface hiking trail was constructed in 2017. This scenic location will serve as a trailhead and a destination for the LVT.
- A scenic viewpoint exists on high ground on Oak Narrows Road, with large pine trees and a view of the lake. There are no existing facilities here, but this area may serve as a trail “wayside”/small rest area when this trail segment is built (Segment 3.)
- Fraser Bay Public Access is located near the center of the planned trail. It is a State-owned, DNR-managed boat ramp with a paved parking area. This will serve as a trailhead for the LVT, but additional parking may be necessary after the trail is built and usage increases.
- Greenwood Town Hall is a Township-owned property that consists of a town hall/town office/community center and maintenance facility. A large, paved parking lot also serves as a helicopter landing pad for emergency services. There is a basketball hoop, bocci ball pits, picnic shelter, skating rink, warming shack, and portable toilets on the grounds. In addition, equipment has been purchased for a new playground area and other recreational facilities to be installed on the site. This is anticipated to serve as a trailhead for Greenwood residents and visitors.
- Fortune Bay Resort Casino is on lands owned by the Bois Forte Band of Chippewa, on Bois Forte Road, off of Lake Vermilion Reservation Road, east of CR 77. The property includes a hotel, casino, golf course, marina, RV park, conference and banquet center, and heritage center/museum. A natural surface trail connects some of the facilities. This complex has about 500 employees, and is reported to be the largest non-mining employer in the region. The complex is on the Bois Forte paved trail system, which will connect to the Lake Vermilion Trail, providing a non-motorized transportation option for employees and visitors. Other facilities on Bois Forte land include a community center, wellness center, and tribal offices, some of which are currently connected by the Bois Forte trail system.
- The Y-Store complex has a convenience store, gas station, liquor store, restrooms, and seasonal sales. It is on Bois Forte land at the 3-way intersection of State Highways 169 and 1 and CR 77, and will be a destination for trail users.

- Minnesota Department of Natural Resources Area Headquarters is located about ½ mile west of the Tower commercial district, and offers information about public recreational opportunities in the area. A portion of their parking lot is available to the public, although the primary purpose of the complex is for offices and a maintenance facility. It is not suited to be a primary trailhead for the LVT, but may be a stop for trail users wanting information about the area.
- The City of Tower will be the major eastern terminus of the LVT. State Highway 169/1 serves as its main street, which State Highway 135 intersects toward the west side of town. The city includes a hotel, restaurants, gift shops, a museum, historic railroad cars and depot, a city-owned full service 92-site campground. In 2017/18 the City received funding for a harbor complex, which will add paved trail connections, a riverfront park, public docking, and new residences and commercial establishments. The Segment 7 of the LVT will end at the new trail at the harbor complex near downtown. The main trailhead in Tower will be at the existing Mesabi Trail trailhead on Pine St. (See Mesabi Trail description in Existing Trails section above.)

### **3.2 Proposed Facilities:**

This plan describes the planned development of a paved, non-motorized, multi-use trail of about 40 miles from Cook to Tower south of Lake Vermilion. Some connecting trails already exist, as described above, but the entire Lake Vermilion Trail is proposed to be developed over the next twenty years. Besides the existing facilities that will serve as destinations and trailheads along the LVT, additional parking areas or trailheads and other trail amenities will be developed as needed. It is intended that each segment listed in the Development Plan and on the attached map will have at least one parking area to serve as a trailhead that will include a trail map, a mileage chart identifying mileage to other destinations along the trail, information about commercial and recreational destinations near the trailhead, connecting trails, permanent or portable restrooms, and drinking water, as well as interpretive information. Along the trail, mile markers will be installed, and small trailside rest areas with benches will be developed at scenic locations or at regular intervals along the trail. At interesting natural or historic sites along the trail corridor, trail “wayside” interpretive signs will be installed. At scenic overlooks, vegetation may be trimmed, as needed, to maintain views. Trailheads may also include art installations and other amenities, such as picnic tables or landscaping. Signs along roads that lead to trailheads will be installed as needed to direct trail visitors to trailheads. See the Development Plan section for more details.

It has been the intention of the communities and volunteers on this trail effort to develop this trail as a paved trail for many years. There are other surface options, however. Crushed stone surfaces are used commonly in Wisconsin and other places around the country. Newer, permeable hard surfaces are also available: permeable asphalt or concrete, concrete pavers, soil binders are some of the options. However, there are issues with these newer materials, such as the edges of the permeable asphalt breaking off. The newer materials are usually more costly as well. Crushed stone surfaces are not favored by bicyclists, and often require more frequent maintenance than asphalt, increasing the maintenance cost. Rollerskaters and rollerskiers, which are more common in Minnesota than elsewhere in the country due to the

popularity of hockey and skiing, cannot use crushed stone trails. The rationale for choosing asphalt/bituminous surface include:

- Bicyclists who use road or hybrid bicycles prefer smooth surfaces such as asphalt, and form a significant portion of the trail-related tourist sector.
- Asphalt is the standard for State trails in Minnesota, so an expectation of long distance trails being asphalt has been set among the state's trail tourists
- Crushed stone surfaces are not as user-friendly and often requires more maintenance. Crushed stone is also more difficult to keep to the "firm and stable" standard to meet Accessibility guidelines.
- Alternative surfaces have too many structural problems and are cost-prohibitive at this writing.

However, alternative hard surfaces may be considered in the future as materials are developed and improved, or for short segments.

### **3.3 General Site Characteristics:**

With over 1,200 miles of shoreline, Lake Vermilion offers a wide range of natural and developed areas to explore including natural forests and commercial corridors. The Lake Vermilion Trail will traverse along the south shore of Lake Vermilion through forested land primarily consisting of boreal hardwood-conifer and Great Lakes pine forests. The area is interspersed with bedrock outcrops, pocketed wetlands, and peat bogs and offers a landscape unlike any other in the state. This scenic area is also home to more densely developed areas, often occurring on small lots with good road access to both water and commercial activity. The trail will provide an intimate look at Lake Vermilion's scenic pine forests, elevation changes, rock outcrops, and black spruce/tamarack lowlands. In addition, key overlooks will provide trail users with views of the Lake's shallow bays, aquatic vegetation, and rocky shorelines. The trail will offer local residents and visitors easy access to this area of pristine natural beauty south of Lake Vermilion and will arguably be one of the most scenic trails in the state.

### **3.4 Public Involvement Summary:**

Since the beginning of the trail planning project in 2011, the Lake Vermilion Trail has relied heavily on a local Steering Committee made up of volunteer citizens. Throughout the process, the Steering Committee has worked to form a project vision and to identify an overall trail purpose, intended allowable uses, and desired connections. Committee members have also had the opportunity to review and comment on maps of the potential trail alignments, trail construction costs estimates, and a trail logo and signage scheme. The trail logo was created during a 2016 community logo contest. The winning logo, designed by Sue Wolfe, was awarded a \$500 cash grand prize from donated prize money, and was selected out of 21 other entries. The winning entry is being used for signing, correspondence, and publicity of the Lake Vermilion Trail.

The public has been informed of the proposed Lake Vermilion Trail in many ways since the steering committee was formed. Local newspapers have provided information at the beginning when steering committee members were being recruited. Periodic updates have continued to

be published in the local papers and in Lake Vermilion Association Newsletter. Steering committee members have attended local meetings such as the Chambers of Commerce to provide information on the trail planning. Members have also provided information at local festivals such as Cook's Timber Days, Camp Vermilion's Blue Grass Festival, and Tower's Fourth of July Fourth 5K run. Information has been posted on local websites such as the Lake Vermilion Resort Association and Lake Vermilion Chamber of Commerce. The trail initiated their own website in 2015. The public can and does provide comments through the trail's website at <https://lakevermiliontrail.org>. In 2017, a facebook page (@lakevermiliontrail) was also begun and provides periodic updates.

Public meetings were held in conjunction with development of the 2011 Lake Vermilion Trail conceptual Plan and the 2013 Lake Vermilion Trail Location Study. The public was invited to an open house on Saturday August 27, 2011 as well as a presentation on Wednesday evening August 31. During both meetings, attendees expressed that they were supportive of the concept of a paved non-motorized trail connecting Cook and Tower south of Lake Vermilion. An overall summary of public comments can be found on page 24 of the conceptual plan. A public open house was held on October 10, 2013 at the Greenwood Township Town Hall to present the Location Study finding to the general public and to receive feedback on the trail alignments.

The Joint Powers Board and Work Group continues to work to build a large base of support for the project among local city, township, and county government officials and staff, local residents, seasonal residents, business owners, and other stakeholders in the proposed project area. Trail volunteers provide information at surrounding community meetings in an effort to draw support for the trail. In addition, the Committee has distributed nearly 500 trail brochures to Lake Vermilion Resorts and other businesses along the proposed trail route.

This Master Plan has been developed with substantial input from the former Steering Committee and the current Board and Work Group. The Board held public meetings on the Draft Master Plan between April 17<sup>th</sup> and 19<sup>th</sup> in Cook, Tower and Greenwood. Notices about the public meetings and an open comment period were printed in the local newspapers and advertised on the trail website and Facebook page. Official notices of the public meetings were posted in advance at the appropriate locations in all three of the communities where the meetings were held. The public meetings had an open house format, with a presentation given each night by a Board or Work Group member. Twelve posters were displayed that described important policies in the Master Plan. The Concept Map and maps of the two trail segments that are in the detailed planning stage were also displayed. Nine people attended each of the Greenwood and Tower meetings, and 19 people attended the Cook meeting. The vast majority of the attendees supported the trail concept. A few had concerns about the possibility of the trail coming close to their properties, costs, etc. Five people volunteered to help the trail effort.

Attendees of the public meetings were asked to fill out a comment form, and 17 were received. All responded that they would use the trail once it is built. Most indicated that they would use it for recreation and exercise/fitness, either walking or biking. When asked how far they would be willing to travel to the starting point of the trail, the answers ranged from 1 mile or less to 40

miles or more. Ten people wrote additional comments, of which eight expressed their support for the trail. The two others have concerns about maintaining privacy for adjacent property owners. Three comments on the plan were received on the trail website, and three comments were received by e-mail. Three of these, including from State Rep. Ecklund, were in full support of the trail. The other respondents wanted maintenance in winter for biking & x-c skiing, suggested crushed stone instead of a paved surface, suggested a bike license fee, and were concerned about garbage, and keeping snowmobiles off the trail. The Board and Work Group have considered these comments, and have made adjustments to the final master plan that they determined were appropriate. See the Appendix for more details.

### **3.5 Regional Demographic Information**

The proposed Lake Vermilion Trail area in St. Louis County includes the City of Cook, the City of Tower, Bois Forte Lake Vermilion Reservation Lands, Beatty Township, Greenwood Township, Kugler Township, Owens Township, Vermilion Lake Township, and the St. Louis County Northeast Unorganized Territory. Breitung Township which includes the unincorporated area of Soudan is two miles east of Tower. The area's population is estimated at 4,170 as of 2015 (ACS, 2015), up slightly from 3,954 in 2010 (Census, 2010). The trail will locally serve permanent residents on a daily basis by offering an alternative transportation route to key commercial and public sites such as the Cities of Cook and Tower, Greenwood Town Hall, and the Y-store, as well as safe, healthy recreation.

In addition to serving the local population, the Lake Vermilion Trail will serve the entire Arrowhead region as a destination recreation trail. Over 20,000 people per year stay at Lake Vermilion resorts which directly connect to the Trail. The Arrowhead region as a whole is projected to slightly decrease in population from 330,000 to 320,000 over the next 30 years, while becoming more racially diverse (Minnesota State Demographic Center, 2014). This projection is in line with recent changes to the Lake Vermilion Trail area; the local population is becoming more diverse with the non-white population of the area increasing from 10% in 2010 to 17% in 2015. Fifty percent of the local Lake Vermilion area population is 55 years of age or older. This age group is commonly overlooked when governments plan park systems that are designed primarily for children, by providing playgrounds and ballfields. Many of the people in this age group continue to be physically active and have relatively more time for outdoor activities. This over 55 age group, as well as underserved communities, will take advantage of a safe and accessible trail system. Paved trails designed to accessibility standards serve people of all ages and abilities.

### **3.5 Public Health Values**

The Steering Committee was surveyed in January 2018 regarding the relative importance of the public health values listed in the Master Plan template. They are listed in order from most important to least important:

1. Connects People to the Outdoors

2. Promotes Healthy Lifestyles
3. Promotes Physical Activity
4. Enhances Mental Health
5. Encourages Social Interaction

In addition, attendees at the 2018 Master Plan public meetings were asked to rank the five values from 1 (Very Important) to 5 (Very Unimportant). Seventeen surveys were collected, with the following results:

Connects People to the Outdoors: Very important—14 responses, Important—3 responses

Promotes healthy lifestyles: Very important—14 responses, Important—3 responses

Promotes physical activity: Very Important—14 responses, Important—3 responses

Enhances Mental Health: Very Important—12 responses, Important—3 responses, Neutral—1 response

Encourages Social Interaction: Very Important—10 responses, Important—5 responses, Neutral—1 response, Very Unimportant—1 response

The 2015 Bridge to Health Survey asked participants how they would rate their health on a scale of "excellent" through "poor" to measure their perceived health status. Fourteen percent of people who responded in St. Louis County (outside of Duluth) responded "excellent" while the percentage is higher for Minnesota 22% (BRFSS 2013). This trail will help promote a healthier lifestyle in the great St. Louis county area, a place that is sorely lacking on-shore choices for healthier lifestyles at the moment. The trail will support the physical well-being of the communities and region by encouraging active recreation and access to nature. Mental well-being can be improved with better access to the outdoors as well as a new recreation option that can promote social interaction and family time. In addition, the trail addresses public safety by allowing residents to walk and bicycle off-road. Other than facilities on the lake's southeastern shore near Tower, few locations for residents and visitors to safely walk or bicycle on an off-road, paved surface now exist. The LVT will fill that gap.

### **3.6 Economic Development/Tourism Opportunities**

The Lake Vermilion trail will help bolster the already strong tourist attraction to the Lake Vermilion area. The Lake Vermilion area is the home of 4,170 permanent residents and serves as a regional tourist destination within less than an hour's drive of a regional population center in the Iron Range Cities of Virginia, Hibbing, Chisholm, Eveleth, etc. (total area population of 42,000), and the City of Ely (population 3,460). The Lake Vermilion Trail is filling a gap between these recreation and outdoor amenities that can serve to connect the areas south of Lake Vermilion to the rest of the region. The interest in the trail will be strengthened by the already impressive array of parks and trails surrounding the trail including the regionally significant Mesabi Trail. Using an intercept survey, it was determined that 86% of non-local Users on the Mesabi indicated that the Mesabi was "very important" or "important" in their choice to visit the region. In addition, the Mesabi helped people stay longer during their trips and spend more. The Lake Vermilion Trail will have the same effect for an area that is already rich in amenities, but does not yet have a recreation trail to traverse between them all.

Many of the surrounding areas have already pledged to help promote the trail in an effort to reinforce their tourist attraction including the cities of Cook and Tower who state that having a trail in this area would provide an economic benefit. The Tower-Breitung Joint Comprehensive Plan, 2015, states that they support expansion of tourism infrastructure by developing recreational facilities for hiking/biking. Cook says it will support and participate in efforts to create bicycle facilities in the Lake Vermilion area in order to take economic advantage of bicycling (City of Cook Comprehensive Plan, 2015). Both of these cities as well as numerous Townships in the area recognize the economic advantage of having a non-motorized trail.

### **3.7 Recreational Trends Information**

Data on recreational trends in northern St. Louis County are not available, and statewide and regional data is limited. However, national, regional and statewide data that is available can help explain recreational needs. In the U.S., the most popular outdoor activities for adults are, in order: running/jogging, fishing, hiking, biking, and camping. For youth ages 6-24, the most popular outdoor activities, in order, are: running/jogging, biking, fishing, camping and hiking. The activities with the most growth of participants in the U.S. between 2014-2016 are: stand up paddling, cross country skiing, BMX biking, adventure racing, windsurfing, kayak fishing, trail running, off road triathlons, hiking and climbing. Activities in the U.S. that are expected to have the most growth in participants between 2008-2030 are: skiing, visiting interpretive sites, day hiking, birding, and equestrian activities. The activities expected to have the least growth are: hunting, motorized snow activities, motorized off road use, floating, and fishing.

In the Outdoor Participation Statewide data, 1996 – 2006 in Minnesota, participation by anglers, hunters, state park visitors, and BWCA visitors decreased. However, state park visitors in Northeast MN increased from 2003 to 2010. Regional data indicate that the top recreational activities in the Northeast Region in 2010 were, in order: walking/hiking, boating, swimming/wading, driving for pleasure, picnicking, fishing, camping, and nature observation, hunting, visiting nature centers, and biking. The top recreational activities by travelers to northeast Minnesota between 2005-08 were: hiking—34%, fishing—12%, wildlife viewing/birdwatching—12%, lake/river swimming—9% and biking—9%.

These data indicate that the activities that people can do on hard surface trails, including running/jogging, walking/hiking, biking and bird/wildlife watching, are popular activities in the country, state and region. The Lake Vermilion Trail will also offer interpretive displays at trailheads and along the trail, so can take advantage of the growing trend to visit interpretive sites. Anecdotally, resort owners and others in the tourism business in the Lake Vermilion area indicate that fishing is no longer enough of an attraction to support the area's tourism industry. The trail is planned, in part, to address the need for more varied recreational opportunities in the area. The trail will also address the need for safer locations to do some of the most popular outdoor activities: walking, biking, nature observation, and running.

## **Chapter 4: Regional Significance of Trail**

### **--Non Motorized Classification**

#### **4.1 Criteria #1: Provides high quality destination trail experience**

The LVT will be a high quality destination trail. In the 1940s, the National Geographic Society declared Lake Vermilion one of the top 10 most scenic lakes in the U.S., and it still is. Views of and access to the lake, the state's 4th largest, will add significant scenic value along the LVT; the lake spans 40,000 acres with 1,200 miles of shoreline, 365 islands, and hundreds of bays and coves. Set within the Laurentian Mixed Forest Ecological Province, the trail corridor will traverse several ecological subsections, offering a variety of scenic, sparsely developed landscapes, from peatlands near Cook to hilly glacial till uplands, to bedrock cliffs and Canadian Shield pine forests, and to the narrow, high Giant's Range ridge near Tower. Although the exact trail alignment has not been finalized, the Trail Plan and the steering committee call for the trail to be located well away from roads for most of its length. Where the trail needs to be located near a road due to environmental constraints or development, the trail will be separated from the roadway by at least the MnDOT-recommended minimum distance of 24 feet for a 45+ mph road, with a vegetative (likely existing forest) buffer to maintain scenic integrity. Because relatively few roads exist in the area, road crossings will be infrequent, generally occurring only about once every mile. Many of the roads are low-volume county or township roads, and crossing location and design will be carefully designed to maximize safety. Adding to the ""destination"" trail experience, unique trail features will include elevation changes, floating or boardwalk segments, and a possible bike ferry across Lake Vermilion's Pike Bay. Combined, these features will make the LVT a truly unique experience that will inspire return visitors both familiar and new to the Lake Vermilion area.

#### **4.2 Criteria #2: Well-located to serve regional population or tourist destination**

The 40-mile LVT will directly connect residences and tourist accommodations along Lake Vermilion's shores to area destinations. The Lake Vermilion area is an established regional tourist destination with 20,000 annual resort guests, including Fortune Bay, the largest non-mining employer (500 employees) in the region. The LVT will be within a mile of 21 resorts, two motels, an RV Park and two campgrounds, and within three miles of an additional four resorts and campgrounds. The Lake Vermilion area is also a local population center with 4,170 permanent residents. The LVT will be within a mile of most of this population. The Iron Range cities, with a total population of 42,000, are within an easy 25 to 45 mile drive; Virginia (pop. 8,700) is the closest, just 25 miles away. The Ely area is also about 25 miles away, with a permanent population of 3460 and many resorts. In Tower, the LVT will directly connect to the regionally significant Mesabi Trail, a segment of which passes through Tower. With this connection, the Lake Vermilion Trail will bridge the gap between local existing paved trails (the 0.9-mile Greenwood Walking and Biking Trail, the 1.1-mile Hoodoo Point Trail, and the 5-mile Vermilion Reservation Trails) and the Mesabi's existing and planned 132 miles. The Lake

Vermilion Trail will also directly connect to the 145-mile Taconite State Trail and the 135-mile Arrowhead State Trail as well as approximately 24 miles of rugged backcountry cross country ski trails maintained by the Ashawa Trail Ski Club. The state trails are primarily for snowmobiles and, although officially open to horseback riding, mountain biking, and hiking in the summer, are frequently impassable when not frozen due to wet soils and standing water. Other uses or improvements to these trails may be considered in the future.

#### **4.3 Criteria 3: Enhances connectivity to regional destinations**

The Lake Vermilion Trail will expand non-motorized facilities in the area by adding a long "leg" to the Mesabi Trail to connect the major tourist area of Lake Vermilion's western and southern shores as well as the local population centers of the cities of Cook and Tower to other popular recreational facilities in the area. From west to east, the trail will connect to or pass through: Cook City Park, Wakemup Hill scenic overlook, the Arrowhead State Trail, Kabetogama State Forest, Head of the Lakes DNR public lake access, Wakemup Campground, an overlook near Oak Narrows Road, Fraser Bay Public Access, Greenwood Town Hall/Community Center and Park, Bois Forte Community Center, Tower's new harbor and riverfront park, the Taconite State Trail, and the Mesabi Trail. Soudan Underground Mine and Lake Vermilion State Parks are on the Mesabi Trail about 2 miles from the planned end of the LVT. The trail may also pass through a portion of the Sturgeon River State Forest, and will offer views of portions of Superior National Forest. Besides connecting important public lands and recreation facilities, the Lake Vermilion Trail will connect to multiple public interest destinations. On its western end, the trail will make connection to the City of Cook's business district and the U.S. Forest Service LaCroix Ranger Station, which is an information center for area recreational resources. Along the areas west and south of Lake Vermilion, the trail will make connection to resorts, areas of permanent and seasonal residence, and Fortune Bay Resort and Casino (with its hotel, casino, golf course, RV park, marina, heritage center, and conference center). On its eastern end, the trail will make connection to the City of Tower, including a business district, museum, campground, and marina. Soudan is adjacent to Tower, connected via the Mesabi Trail.

#### **4.4 Criteria 4: Fills a Gap in Recreational Opportunity within a Region**

The Lake Vermilion area is home to numerous regional destinations, but significant gaps in non-motorized, land-based recreation plague the area. While the City of Tower has recently been connected to the Mesabi Trail, the Lake Vermilion area lacks safe places to walk and bike west of Tower, since most roads in the area are either gravel or have narrow or non-existent paved shoulders, and there are only a few short local biking and walking trails. Unfortunately, where these gaps exist along the western and southern shores of Lake Vermilion is where many residents live and where tourists stay during their visits to the area. While a few recreational trails exist in the area, they are notably limited to snowmobile facilities, such as the Arrowhead State Trail and the Taconite State Trail; these facilities pass through swamps and are wet in the summer, making them impassable for walkers or bicyclists. Likewise, more localized trails, like the Ashawa (Cross-country Ski) Trail and non-state snowmobile trails are not open to the public other than during the winter. Even in considering a few paved trail facilities in the area (the 0.9-mile Greenwood Walking and Biking Trail, the 1.1-mile Hoodoo Point Trail, and the 5-mile Vermilion Reservation Trail), they are only local trails with limited ability to serve Lake

Vermilion populations and tourists. Likewise, other recreational opportunities are limited for people without boats. There are no County parks or recreational programs, and few ballfields, playgrounds, or ice rinks in the area. The Lake Vermilion Trail will help fill this recreational gap, creating safe, non-motorized recreation and travel options south and west of Lake Vermilion to connect area visitors and populations to recreation options in state parks and on the Mesabi Trail. It will also provide a safer access route to the limited recreational opportunities that are available in the area.

## Chapter 5: Development Plan

### 5.1 Trail Vision:

**The Lake Vermilion Trail will be a premier, paved, scenic route providing an opportunity for healthy, safe, non-motorized, year-round transportation and recreation connecting Cook and Tower/Soudan in the beautiful natural landscape south of Lake Vermilion for residents and visitors.**

### 5.2 Trail Uses:

The trail will be open to the following uses:

Pedestrians (Walkers, Joggers, Runners)

Bicyclists

Rollerskaters & Rollerskiers

Skateboarding on the trail surface (no jumps on benches or other facilities.)

Motorized mobility devices, such as power wheelchairs

### Not Allowed:

Motorized Off Highway Vehicles (ATVs, Off Road Motorcycles, etc.)

### Horses:

Horses will not be allowed on the paved trail because their hoofs cause damage to the trail surface. In community outreach so far, there has been only minimal interest from horse owners in the area for use of the trail. As trail segments are developed, if there is substantial desire for horse use in a segment, then the Board will explore the feasibility of adding a second, parallel, natural surface trail within the Lake Vermilion Trail corridor. Horses are allowed on the Arrowhead State Trail, which traverses the same general area as that proposed by this trail.

### Winter Use:

Walking

Snowshoeing

Cross Country Skiing

Fat Tire Biking

Skijoring

Dogsledding

The trail will not be maintained in winter, but it will remain open.

People will be welcome to walk, snowshoe, cross country ski, or use fat tire bicycles on the trail.

Not Allowed:

Snowmobiling. Snowmobiles are the primary use on the Arrowhead State Trail, which traverses the same general area as planned for the LVT. In addition, there are locally managed snowmobile trails in the vicinity.

Hunting:

Regulations regarding hunting will be developed by the Board as the trail segments are developed. The Board will follow local and state hunting regulations. Issues to consider include: access to the trail corridor, length of corridor segment, landowner requests, and land uses in the vicinity, as well as local City/Township/Tribal Land hunting regulations.

Pets:

Pets are allowed on the trail, but pets must be leashed at all times.

Shared corridors:

There may also be opportunities to develop "shared corridors" for the Trail to parallel an unpaved snowmobile or horse trail, or locate the paved trail within an existing unpaved trail corridor. However, it is not the intention to develop parallel paved and unpaved trails for the length of the trail. It is not intended that this trail displace any existing designated trails, such as snowmobile trails.

Trail Etiquette:

Given other formalized trail systems in the area, trail use etiquette policies may also need to be established, especially along any potential shared trail corridors. These policies will help mitigate potential issues with maintenance and overall trail use

**5.3: Trail Development Priorities:**

Because the planned trail is about forty miles long, the trail will be developed in phases. The 2011 Lake Vermilion Trail Plan divided the project area into twelve segments to be developed. The map from the 2011 Plan has been updated, but the segment start and end points have remained the same as originally proposed. The segment start and end points are at publically owned locations or areas where permission for public use is granted, so that a trail segment can be conveniently accessed as a stand-alone trail even if the adjacent segments are not developed until later years. These trail segments have been prioritized into three categories: high, medium and low priority segments. The segments within each category are listed in numerical order. Each of the trail segments is described in more detail in the Development Feature section, and is depicted on the Lake Vermilion Trail Concept Map.

### High Priority:

Segment 1A: Head of the Lakes Public Access to Wakemup Village Road Area

Segment 5: Greenwood Town Hall to Fortune Bay

Segment 6: Fortune Bay to State Hwys 169/1/Co. Rd. 77 Intersection

Segment 7: State Hwys 169/1/Co. Rd. 77 Intersection to Tower

### Medium Priority:

Segment 1: Cook to Wakemup Village Road Area

Segment 2: Wakemup Village Road Area to Wakemup Campground

Segment 3A: Oak Narrows Spur

Segment 3B: Wakemup Campground to Intersection of Beatty & Oak Narrows Rds

Segment 4: Fraser Bay Public Access to Greenwood Town Hall

Segment 6A: Hoodoo Point to Fortune Bay Ferry Route

Segment 8: Hoodoo Point to Breitung Township Line

### Low Priority:

Segment 1B: Cook to Northwoods School

Segment 3C: Intersection of Beatty & Oak Narrows Roads to Fraser Bay Public Access

This priority list will be reevaluated annually. The segment priorities may change as opportunities arise, such as:

- land for the trail corridor becomes available
- community support strengthens for particular segments
- volunteers commit to segment planning

## **5.4 Segment Planning**

Planning for each segment includes data gathering and analysis of many conditions, including the following:

- Natural resource data gathering and analysis, especially considering areas to avoid, such as: wetlands; hydric soils; and areas with rare, threatened or endangered species
- Landscape features: slopes, rivers & creeks, floodplains, rock outcrops, bogs
- Scenic value: places for scenic view, especially of Lake Vermilion. The former LVT Steering Committee and the current LVT Joint Powers Board and Work Group want to develop this trail to be as scenic as possible.
- Trail experience: The Board desires this trail to be developed to be a premier, high quality trail offering an exceptional trail experience to trail users. The trail experience is influenced by many elements, including: the scenic value; trail and trailhead condition; location and ease of transportation to the trailheads; amenities such as restrooms, water fountains, parking and benches; safety; directional signage; and interpretive information. Unnatural noises and smells such as car exhaust also influence experience.

In studies, trail tourists want to enjoy the sights and sounds of nature. Trails entirely or mostly along highways will not draw the numbers of recreational tourists that trails away from road noises and fumes will.

- Property boundaries and ownership: the Board will use as much public land as is suitable for a trail. One unusual circumstance in St. Louis County is that the County does not usually own public right-of-way that goes beyond the edges of the road surface. In other counties around the state and country it is common for the public road right of way to extend well beyond the sides of a road to include ditches parallel to the road for water runoff. These rights of way are commonly 66 feet for a two-lane road, and wider for four lane roads. In other counties, this is a common place to locate trails because the right of way is already in public ownership. In the Lake Vermilion area, there is no advantage to locating the trail adjacent to the road because a trail easement would have to be negotiated with every adjacent landowner. In fact, there is a disadvantage to “sidepaths” parallel to roads. The AASHTO “Guide for the Development of Bicycle Facilities” states that sidepaths, those trails parallel but close to roads, are not the safest location for a trail. Accidents commonly happen at intersections, and there are more intersections along roads, considering that each driveway and cross street is a potential location for a crash. Motor vehicle drivers do not often look for pedestrians or bicyclists as they are leaving a driveway or approaching an intersection. This trail will try to avoid aligning the trail along roads for this reason. In addition, a more scenic route away from cars and trucks is more desirable for local trail users as well as visitors. The most popular trails in Minnesota for tourists and recreational users are those away from roads.
- Willing landowners: The Joint Powers Board will not use “condemnation” for trail easements, and will only work with landowners who are willing to consider a possible trail easement across their land. Landowners will be contacted individually as trail segments are planned.
- Proximity or connections to other recreational destinations: The trail will connect many public destinations along or near Lake Vermilion, including public lands on the shore (boat access sites), two State campgrounds, and several City and Township parks and campgrounds. The trail will connect to the new Lake Vermilion State Park via the Breitung Township Trail and Mesabi Regional Trail, and to the Fortune Bay RV Park via Bois Forte Trails.
- Proximity or connections to tourist related businesses: Many communities, including the Lake Vermilion area, desire to build trails to increase amenities for tourists and, in turn, to increase the numbers and lengths of stays of tourists. The LVT general route has been selected to connect the two cities in the area, and to be in the vicinity of areas south of Lake Vermilion, where many resorts and seasonal and permanent residences are located.
- Proximity or connections to and from residential areas and employment centers: The trail will undoubtedly play a role as a non-motorized transportation corridor for people to get to work, school and shopping, etc., as well as its role as a recreational or fitness trail. Commuters often prefer a direct route between origins and destinations to minimize travel time.

- Safety Issues: Trail alignments will consider where the safest route can be located to avoid accidents. Potential trail crossings of roads and any active railroads will be reviewed with highway/railroad engineers early in the segment planning stage to plan the trail around the safest crossing locations.
- Accessibility: If state or federal funds are used to develop the trail, then the trail must meet federal Americans with Disabilities Act (ADA) accessibility guidelines. Because the Joint Powers Board intends to apply for state and federal funding for trail development, this trail will be built to meet the accessibility guidelines wherever possible. In general, the trail must have a grade of 5% or less, a cross slope of no more than 2%, a “firm and stable” surface, and no significant horizontal gaps or vertical obstructions. These requirements make trails built to these standards more safe and comfortable for other trail users as well. Most long distance “hard surfaced” trails in Minnesota are paved with bituminous surfaces (asphalt.) This is the preferred surface for many bicyclists and rollerskaters. The LVT is intended to be an asphalt trail, so will easily meet the “firm and stable” requirement. The 5% grade may be difficult to meet in some areas. However, there are exceptions built into the guidelines. They allow steeper trail grades under certain circumstances. It is also possible to apply for an exemption to the ADA guidelines for some segments if the trail location meets the exemption criteria.
- Existing Corridors: Corridors that already exist can sometimes make good trail corridors, such as abandoned roads, former railroad corridors, existing informal trail corridors, and utility corridors. However, these corridors often don’t consider terrain conditions, such as steep slopes and wetlands, so are not always ideal. Coordination with and approval of the landowner and any easement owners would be necessary.
- On private property, it may be more acceptable to landowners to locate a corridor along the property boundary for minimal disturbance to the owner’s uses. Another strategy is to negotiate for ½ the corridor along a property boundary from one property owner and ½ from the adjacent owner.
- “Follow the Contours”: in hilly areas such as this, a trail would ideally follow topographic contour lines that are not in the lowest areas and not on the highest areas, to keep the trail to a manageable grade, and to avoid erosion on hilltops and wetlands at the bottom. The ideal trail corridor will likely be adjusted to avoid other land uses.

To plan each trail segment, the Joint Powers Board and Work Group will follow this process:

1. Set up a subcommittee for each trail segment, comprised of Board members, Work Group members and other volunteers.
2. Conduct data gathering and analysis as described above
3. Create several alternative alignments on maps, based on data and analysis
4. Conduct field visits to portions of the alternative alignments that are accessible (only with permission on private lands.)
5. Consider pros and cons of each possible alignment, eliminating or altering alignments if discovered to be infeasible or undesirable.
6. Discuss alignment options with public land managers and private landowners, and add, adjust or eliminate options accordingly.

7. Assemble a proposed alignment over lands with willing landowners only; compile “letters of intent” from landowners indicating their willingness to negotiate regarding a potential trail across their property. These letters are used for grantwriting purposes.
8. Conduct a public meeting regarding the proposed alignment to gather public input. Adjust the alignment as necessary.
9. Prepare a preliminary engineering plan for the segment and obtain a cost estimate.
10. Apply for acquisition and development funding.
11. Hire a design firm to complete survey, trail design, and permitting, adjusting design as necessary. If planning is done well and thoroughly, alignment changes should only be minor at this stage.
12. Hire a construction firm to build the trail and manage construction, or hire one company on a design/build contract.
13. Trailhead development and development of trailside amenities can be done at the same time as trail construction or as separate projects later. It is advised to include trailhead and amenity development into the trail construction contract when possible, to achieve economies of scale. However, some grant sources only allow certain types of elements included in projects using their grants.

#### 2013 Location Study:

To initiate more detailed planning for the LVT, in 2013, a Location Study was completed for an approximately 12.5 mile area from Cook to Wakemup Campground. The Study was prepared by SRF Consulting Group with assistance from the University of Minnesota--Duluth for the Arrowhead Regional Development Commission and the Lake Vermilion Resort Association. It was a feasibility study for Segments 1, 1A, 1B and 2, on the western end of the proposed trail, from North Woods School and Cook to Head of the Lakes Public Access and Wakemup Campground. It considered alternative alignments, identified priority alignments, and estimated design and construction costs. The Study primarily considered routes along public roads, and included one potential off road route for Segment 2. It analyzed many factors, including public right-of-way, utilities, wetlands, steep grades, and scenic value. The study concludes that an independent trail separate from roadways is the most desirable alternative, and that the primary trail uses would be for recreational and fitness purposes, with commuting as a secondary use. However, it identifies a route along CR 24 as the preferred alignment for Segment 1, from Cook to Wakemup Hill Village Road area, and for Segment 1A, Wakemup Village Road area to Head of the Lakes Public Access, and a preferred off road alignment for Segment 2, from Wakemup Village Road area to Wakemup Campground, and an alternate route along County roads. Segment 1A is indicated along Olson Road E. between the North Woods School and the intersection of Olson Rd, Beatty Road and CR 24, but no alternative alignments were analyzed. This Study will be useful for trail segment planning, but was misleading because it did not sufficiently distinguish between “prescriptive” right of way and publicly owned right of way. The Right of Way specialists on County staff have since clarified that the “prescriptive” rights of way along the County roads in the Study extend only to the edge of the pavement, not 66 or 100 feet, as described in the Location Study. A trail along these County roads would require negotiation, approval and acquisition of an easement from each adjacent landowner through which the trail is proposed.

## **5.5 Trail Design**

Cross Sections:

The 2013 Study focused on potential trail alignments along roads, but considered several possible configurations, including:

- Independent, two way trail away from roads
- Multi-treadway trails, with a paved treadway for bicyclists and walkers, and a separate but parallel natural or gravel surfaced treadway for snowmobiles and horseback riders. Since the Arrowhead State Trail and other snowmobile trails travel through the same general area, this LVT does not need to accommodate snowmobiles. Horses are allowed on the Arrowhead Trail when not snow covered, so the LVT does not need to accommodate horses.
- Trail adjacent to roadways: These are commonly built in other states and counties because in places outside of St. Louis County, there are usually publicly owned rights-of-way that extend well beyond the road surface, upon which trails can be built without additional land acquisition. This is not the case for the County roads in the Lake Vermilion area, so there is no planning or cost advantage to building along a road. These locations are less desirable for recreational trail users.
- Bicycle Lanes or Shoulders: Bicycle lanes are a minimum of 4' wide, marked lanes on both sides of a road available exclusively for bicyclists traveling one way in the same direction as the adjacent motor vehicles. The disadvantages are that they do not accommodate pedestrians, and get used by motor vehicles for parking, or turning, or are ignored by motor vehicle drivers. Wide shoulders that are not marked as bicycle lanes can be used by bicyclists and pedestrians, but also get used for motor vehicle stopping, turning, parking, etc.
- "Share the Road" signs can be placed on any road, with or without shoulders, that is frequented by bicyclists or pedestrians. However, they are not very well understood by motor vehicle drivers, and do not provide bicyclists and pedestrians exclusive space to be.

The Joint Powers Board and Work Group intend to build the Lake Vermilion Trail as an independent trail with one, two-way treadway, away from roads as much as possible. The rationale for this is to maximize the trail user experience and scenic value of the trail. A typical cross section, shown in the attachment, which was included in the Location Study, has a 10 foot wide, paved treadway (5 feet for each direction of travelers) and a cleared, flat "shoulder" or clear zone that is 2 feet wide, on each side of the trail. Any trailside elements, even signs and mile markers, should be located completely outside of this clear zone. Trailside amenities like benches, picnic tables, interpretive signs, etc., should be outside of this clear zone as well, so that people sitting at benches or looking at signs are not standing or sitting in the clear zone.

## **5.6 High Priority Development Segments**

As of this writing, subcommittees have been working for over a year to plan Segments 1A and 7. The subcommittees have been set up for the first two high priority segments, intending to

develop a segment on the east and west ends of the trail. A third Subcommittee worked for about a year on a segment in the middle of the trail corridor.

#### West End Subcommittee:

This subcommittee first began in 2016 to analyze Segment 1, from Cook to the north, but quickly realized that this will be a difficult segment to develop due to the amount of wetlands in the area. The Subcommittee switched their focus to Segment 2, from Wakemup Village Road Area to Wakemup Campground. Base maps have been developed that show roads, property information, wetlands, and hydric (wet) soils from Wakemup Village Road area to the Camp Vermilion area. Subcommittee members have conducted field visits, and have had discussions with private landowners and public land managers about potential routes. The focus for the first segment to be developed on the west end has now shifted to Segment 1A, from Head of the Lakes Public Access to the Wakemup Village Road area, including Wakemup Hill, due to positive responses from landowners in this area. See the Segment 1A Development Feature section for more details.

#### East End Subcommittee:

A subcommittee was formed in 2016 to work on Segment 7, from the City of Tower to the State Hwy. 169/1/CR 77 intersection. Subcommittee members identified potential routes on basemaps, conducted field visits, and discussed potential routes with public land managers and private landowners. An important constraint in this segment is Highway 169. The Mesabi Trail trailhead is south of the Highway, and the trail needs to cross to the north side of Hwy. 169 at some point in this segment to continue to points to the northwest. See the Segment 7 Development Feature section for more details.

### **5.7 Development Goals, Strategies and Actions:**

Goal 1: Design and build a paved, non-motorized, multi-use trail that links the communities, neighborhoods and public recreational features from Cook to Tower/Soudan south of Lake Vermilion within twenty years, by 2038.

Strategy 1: Plan, design and develop trail segments according to the priority order in this document, unless constraints or opportunities warrant moving a segment higher or lower in the ranking.

Strategy 2: Develop the first three trail segments by 2023.

Action 2.1: Apply for acquisition and development funding for the first project in 2018 (Segment 7, LCCMR or Transportation Alternatives Funding).

Action 2.2: Begin construction of the first project by 2021.

Action 2.3: Apply for acquisition and development funding for the second project in 2018 (Segment 1A, Legacy funding.)

Action 2.4: Begin construction of the 2<sup>nd</sup> project by 2021.

Action 2.5: Apply for acquisition and development funding for 3<sup>rd</sup> project by 2020.

Action 2.6: Begin construction of the 3<sup>rd</sup> project by 2023.

Strategy 3: Complete construction of twenty miles of trail, or half the total trail miles, within ten years, by 2028.

Strategy 4: Locate the trail away from roads as much as possible, to maximize the trail experience and scenic value of the trail.

Goal 2: Provide a safe recreation and travel route for bicyclists, pedestrians and other trail users.

Goal 3: Promote awareness of the trail

Goal 4: Design the trail to meet applicable federal, state and regional trail and bikeway design standards and Accessibility Guidelines

## **5.8 Acquisition Plan**

For the LVT corridor to be owned and managed by the Joint Powers Board, the Board will need to acquire the rights to develop and manage a linear trail corridor. The trail will likely cross both public and private lands. The intention is to assemble a trail corridor on public land as much as possible, with connections to link the public parcels together across private lands. The subcommittees will contact private landowners personally as each segment is planned. The Board intends to work only with willing landowners, and will not use “condemnation” for the trail corridor. The Board also intends to stay away from intensely developed shoreline areas on the lake, where many houses and cabins exist on smaller lots. As depicted on the Lake Vermilion Trail Concept Map, the trail will reach the lakeshore at publicly owned land, such as the Head of the Lakes and Frazer Bay Public Access sites, and the DNR’s Wakemup Campground.

### **Corridor Width:**

The width of the trail corridor to be acquired for the LVT may vary. There are many different strategies to assemble a trail corridor. Trails built on former railroad corridors often have purchased the entire former railroad corridor, which is often at least 100 feet wide, sometimes 300 or more feet wide. When a trail project must assemble a corridor from many landowners, as is the case with this trail, the trail corridor is often much narrower. A 20 foot wide corridor is an absolute minimum, to allow for a 10 foot wide trail surface, and 2 foot shoulders/clear zones on each side. This leaves only 3 feet on each side beyond the clear zone for directional or interpretive signs, and maintenance of surrounding vegetation. Places where a trail “wayside”, a small rest area or overlook is desired, the corridor will need to be wider. A 25 – 30 foot wide

corridor is more practical, so that trailside vegetation can be maintained more than three feet on each side of the trail shoulders, and to make room for benches, picnic tables, interpretive signs, or other small “waysides” that may be added later. In some areas, it may be necessary or practical to acquire a wider corridor. For instance, on hills where grading is necessary to achieve a 5% or less grade on the trail, it may be necessary to acquire the entire width of the area that is to be disturbed. Some trail managing organizations purchase an entire parcel that is for sale, then retain a trail corridor and sell the remainder.

#### Type of Acquisition:

Trail corridors can be bought outright, or acquired with an easement. For example, the Minnesota DNR usually purchases its State Trail corridors, because the management of the trail corridor is less complicated and more permanent when it is entirely owned by the State. Other local and regional trails may acquire easements or property. When a corridor is purchased, the entire bundle of rights that are tied to the land are purchased. When an easement is either donated or purchased, only the right to own and operate the trail is transferred to the easement owner. The land remains the property of the original owner.

Many landowners in Minnesota have donated easements or property for trails. The Mesabi Regional Trail, which now consists of over 120 miles between Grand Rapids and Ely, has received donations for about 90 percent of their trail corridor.

Most government trail grants require that an easement purchased with their grant money, or a trail developed on an easement using their grant money, be of at least 20 years in duration. The County and State have different preferences for permission for trails to be developed by others, such as the Board, across the public lands they manage. MnDNR currently requires a lease, and St. Louis County an easement. The Board intends to primarily acquire easements. The Joint Powers Board intends to acquire trail easements that are at least thirty feet wide for a period of at least 20 years. The Board would prefer to obtain perpetual easements, which are recorded on the deed to the property. In some cases, the Board may agree to or request to purchase a corridor instead.

### **5.9 Acquisition Goals, Strategies and Actions:**

Acquisition Goal: Acquire a trail corridor for the entire Lake Vermilion Trail, through the acquisition of trail easements or property by 2035, working with willing landowners only. No condemnation will be used to develop the Lake Vermilion Trail.

Strategy 1: Acquire trail easements through donation or purchase, of a width sufficient to meet trail development and management needs, of a desired width of 30 feet or more and a minimum width of 20 feet.

Action 1.1: Work with public land managers to acquire trail easements through public land, following the review and approval process required by the land managing agency.

Action 1.2: During the planning stage for each trail segment, work with private landowners to locate and assemble a trail corridor, preferably through the donation or purchase of easements.

Strategy 2: Consider acquiring the ownership of a trail corridor segment, when the landowner and Board find it advantageous to do so, such as to take advantage of land for sale in a trail segment that is not yet being actively developed.

Action 2.1: Monitor the entire trail planning area for opportunities to purchase land for sale in advance of trail segment planning, when parcels are advertised for sale.

Action 2.2: If opportunities for corridor or easement purchase arise before land acquisition funding is available, consider partnering with the Parks and Trails Council of Minnesota or the Trust for Public Land for acquisition loans.

### **5.10 Development Features:**

#### **Development Feature: High Priority Segment 1A—Wakemup Village Road Area to Head of the Lake Public Access:**

A subcommittee is actively working on planning this segment in Beatty Township. This segment will be about 4 to 5 miles long, and will include Wakemup Hill as a feature of the segment. The trail will begin about ¼ mile north of the Head of the Lakes Public Access, which is on the western end of Lake Vermilion along County Road 24/Vermilion Drive about eight miles north of the City of Cook. Because the parking lot at the DNR Public Access is small, and is filled much of the time in the summer, the current plan is to work with the County and landowners north of The Landing Restaurant to use some of the existing gravel parking along the east side of CR 24 for trail parking. The trail would extend along CR 24 for a short distance to the south to the private road, Sunset Drive. A crossing of CR 24 will need to be coordinated with and approved by the County Highway Dept. The trail may head west along Sunset Drive, then south and west through some private property, some County-managed tax forfeit property, and some State Forest property to reach Wakemup Hill. The trail will extend to the top of Wakemup Hill, but it is undecided whether the main trail will ascend the hill or a spur trail, due to the steep slopes on the hillside and the location of the snowmobile trail. The snowmobile trail has a gravel surface, and will not be displaced. If feasible, the Lake Vermilion Trail will be constructed in a separate corridor to the top of the hill. Views of Sunset Lake will be possible from portions of the segment, and Wakemup Hill will be one of the highlights of the trail, offering views of Lake Vermilion, Cook and surrounding forest. This trail segment will end at CR 24. One option from Wakemup Hill to CR 24 is Winnifred Road, which is partially County-owned but is not maintained for motor vehicle traffic. The subcommittee is working with private landowners and State and County land managers to finalize a trail alignment. The subcommittee intends to apply for acquisition and development Parks & Trails Legacy (State) funds for this segment in 2018, through the Greater Minnesota Regional Parks and Trails Commission.

#### **Development Feature: High Priority Segment 7—Hwys. 169/1 and CR 77 Intersection to Tower**

A subcommittee has been actively planning this segment since 2016. This segment, about 4.6 miles long, will start on its eastern end at State Hwy. 135 south of the City's new harbor development and the Vermilion Country School. It will start where the City's paved trail will end. The City's trail will be built with the harbor development in 2018/19, and will extend directly from the Mesabi Regional Trail to 135. The LVT will then head southwest on City-owned land before crossing state land, in between Hwy. 169 and the DNR Area Headquarters building. It will then continue west across an additional City of Tower owned parcel, some Minnesota Department of Transportation Right of Way for Hwy. 169/1, and some private land to West Two Road (County Road 526). The trail may also use former 169 roadbed in this segment, now deteriorated and owned by the State. The trail may cross West Two Road and traverse the private land in between West Two Road and Hwy 169/1, continuing west, then cross West Two Road again, then cross some private parcels, and some State owned, County managed tax forfeit property to continue southwest to Bois Forte Enterprise Board property to reach the Y-Store, described in the Destinations section above. The subcommittee is actively working with private landowners, as well as the Bois Forte Tribal Government, MnDNR, the City of Tower, and the County to finalize an alignment for this segment. The Board applied for acquisition and development funds for this segment through the State LCCMR grant program in 2018. Depending on the outcome, the Board may also apply for funding from the federal Transportation Alternatives Grant Program, administered by MnDOT, in 2018-19.

#### High Priority Development Feature: Segment 5—Greenwood Town Hall to Fortune Bay

This section would be in the vicinity of County Road 77, heading east and south from the Greenwood Town Hall, which is at 3000 CR 77, on the north side of the road, between Sunset Road and Birch Point Road. This segment is about four miles long. South and west of CR 77 in this section are a number of contiguous parcels of County managed tax forfeit land, which would be a possibility for a trail corridor. The Arrowhead State (Snowmobile) Trail and some Iron Ore/Access Trails traverse this area, so will need to be avoided. Wetlands comprise a substantial amount of the tax forfeit land, so will also need to be avoided. If the trail is located on the south side of CR 77, finding a safe location for a trail crossing will need to be considered. In the second half of this segment, where CR 77 runs north—south, the road is surrounded by County managed tax forfeit land to the west, and Bois Forte land to the east. The Lake Vermilion Trail will connect to the Bois Forte trail system to reach Fortune Bay Resort, off of Reservation Road. The LVT Subcommittee will need to coordinate with Bois Forte Tribal Government staff and Council to determine whether and how much of this trail segment will be owned and managed by Bois Forte, and how much by the LVT Joint Powers Board.

#### High Priority Development Feature: Segment 6: Fortune Bay to State Hwys 169/1/Co. Rd. 77 Intersection

This segment would generally run parallel to Co. Hwy 77 from the end of Segment 5 to State Hwy 169, the location of the Y-Store. Some of the land along Co. Hwy 77 is State owned, some is owned by the Bois Forte Enterprise Board, and some is private. This segment includes difficult geographic features, including wetlands along both sides of Co. Hwy 77 and the falls and dam of the Pike River just southwest of the Co. Hwy 77 bridge over the river.

The “east end” subcommittee has inquired with MnDOT District 1 staff regarding the safest place to have a trail crossing of State Hwy 169/1. MnDOT staff indicated that the intersection of Co. Hwy 77 and Hwy. 169 would be a poor location, due to driver distraction with the 3 way intersection. The better location would be the southwest end of Pike Bay Drive. Therefore, this Segment 6 will need to continue east along the north side of Hwy 169 to Pike Bay Drive, and include a crossing on Hwy 169. (Segment 7, as described above, will be entirely on the south side of Hwy 169 from Tower to the Y-Store.)

As mentioned for Segment 5, the LVT Subcommittee will need to coordinate with Bois Forte Tribal Council & Staff to determine how much of this segment will be owned and managed by the Tribal Government, and how much will be owned and managed by the LVT Joint Powers Board. A Bois Forte owned trail already exists for part of the way along Reservation Road. The Tribal Government has indicated that they are supportive of the trail, and especially of completing Segments 6 & 7 to connect Fortune Bay to Tower.

#### Medium Priority Development Feature: Segment 1: Cook to Wakemup Village Road Area

This segment was analyzed in detail in the 2013 Location Study, which recommended a route along South Beatty Road to the intersection with County Road 24/Vermilion Drive, then continuing north along CR 24 for the remainder of the segment, about 5.7 miles total. The 2011 Plan suggests that there is a possible route in the northern part of this segment along an informal hiking trail. Other off road options will be considered. North of CR 115 there is a substantial amount of County managed tax forfeit land and State Forest land west of CR 24, through which a trail corridor may be found. The Arrowhead State Trail and Cook Area (Snowmobile) Trails traverse this area. However, there are also substantial amounts of wetlands and peat bogs that will need to be avoided. If the trail needs to cross wetlands or bogs, floating boardwalks are an option that have been used on trails with these conditions, where solid ground is too far underground to be practical for standard boardwalk posts. (See the Design and Ecological sections for more information.)

In Cook, crossing active railroad tracks at-grade is a concern, and will need to be negotiated with the rail line. The MnDOT Rail Division may also be of assistance. Railroad companies do not like to add new crossings, so crossing the trail over the railroad at an existing, signalized road crossing is more likely to be approved. Avoiding crossing the railroad tracks with the LVT should also be considered.

It has not been decided where a trailhead for the LVT will be within the City of Cook. The Subcommittee will need to work with the City to identify the best location. Ideally, it would be a park that already has parking, restrooms and water fountains, such as the Cook Community Center/Doug Johnson Recreation Area. Additional parking may be needed as trail use increases after trail construction. The City park on River Street adjacent to the City Hall is another option, with the advantage of bringing visitors directly into the Cook business district.

### Medium Priority Development Feature: Segment 2: Wakemup Village Road Area to Wakemup Campground

This segment, about 4 miles long, has already been analyzed in the 2013 Location Study, which identified an off-road route that generally follows a ridgeline south of the lake. This concept was also studied and refined by the “west end” Subcommittee in 2016-17. A few DNR managed State Forest parcels are scattered through this area, and several tax forfeit parcels exist around the eastern end of Longfellow Road. Subcommittee members have talked to some interested landowners, and will revive the planning for this segment after the higher priority segments are complete. The private, church-owned Camp Vermilion comprises several parcels in this segment; camp Vermilion staff have been very cooperative in identifying potential trail routes. At this writing, several parcels owned by Potlatch Corp. are for sale. The 2013 Location Study identifies a route adjacent to Vermilion Lake Road/CR 431 and Wakely Road/CR 78/CR 478, which should continue to be considered as well. However, the road rights of way are only “prescriptive”, so are no wider than the road surface.

The end of this segment will be at the State DNR managed Wakemup Campground & Day Use Area (see Destination section for a description.) This site is managed by the Park staff located at Bear Head Lake State Park, east of Tower. The Subcommittee for this trail segment will need to coordinate with the DNR Parks & Trails Staff to identify and obtain approval for a trail route through this property.

### Medium Priority Development Feature: Segment 3A: Oak Narrows Spur

This segment is about 2.0 miles long, and would be a dead-end or spur trail leading off of the main Lake Vermilion Trail on the Oak Narrows peninsula. During the development of the 2011 Plan, members of the public specifically asked that Oak Narrows and Timbuktu area businesses and residents have a safe connection to the Lake Vermilion Trail. The Oak Narrows Road is a narrow, gravel road with several hills and curves. Area residents and businesses stated that the road has significant pedestrian and bicyclist use, and safety is a concern. However, since this segment would serve a relatively smaller number of potential trail users than the main trail, this was determined to be a low priority. There is a scenic overlook area on Oak Narrows Road east of Polley Road, a short distance east of the west end of this segment, that could be a feature on the trail, but is surrounded by private land.

### Medium Priority Development Feature: Segment 3B: Wakemup Campground to Intersection of Beatty & Oak Narrows Roads

This segment is about 3 miles long. South of Beatty Road/CR 540 and Oak Narrows Road, away from the lakeshore, there are many parcels of County managed tax forfeit land and Sturgeon River State Forest land. The Arrowhead State Trail traverses this area, a mile or more south of the lake. The Board will need to work with County and DNR Staff to identify potential routes on the public land. The eastern end point of this segment may change, because there is no public land at this road intersection for a trailhead or parking.

### Medium Priority Development Feature: Segment 4: Frazer Bay Public Access to Greenwood Town Hall

A Subcommittee began analyzing this segment, about 3.7 miles long, for possible trail routes in 2017, but is no longer active. Some County roads exist in the area. Fraser Bay Road/CR 418, Thomas Road and Breezy Point Road/CR 674 are close to the lake, but are surrounded by many small, private properties. The right of way widths and ownership information of non-County roads will need to be obtained from the County. A large, platted subdivision, Vermilion Grove, extends on both sides of CR 115, and the streets are still in public ownership, although very few lots have been sold. Informal trails exist through this area. This may be a possible area for the LVT. Most of the land south of CR 115 in this segment is State and County managed, so may provide a good corridor option. The Arrowhead State Trail continues traversing this area, about 1 mile south of CR 115 on State & County land. The State & County lands include substantial wetlands, but a route is likely possible north of the Arrowhead State Trail and south of CR 115. Another route to consider is along CR 115. However, if the trail is to cross CR 115, finding the safest crossing locations for sight distances, etc. needs to be considered. The preferred location for the trail segments east and west of this segment should be considered, to minimize road crossings.

#### Medium Priority Development Feature 6A: Hoodoo Point to Fortune Bay Ferry Route

This segment involves no trail construction, but is a unique idea to operate a bicycle ferry from Hoodoo Point in the City of Tower, to the Fortune Bay Marina on Pike Bay, on Bois Forte Tribal lands. Existing City of Tower Trails lead to Hoodoo Point, and existing Bois Forte trails lead to the Marina. This route would cut off about 8 miles of trail, or could be used as part of a loop trail. If a dock were to be built or used for this purpose on Echo Point, the boat trip would be very short. This could be an opportunity for a private enterprise, such as the van shuttles that exist to take hikers back to their cars along the Superior Hiking Trail, or on linear bicycle trails to take bicyclists back to their start point. Options include offering this ferry service for special events, or just on summer Saturdays or weekends, through a contract with the Board or as a private ferry service.

#### Medium Priority Development Feature: Segment 8: Hoodoo Point to Breitung Township Line

This trail segment is only about ¼ mile long. A City of Tower Trail exists north of Hwy. 169 from the downtown area to the Hoodoo Point Campground. The Township of Breitung has an existing trail that extends past McKinley Park toward Hoodoo Point. Breitung plans on completing the trail toward Hoodoo Point within their Township in the next few years. That leaves only about ¼ mile within the City of Tower. The Joint Powers Board has agreed to include this trail gap as part of the Lake Vermilion Trail that will be owned and managed by the Board, which the City had requested. With this gap completed, Lake Vermilion State Park, Soudan Underground Mine State Park, the Mesabi Trail, McKinley Park & Campground, Hoodoo Point Campground, Tower and Soudan will all be connected by trail.

#### Low Priority Development Feature: Segment 1B: Cook to North Woods School

This segment was not in the 2011 Trail Plan, but was added to the 2013 Location Study, and is 4.3 miles long. No preferred alignment was selected in the 2013 Study, but one route was analyzed: along Olson Road E., a public, gravel road with a speed limit of 55. The segment would include two CN railroad crossings and a crossing of Flint Creek, as well as a crossing of

State Highway 53. Olson Road is a low volume road, with an Average Daily Traffic of 90 vehicles. Wetlands exist along 39% of Olson Road between Hwy. 53 and Beatty Road. This segment was added late in the 2013 planning process to provide an alternative transportation route for students and staff at the public, K-12 North Woods School. The school was located between Cook and Orr to serve students from both communities, but is not near a concentration of either residential or commercial land uses. The student enrollment for grades K-12 was 528 in 2016/17, however, some of these students live west of the School. This segment was designated as a low priority because it would serve a relatively low number of potential trail users. State Safe Routes to School funding and federal Transportation Alternatives funding (which includes the federal Safe Routes to School program) are possible funding sources for this segment.

#### Low Priority Segment 3C: Intersection of Beatty & Oak Narrows Roads to Frazer Bay Public Access

This segment, roughly 5 miles long, is a low priority due to the relatively low population and sparse tourist related development in the area. South and west of Oak Narrows Road and Reser Bay Road are many contiguous parcels of County managed tax forfeit land and Sturgeon River State Forest lands, which may offer a good trail route. Frazer Bay Public Access is a DNR managed property on Frazer Bay Road/CR 418. It is an isolated parcel of State land surrounded by private land. To reach this site from the large expanse of public land farther south, the Board will need to work with private landowners to find an acceptable route. One route to consider is along Frazer Bay Road/CR 418 north of CR 115. An alternative to connecting to the Frazer Bay Public Access site would be to construct a trailhead on State or County land in the same vicinity but south of CR 115.

#### Removed Development Feature: Segment 4A: Greenwood Spur

This segment, about 3.6 miles long, a proposed spur trail from the main trail to Moccasin Point, was included in the 2011 Trail Plan because Trail Committee members from the area asked for a safe connection between the Greenwood Walking and Biking Trail at the end of Moccasin Point and the main Lake Vermilion Trail. The Plan did note that the segment of CR 77 between CR 115 and Moccasin Point Road was resurfaced in July 2011, and three to four foot wide, paved shoulders were added. This improves the safety for walkers and bicyclists on the road. The 2011 Plan noted that this segment would be a very low priority. **In this Plan update, this segment has been removed from development consideration.** Official bike lanes need to be 4' wide. If the shoulders are 4', the Board or Township could request the County to sign the shoulders as bicycle lanes. However, if the shoulders are used by a significant amount of pedestrians as well, then the road could be signed with "Share the Road" or similar language instead. At a minimum, directional signage should be added at the intersection of the LVT and this portion of Co. Hwy 77 to direct trail users to the Greenwood Trail.

## **Chapter 6: Implementation Plan**

This Implementation Plan is a five year, strategic plan to develop the new Joint Powers Board organization, and initiate trail development and operations.

**6.1 Organizational Development:**

A Joint Powers Board has been formed to develop, own and manage the Lake Vermilion Trail. A Joint Powers Board is essentially a new government entity with very limited functions. The Board’s sole purpose is the Trail, and it does not have taxing authority. The Joint Powers Agreement forming the Joint Powers Board was signed by the following entities in 2017. Each government then assigned a representative to the Board, and the first Board meeting was held in February 2018. See the attached Agreement for more details.

(Joint Powers Board Members, from west to east):

- City of Cook
- Township of Beatty
- Township of Owens
- Township of Greenwood
- Bois Forte Tribal Government
- Township of Vermilion Lake
- Township of Kugler
- City of Tower

St. Louis County has been asked to join as the local government representative for two unorganized townships, 62-17 and 63-17 along the route, but the County Commission has not yet reached a decision on whether to sign on to the Agreement.

The former Steering Committee, an informal committee that has been in existence in some form for twenty or more years, and has been active continuously since 2011, was transitioned into the Work Group when the Board was formed in February 2018. This Work Group includes voluntary members that are generally not appointed by their local governments. The Work Group will continue to assist the Board with trail development and management tasks, such as fundraising, promotions, events, and detailed trail development planning.

Subcommittees have been formed for several functions, and include Board members, Work Group members, and other trail volunteers. Existing subcommittees include:

- “East End” Trail Development
- “West End” Trail Development
- Greenwood Area Trail Development—currently inactive

A Subcommittee will be formed to plan and develop each trail segment, in priority order. The Subcommittees will recruit additional members who live, work, or have a particular interest in the segment being planned.

Additional subcommittees to be formed are:

- Fundraising
- Events and Promotions

## Public Relations and Marketing

The Board and Work Group recognize that as trail development starts, and when trail segments open, it will be difficult to manage all of the trail related duties with an organization run entirely by volunteers. For several years, in fact, the Steering Committee has had the assistance of planning staff from the Arrowhead Regional Development Commission (ARDC) and the Rivers, Trails and Conservation Assistance Program of the National Park Service to help facilitate meetings, organize committees, develop the Joint Powers Agreement and master plan, and other tasks. The ARDC staff assistance has been possible through donations and grants.

As the project moves into the implementation stage, it would be most effective for the Board to hire its own staff, most likely through contract, to first manage the design stage of development projects, once grants are received, then to manage operations and maintenance as well as other duties once there are trail miles on the ground.

### **6.2 Organizational Development Goal, Strategies and Actions**

Organizational Development Goal: Continue to develop the Lake Vermilion Joint Powers Board as a government entity, supported by a volunteer system consisting of the Work Group and Committees, to successfully develop, own and manage the Lake Vermilion Trail.

Strategy 1: Convene the Joint Powers Board as the decision making body for the Lake Vermilion Trail, according to the Joint Powers Agreement.

Action 1.1: Develop bylaws to complement the Agreement and specify how the Board will conduct its business, including addressing: Board member terms, and election of officers.

Action 1.2: Ensure that each government entity that has signed the Joint Powers Agreement continues to have an appointed Board member. The appointment of an alternate is also recommended.

Action 1.3: Provide new Board members with orientation and training as needed when they join the Board.

Action 1.4: Ensure that Board meetings are open to the public and are advertised as required by law.

Action 1.5: Transition from using the City of Tower as the fiscal agent for the trail to the Board handling its own finances by 2019.

Action 1.6: Ensure proper liability insurance is in place prior to initiation of any Trail construction.

Strategy 2: Continue the Work Group as an advisory group to the Board, to assist the Board with trail planning, fundraising, promotions, and other functions.

Action 2.1: Convene the Work Group at least quarterly; monthly is recommended for the first several years as the Board and Trail become established.

Action 2.2: Elect a chair, vice chair and secretary to manage the work group and facilitate meetings

Action 2.3: Recruit additional work group members, considering skills needed, such as fundraising, marketing, knowledge of local area and residents, etc.

Action 2.4: Ensure that there is communication and coordination between the Board and Work Group by assigning a Work Group member as a Board liaison, until such time as a staff person performs that role.

Strategy 3: Create and manage Subcommittees, either permanent or ad hoc, as needed, to assist in completing the work of the Board.

Action 3.1: Continue the West End and East End Trail Development Subcommittees to plan high priority trail segments 1A and 7, respectively.

Action 3.2: Create subcommittees for fundraising, and events/promotions in 2018

Action 3.3: Initiate a subcommittee for a 3<sup>rd</sup> high priority segment by 2019.

Strategy 4: Hire staff, either on contract or as employees to conduct day-to-day management of the trail development and operations, as funding allows.

Action 4.1: Consider hiring a fundraiser or grant writer in 2018/19.

Action 4.2: Hire a part time staff person to manage trail development grants and contracts, and assist the Board by 2019.

Action 4.3: Hire a full time Executive Director to guide fundraising and manage trail development and operations by 2020.

Strategy 5: Determine a strategy to maintain the trail before the first trail segment is open to the public in 2020.

Action 5.1: Start an Adopt A Trail Program for volunteer assistance with maintenance tasks by 2021.

Action 5.2: Consider contracting out trail maintenance work with either the Mesabi Trail or a government Public Works staff in the vicinity, especially in the first years when Lake Vermilion Trail mileage is low.

Action 5.3: As the Trail develops; consider hiring maintenance staff for the Trail.

### **6.3 Fundraising**

The Steering Committee has been successful in raising funds to support trail planning for several years. For the last two years, the City of Tower has served as the trail project's fiscal agent. Funds have been raised through grants and donations, mostly from MnDOT, IRRRB, the Regional Sustainable Development Partnership, and the Lake Vermilion Resort Association. The Bois Forte Reservation Tribal Government donated \$400 towards the winning logo prize and Lake Country Power donated \$500 for brochures and promotional items. Donations have also been solicited from private individuals by marketing at community events, and through the Lake Vermilion Trail website and Facebook page.

Now that the Board is established, the Board and Work Group will need to increase its fundraising efforts to design and construct the trail segments, and to cover operating and maintenance expenses once trail segments are opened for use.

A multi-faceted approach to fundraising is needed to raise sufficient funds for trail development and management. Fundraising efforts should include:

- Board Membership Dues from Member Governments
- Individual Donations
- Corporate and Business Donations & Giving Programs
- Government Grants
- Private Foundation Grants
- Community/Public Foundations

Board Membership Dues: The Joint Powers Agreement requires that each government member pay \$1 for each resident in their jurisdiction per year, based on the latest Census figures. This will raise approximately \$4500 per year. When the Agreement was presented to governments for consideration the Boards/Councils were told that the Steering Committee intended not to request additional funding from the individual member governments for assistance in funding the Trail. The Board is not bound to this statement, but should manage its finances such that requests to Board Member governments are not necessary.

Individual Donations: In Minnesota in 2012, among all charitable giving, individuals give 72% of the money given to charities. This is a funding source that is often undervalued by non profit organizations. The Steering Committee has solicited individual donations through social media and promotion at local events. Future plans to raise funds from individuals include: donation request letters to individuals and businesses, and online donation campaigns through GIVEMN, an annual statewide campaign in November. The Joint Powers Board must first create a financial system so it can be its own fiscal agent before it can be eligible to participate in some of the online campaigns. As of this writing, the City of Tower is acting as the Lake Vermilion Trail's fiscal agent. Once the Board establishes its own financial system and is registered as a

government entity, then donations can be made directly to the Lake Vermilion Trail Joint Powers Board. Donations to government entities are tax deductible.

Another option to be considered in the future is to establish an affiliated not for profit entity that can accept donations for memberships as a “Friends of the Trail” organization. The regional Mesabi Trail operates on this model. The Mesabi Trail is owned and managed by a government entity, and has an affiliated non profit to conduct fundraising activities and host events. The Lake Vermilion Trail Board may want to consider establishing a similar non profit entity that has tax deductible 501(c)3 status in the future. A non profit entity is eligible for some private grants for which government entities are ineligible. Another advantage is that some individual and corporate donors prefer donating to non profit organizations instead of governments, even though both are tax deductible.

Corporate and Business Donations, in Minnesota in 2012, this category represented 13% of all charitable giving. The Steering Committee has not pursued these types of donations yet. However, the Board needs to look beyond the businesses in the immediate area to pursue soliciting funds from larger national or multi-national corporations. Many of these types of corporation have links to or do business in Northeast Minnesota.

Government Grants: This is the primary source for trail development funding in Minnesota, and includes State and Federal grants. All MN State grants are listed at: <https://mn.gov/grants/> and all federal grants are listed at <https://www.grants.gov/> The Parks & Trails Council of MN now publishes an annual resource guide on Grants for Your Park or Trail, available on their website at: [www.parksandtrails.org](http://www.parksandtrails.org)

**Government Grants Available for Trail Development:**

<u>Grant Source for Trails</u>	<u>Annual \$ Available Statewide (approx. as of 2017)</u>
Parks & Trails Legacy	\$7.5 million
DNR Local & Regional Trail Grants	\$1 million
Transportation Alternatives	\$7.5 million
LCCMR (Land Acq-Habitat & Rec)	\$16.4 million
DNR Outdoor Recreation	\$380,000
TIGER (Transportation)	\$500 million (nationwide)
State Bonding	1-2 regional trail projects/biennium
IARRB	
Private Grants	

Private Foundations: The Steering Committee has not solicited funding from this type of foundation. The Minnesota Council on Foundations offers a directory of Minnesota foundations, which can be accessed at public libraries that are designated as grant resource libraries, for free. The Foundation Center has a national Foundation Directory Online that can also be accessed for free at public grant resource libraries in Minnesota.

Community/Public Foundations: Community foundations are publicly supported and are operated by and for the benefit of a specific geographic community, population group or area of interest. These foundations all actively fundraise and pool the funds of many donors to enable them to make larger investments and increase their returns. From a brief search, it appears that only the Northland Foundation and the Minnesota Community Foundation (statewide) operate in the northern St. Louis County area.

Trail User Pass: Another option to consider is a fee for using the trail. The regional Mesabi Trail charges a “Wheel Pass” to bicyclists, skaters or skateboarders, but no fee to pedestrians. Their charge is \$15 for an annual pass and \$5 for a 3-day pass, available at several local businesses and at self-pay boxes along the trail. Mesabi Trail staff have indicated that the revenues from the passes are only marginally more than the costs of maintaining the payment system and collecting the fees. Minnesota DNR has also considered charging a trail fee to use their state trails, but at present does not charge one. The Board may want to consider this as a possible revenue source. A voluntary, annual pass, for which a sticker, pin, or other incentive is given, is another option.

Events: Events both on and off of the trail can generate funds. Runs, bicycle rides, and walks can be located on the trail once a segment is built, but could also be initiated before the trail is built. Events take a lot of time and effort to coordinate, which must be considered. However, once an event is established, can raise substantial funds. The Paul Bunyan Cyclists have to limit their Tour of Lakes Ride in the Brainerd area to 1500 people, and tend to fill the ride early. A paid ride coordinator is an option, which is done for the St. Paul Classic bicycle ride, which makes a profit for the Bicycle Alliance of Minnesota. Most rides are partially on streets and highways. Other trending events are: “mud runs”, obstacle courses, “Amazing Race” contests, and unique triathlons. A new type of indoor events is having a local microbrew name a beer after the Trail (with a percentage of the proceeds going to the Trail.) Events outside of the local area in more populated areas, such as in Duluth, the Iron Range cities, or the Twin Cities, should be considered as well.

#### **6.4 Fundraising Goal, Strategies and Actions:**

Fundraising Goal: Raise sufficient funds on an ongoing basis to meet the trail development, operational development and other goals listed in this Plan.

Strategy 1: Raise \$100,000 in 2018 for staffing, trail planning, promotions, preliminary design and other management costs, not including acquisition and development costs.

Action 1.1: Begin collecting dues from member governments in 2018

Action 1.2: Consider partnering with the Range Runners to hold a half marathon fundraising event in July 2018

Action 1.3: Consider partnering with the Iron Range Off Road Cyclists to hold a winter cycling event in 2018/19, such as a bicycle ride on the ice road.

Action 1.4: Continue having a presence at community events in the area annually to increase awareness about the trail project, and to solicit individual donations

Action 1.5: Conduct at least two annual online fundraising drives, such as GiveMN in November.

Action 1.6: Seek businesses willing to be annual Trail Sponsors.

Strategy 2: Raise \$150,000 in 2019 for planning and management, not including acquisition and development costs.

Action 2.1: Continue fundraising efforts in 2019 through a variety of initiatives, including donations, grants, and events, to be led by the Fundraising Committee.

Strategy 3: Raise \$200,000 in 2020 for planning and management, not including acquisition and development costs.

Action 3.1: Engage Trail staff and volunteers to increase the efficacy of fundraising efforts through a multi-pronged approach, to be led by the Executive Director.

Strategy 4: Raise \$150,000 in each of the years 2021 -- 2023 for planning and management, not including acquisition and development costs.

Action 4.1: Maintain fundraising results at a consistent level to sustain the trail effort.

## **6.5 Acquisition and Development Costs To Date**

Acquisition and Development Costs to Date \$0

Investments to Date \$202,500

Parks & Trails Legacy Funding to Date \$0

Non-parks and Trails Legacy Funding to Date \$0

### **Local and Other Funding Sources**

Regional Transportation Advisory Committee	\$ 26,000
Lake Vermilion Resort Association	\$ 21,000
IRRRB	\$ 13,000
Regional Sustainable Development Partnership	\$ 10,000
Economic Development Administration	\$ 8,000
Legal review by JPB member governments	\$ 6,000
Lake Country Power Round Up Program	\$ 500

Bois Forte Tribal Council	\$ 400
Private donations	\$ 2,600
In Kind staff assistance (NPS) & volunteer time	<u>\$ 115,000</u>
TOTAL	\$ 202,500

Total Investments to Date: same as above

## **6.6 Acquisition and Development Cost Projections**

Trail development costs vary by many factors, including:

- Number of expensive elements (bridges, boardwalks, retaining walls, etc.)
- Amount of grading needed
- Road crossing infrastructure (signals/flashing beacons, etc.)
- Land acquisition costs
- Wetland mitigation
- Price of oil (for asphalt)

### Additional Costs:

#### For Trailheads:

Where possible, locate trailheads at existing public parks to minimize the need for additional development.

- Land acquisition
- Parking lots
- Interpretive signs/kiosks
- Directional signs and maps for trailhead and roads leading to it
- Water fountains, restrooms/portable toilets
- Benches, landscaping, picnic tables, etc.

#### For Trail Rest Stops/Waysides:

- Interpretive signs
- Benches
- Maps

When designing the trailheads and wayside exhibits, materials should be chosen that will be vandal resistant and of commercial grade. Fire resistance is another consideration. If prescribed burns are done near part of the trail corridor, temporarily removing any facilities, such as signs, that are not fire resistant should be considered. The Board may decide to accept donations of some elements, such as benches. However, standards should be set to make sure that the donated element is of commercial grade, meant for public use. Elements intended for private use are often not durable enough to withstand the use levels on public facilities.

Cost projections were completed for all of the trail phases in the 2011 Trail Plan. These are rough estimates based on general trail costs, since the exact alignment for the trail corridor has

not been determined yet. The estimates were updated and refined for the western segments in the 2013 Location Study.

### **Cost Estimates by Segment**

<u>Segment</u>	<u>Cost Estimate</u>	<u>Source of Estimate</u>	<u>Adjusted to 2018 Dollars</u>
Segment 1 and 1A	\$2,594,000	2013 Location Study	\$2,872,000
Segment 1B	\$ 967,500	2011 per mile cost	\$1,071,000
Segment 2	\$1,817,000	2013 Location Study	\$2,012,000
Segment 3	\$1,800,000	2011 Trail Plan	\$1,993,000
Segment 3A	\$ 450,000	2011 Trail Plan	\$ 498,000
Segment 4	\$ 932,500	2011 Trail Plan	\$1,033,000
Segment 5	\$ 900,000	2011 Trail Plan	\$ 997,000
Segment 6	\$ 877,500	2011 Trail Plan	\$ 972,000
Segment 6A	\$ 100,000	2011 Trail Plan	\$ 111,000
Segment 7	\$ 900,000	2011 Trail Plan	\$ 997,000

The 2011 costs do not include engineering costs or corridor acquisition, and are based on an average trail cost of \$225,000 per mile. Adjusting for inflation, the costs per mile are now about \$250,000 per mile in 2018. The 2013 estimates are more accurately based on line item costs, but are based on the preferred alignment at the time. The 2013 estimates also do not include engineering or corridor acquisition. Engineering is generally an additional 20% of the construction cost. A recent trail project in the vicinity cost \$300,00 per mile for construction only. More realistic estimates that include planning, design, and engineering are more likely to be in the \$400,000 to \$900,000 range per mile, especially if expensive elements are required, such as bridges or boardwalks. A 2018 estimate for acquisition, design and construction of the 4.6 mile Segment 7, including some trailhead and trail wayside amenities, is \$1,814,000. Because the construction will be phased over about 20 years, cost estimates derived now, especially before the trail alignments have been determined, will not be accurate. It is a rough idea only of what the entire trail would cost if it were to be developed now.

For each trail segment, preliminary cost estimates, for fundraising purposes, will be derived by an engineer once the trail segment alignment is finalized. These estimates are based on line item costs at the time the estimate is being made. Trail alignments and other elements of the trail project may change during the design and permitting phase of the project, so cost estimates need to be adjusted then. Bids received for construction are as accurate as possible, but, even then, additional costs may be incurred if unexpected difficulties are discovered during construction. Although many trail grants do not allow “contingencies” as a grant expense, it is best to budget for contingencies in addition to the cost estimate or bid.

## **6.9 Acquisition and Development Phasing Plan**

See Development Goals, Strategies and Actions above.

#### **6.10 Cost Projections for Implementation Plan**

See above.

## **Chapter 7: Maintenance/Operations Plan**

### **7.1 Maintenance**

While construction of the Lake Vermilion Trail will aim to construct quality trails that minimize physical deterioration, year-to-year maintenance will play an important role in the long-term success of trail quality.

In summer, this maintenance will include reopening the corridor from encroaching vegetation or other obstructions, sweeping, controlling erosion, weed whipping, leaf blowing, and rehabilitating pavement as needed. Maintenance will be managed by the Joint Powers Board with assistance from volunteers, through an Adopt-A-Trail program that is to be established. . Volunteers are generally asked to perform maintenance tasks that do not require motorized equipment, such as picking up trash, monitoring & reporting maintenance needs, and removing small debris from the trail surface. Liability for volunteer work, in case of accidents involving volunteers, and the work performed by volunteers will need to be considered as the Adopt A Trail program is developed. Volunteer training and oversight will also need to be considered. A system for managing individuals and groups of volunteers should be set up. A trail executive director will also be hired to manage these tasks on behalf of the Joint Powers Board. A rough estimate of maintenance activities overall would range between \$1,000 and \$2,000 annually per mile, which would accumulate to \$40,000 to \$80,000 per year for a 40-mile trail system; since volunteers will be utilized for a portion of this work, this "sticker value" may be higher than actual maintenance costs will be, but would go toward salary of a trail executive director as well. To off-set these costs, fundraising efforts led by the Lake Vermilion Trail Work Group and the trail's executive director will be held throughout the year. In winter, the trail will be open to public use, but likely will not be maintained (see discussion under Trail Uses above). If there is enough interest from the Board and the community, some segments may be groomed in the winter. Grooming could entail different operations, depending on the use desired: track setting for classic cross country skiing; packing for snowshoeing or skate style skiing, or plowing for walking. These decisions will be made by the Board on a case by case basis for each segment, and will depend on financing and equipment available, and trail user interest.

Trails and trailheads need periodic maintenance in order to remain a safe and enjoyable place for people to recreate. The amount of maintenance that a trail receives depends on many factors, including usage type and amount, terrain conditions, trail design and construction, weather, and budgets. The Lake Vermilion Trail will be maintained by the Joint Powers Board. The Board may contract out to other governments or private operators who have maintenance

equipment and staff until such time as enough trail miles are built to warrant a maintenance staff on its own. Options for major maintenance tasks include: contracting with government public works departments in the vicinity, contracting with private contractors, hiring maintenance staff and purchasing equipment, or considering a maintenance agreement with the Mesabi Trail.

Below are common maintenance tasks, and the target level of maintenance for the Lake Vermilion Trail. Actual maintenance schedules may vary, depending on factors such as a high level of usage, storm events, or damage due to illegal uses.

**Hard Surface Trail Maintenance Needs**

	<b>Target Frequency</b>
Mow shoulder If grass: If planted with natives:	Every 7-15 days Annual
Reseed shoulder, repair damage	As needed
Pick up litter	During mowing
Inspect Trail: (condition of surfaces, bridges, railings, signage, hazard trees, downed limbs, etc.)	Annually In spring and after major storms
Remove downed trees/ limbs	Remove as soon as possible
Sweep trail surface	Once in spring, once in fall, and after major storms
Trim/remove encroaching vegetation	Annually in spring or late fall
Maintain & update signs & maps	As needed; inspect annually
Repaint pavement markings (center lines, safety warnings, mile markers)	Annually or as needed
Inspect & clean culverts/drainage structures	Annual inspection & cleaning
Maintain lighting, if applicable	As needed (no specific trail lights are planned as of this writing)
Remove graffiti	Within 24 hrs if offensive, 10 days if not offensive
Maintain trailhead/access point amenities	Monthly inspections, repair as needed
Maintain bridges, boardwalks, fences & railing	Annual inspection and after major storms, repair/replace as needed

Repair flood and rain damage	As needed
Maintain trees in trail corridor (tree health, hazard tree removal)	As needed
Minor repairs: Repair or patch minor cracks & edge damage, fill potholes, etc.	Inspect in spring, repair as needed
Seal coat (asphalt)	After 6-9 years
Major rehabilitation: Repave asphalt (usually added to Capital Improvements budget)	As needed
Minor resurfacing & fill (for crushed stone surfaces)	As needed
Major resurfacing or regrading (crushed stone or similar surface)	As needed
Winter Snow removal or winter trail grooming	None

#### Common Trailhead Maintenance Needs

	Target Frequency
Maintain parking lot (surface, striping, lighting, etc.)	As needed
Clean restroom/portable toilet	Daily
Maintain restroom lights, water, etc.	As needed
Upkeep & update information kiosk & other signs	As needed; inspect annually
Trash receptacles	Daily
Water fountain/spigot	Daily cleaning
Picnic tables & benches	Annual inspections
Vending machines	Weekly
Access control (bollards, gates, etc.)	As needed
Landscaping planting, seeding & maintenance	Monthly or as needed

To also aid in maintenance and operations of the Lake Vermilion Trail, potential trail users identified policies for trail system use. These policies include restricting trail use to non-motorized traffic. Signs will be posted at trailheads and at trail intersections specifying allowed uses. Bollards or gates that restrict larger equipment but allow pedestrians, people in

wheelchairs and bicyclists to pass are possible. If problems arise with use by those uses not allowed, the Board and staff will address the issue at that time. If bollards are used, a warning pattern should be painted on the trail surface to warn trail users of the obstruction in the trail (see Appendix.) If gates are used, they must not restrict access to allowable uses, and should be moveable or removeable so that maintenance vehicles can access the trail.

In addition to maintaining the trail and trailhead, the Board will maintain the easement corridor. This will include:

- Monitoring the trail corridor for encroachment; illegal uses; hazardous conditions such as dead trees or hanging tree limbs; and invasive species
- Coordinating with private and public landowners regarding the easement documentation, including time extensions as necessary
- Coordinating with landowners regarding any issues caused by trail users, such as trespass onto private land or privacy concerns. Situations will be handled if they arise. Options include boundary markings, no trespassing signs, planting dense vegetation near the easement border, fencing, etc.

**7.2 Maintenance Costs**

Annual Routine Maintenance and Operations Cost Total

\$1000 to \$2000 annually per mile

Maintenance costs are anticipated to start in 2020 with 4 to 5 miles on the ground (Seg. 7) Maintenance costs will increase in 2021 with the addition of Segment 1A, about 4 miles Costs will increase again in 2023 with the addition of a 3<sup>rd</sup> segment, expected to be Segment 5, about 4 miles.

Projected Maintenance Costs in 2018 Dollars

<u>Year</u>	<u>Total Trail Miles</u>	<u>Total Maintenance Cost</u>
2018 – 2020	0 Miles	\$0
2020	5 Miles	\$5000 -- \$10,000/year
2021-22	9 miles	\$9000 -- \$18,000/year
2023	13 miles	\$13,000 -- \$26,000/year

**7.3: Maintenance and Operations Goals, Strategies and Objectives**

Maintenance & Operations Goal: Manage and operate the Lake Vermilion Trail, trailheads and trail waysides to provide a safe and enjoyable trail user experience for the allowed trail uses.

Strategy 1. Perform regularly-scheduled trail corridor and trailhead monitoring and maintenance.

Action 1.1. Follow a detailed maintenance schedule with assigned roles for staff, contractors and volunteers.

Action 1.2. Establish a volunteer Adopt A Trail Program to assist select trail maintenance tasks, including a volunteer training and documentation system.

Action 1.3. Explore options to partner with the St. Louis & Lake Counties Regional Railroad Authority and Mesabi Trail, and other government agencies or private contractors for short-term or long-term maintenance

Action 1.4: Regularly spaced signage should be installed to provide contact information to trail users to report any issues that require attention.

Action 1.5: Maintain coordination with public and private land owners/managers through which the trail corridor passes, and address any concerns that arise promptly.

#### **7.4 Ecological/Land Resources**

Prior to European settlement, the land cover throughout north-central St. Louis County largely consisted of Boreal Hardwood-Conifer Forest and Great Lakes Pine Forest. These land covers collectively include aspen, birch, balsam fir, paper birch, red pine, white cedar, white pine, and white spruce. Starting before 7000 B.C., the area was inhabited by Native American groups, notably the Dakota (Sioux) and Ojibwe (Anishinaabe or Chippewa), and evidence of jasper and quartz mining predated European exploration. In the mid-1600s, French fur traders became the first Europeans to explore the area. They began a trade friendship with the Sioux, who resided at the lake, and built the first port on the lake in 1670. Fur trading continued through the mid-1800s, when a survey team discovered deposits of gold along Vermilion. This discovery attracted gold hunters who came and left without treasure, but the discovery of iron ore launched industry that developed the present-day communities of Tower-Soudan near the turn of the century. While Tower & Soudan are there because of mining, Cook is where the railroad crossed the Little Fork River and was thus a product of the railroad and logging, which transitioned to agriculture. The discovery of iron ore brought railroads to ship the ore, and also made possible the harvest of the vast stands of timber. Today, the Lake Vermilion area is known primarily for recreation and tourism, inspired by Lake Vermilion itself, rendering the area one where culture, history, and natural features can be enjoyed simultaneously.

The development of the Lake Vermilion Trail will strive to preserve the integrity of sensitive natural resources and minimize negative impacts. An existing natural resources management plan near the proposed Lake Vermilion Trail corridor is the Superior National Forest Land and Resource Management Plan, which includes to goal to "maintain a road and trail system that provides opportunities for people to access the National Forest." The Lake Vermilion Trail will help uphold and support this and other directives in the National Forest's Management Plan.

Working to mitigate the spread of invasive species and, in turn, support native vegetation can help ensure the ability for natural resources to retain their integrity along the trail. Exotic

species such as the common tansy and buck thorn, along with invasive forest insects and diseases, pose a threat to the health of natural wildlife as well as the experience of trail users. To combat this, the best thing site managers could do is educate the public about invasive species and ensure only native vegetation is planted at the sites. Current best practices for control of invasive species can be researched with recommendations provided by the Minnesota Department of Natural Resources. A partnership with the USDA Forest Service should take place to ensure quality of natural landscapes.

### **7.5 Ecological and Land Resources Goal, Strategies and Actions:**

Ecological and Land Resources Goal: Preserve the integrity of natural land and minimize negative environmental impacts within the Lake Vermilion Trail corridor.

Strategy 1: Plan and design the trail to minimize negative impacts to the environment

Action 1: During trail segment planning, assess the location of sensitive natural resources, such as wetlands and habitats for species of special concern, and avoid or minimize impacts to those areas when siting the trail alignment

Action 2: During trail segment planning, use sustainable practices, such as: avoid steep slopes and highly erodible soils, when possible, and avoid placing trails straight down a hill's fall line, and consider adding spur trails to sensitive viewpoints instead of siting the main trail in a sensitive area.

Action 3: During trail design, use sustainable trail design practices to minimize environmental impacts, such as using floating boardwalks to cross wetlands, if they cannot be avoided.

Action 4: Consider using more sustainable hard surfaces, where feasible, such as permeable pavements.

Action 5: During planning, design the trail routes to utilize existing disturbed land, where feasible, such as old roads or informal trails.

Strategy 4: During trail construction, use sustainable practices to minimize negative environmental impacts:

Action 4.1: Minimize the construction impact zone, so that construction contractors compact and clear no more terrain than necessary

Action 4.2: Require that smaller construction equipment be used, when possible, by requiring them in the bid documents

Action 4.3: Include a requirement in the bid documents/scope of services to use seed native to the area to reseed the construction zone after construction instead of turf grass

Strategy 5: Manage the trail corridors in a sustainable manner, using current best practices

Action 5.1: Identify and work to eradicate invasive and/or harmful plant species, invasive and harmful insects, and diseases negatively affecting natural resources that act as barriers to ecological health and use of the trail.

Action 5.2. Support existing native vegetation, and seek opportunities to introduce/reintroduce native vegetation where deemed appropriate.

Action 5.3. Work with the USDA Forest Service and the Minnesota DNR to discuss proper methods for plant species removal/introduction when deemed necessary.

Action 5.4: Include signage at trailheads asking that trail users help to limit the spread of invasive plant species by brushing their clothes and shoes before leaving the area. (See sample sign in the Appendix.)

Action 5.5: Include interpretive information to increase trail users' awareness of the environment, negative impacts to it, and what they can do to help sustain the natural environment.

## **Chapter 8: Programming Plan**

### **8.1 Programming**

The Lake Vermilion Trail Board and Work Group, aided by the trail executive director, will facilitate programming efforts for the Lake Vermilion Trail. Developed by the Steering Committee, the following list outlines future programming efforts by Lake Vermilion area partner agencies, businesses, and non-profits, who will work together to populate a calendar of year-round active programming.

#### **Trail Days and Group Rides:**

The Lake Vermilion Trail can offer a venue for community gatherings that can benefit overall community health in the process. Potential partners include area chambers of commerce, lions clubs, health centers, resorts, and other community and area organizations in the Lake Vermilion area.

#### **Athletic Events:**

As a scenic trail with significant length, the Lake Vermilion Trail will offer a venue for triathlons, iron man competitions, and other community-based athletic events. Potential partners who may be interested in hosting these events include area chambers of commerce, lions clubs, resorts, faith-based organizations, schools, and other community organizations.

#### **Interpretative Signage and Tours:**

The Lake Vermilion area's extensive history as Minnesota's first development site north of Duluth offers numerous opportunities for interpretation along a public-friendly trail corridor. The natural resources of the area are equally as fascinating, and will be on display as the trail will pass through many undeveloped, natural areas. Two general themes have been identified for interpretation:

- 1) Human History of the Area
- 2) Natural Resources of the Area

The following sites on or near the trail corridor have been identified as potential sites and topics for interpretation.

#### Cultural History

- Historic Resorts near Head of the Lakes
- Wakemup Portage
- Joyce's Landing
- Camp Vermilion
- Peterson's Landing
- Greenwood Town Hall
- Bois Forte Heritage Center
- Pike Bay Dam
- Soudan Mine
- Fish Hatchery
- "Dimpled" Earth from Open Pit Gold Mining
- Winston City
- Ice Road for Winter Logging
- Concrete Structure (Dam?) in the West Two River
- Borrow Pits

#### Natural Resources

- Wakemup Hill Scenic Overlook
- Swamps and Flora
- Flora and Fauna near Frazier Bay
- Pike River Rapids
- Volcanic Dike and Other Geological Features along Ridgeline
- Ridge and Drainage/Land Divide
- Sustainable land management practices on public land

Signage posted at historical/geological sites or even local historians and forest service staff could be utilized to host tours along the trail, pointing out valuable historical/cultural resources for the region. Potential partners include area historical societies, the USDA Forest Service, and other groups or individuals with extensive knowledge of the Lake Vermilion area.

#### Service Projects:

The Lake Vermilion Trail will offer a number of programs that can help with trail maintenance while building community. Proposed programs include an Adopt-A-Trail program, boy scout and

girl scout service projects, and school clean-up days. Potential partners include area scout groups, area schools, and more.

#### Bike Safety Education:

The Lake Vermilion Trail will serve as a venue for students and community members to learn how to safely bike. Potential partners for this initiative include area schools, the Arrowhead Regional Development Commission, and BikeMN.

#### Trail Kiosks and Advertising:

The Lake Vermilion Trail corridor offers the chance for the development of kiosks at trailheads or other points of interest along the trail corridor. The presence of kiosks will also open the opportunity for selling advertisement space along the trail. Potential partners include municipalities, chambers of commerce, area businesses, and the Lake Vermilion Resort Association.

#### Rentals:

Equipment to help visitors enjoy the trail could attract more use of the trail. A primary partner is resorts, which can offer an appropriate venue for rentals to take place.

## **8.2 Programming Goals, Strategies and Actions**

Programming Goal: Develop year-round trail programming efforts that enhance trail use and community, but also help promote trail fundraising, tourism and economic development.

Strategy 1. Organize and support community events that utilize the Lake Vermilion Trail.

Action 1.1. Organize and promote "Trail Days" and "Group Rides" that encourages the public to utilize the Lake Vermilion Trail.

Action 1.2. Offer and promote the Lake Vermilion Trail as a venue for organizations and businesses to utilize for their events.

Strategy 2. Promote use of the Lake Vermilion Trail as a tool for learning.

Action 2.1. Develop and implement interpretive signage at geological, historical, cultural and land management points of interest along the Lake Vermilion Trail, at trail kiosks or other markers.

Action 2.2. Partner with area agencies (i.e. historical societies, USDA Forest Service, State, County, etc.) to provide tours of the Lake Vermilion area's geological, historical, cultural, and land management features along and near the Trail.

Action 2.3. Partner with area service learning organizations (i.e. Scouts, schools, etc.) to host service projects, like clean-up days or more specified development projects, along the Lake Vermilion Trail.

Action 2.4. Partner with area schools and community organizations to offer a venue for bicycle safety education.

Strategy 3. Utilize the trail corridor to support fundraising efforts that sustain trail administration and programs.

Action 3.1. Construct trail and trailhead kiosks as a means of extending information to trail users and hosting advertising space that can generate trail funding.

Action 3.2. Partner with local resorts to implement a system of equipment rentals that can help tourists enjoy the Lake Vermilion Trail without bringing their own equipment.

#### Annual Programming Cost

Annual programming costs will depend on the amount of funds raised for this purpose. Some of the non-personal programming, such as the interpretive signs for the trailhead kiosks and the interpretive signs to be placed along the trail at “trail waysides”, will be funded with and constructed at the time of trail development. Since some trail development funding sources will not fund interpretive signs, the signs may be added later to some trail segments. Costs for these stationary facilities are:

- Kiosk with concrete pad: \$17,500
- Trail sign: \$2,000
- Bike rack: \$450
- Bench: \$1,200

Annual Revenues from Programming & Fees/Charges Total Currently \$0

### **8.3 Outreach and Marketing**

Outreach and marketing efforts for the Lake Vermilion Trail incorporate a mix of tactics. To build awareness and support for the trail, the Lake Vermilion Steering Committee has already produced brochures and a website for people to visit and learn about the proposed trail; members of the Steering Committee are also actively engaged in tabling at community events and spreading word among local businesses and municipalities. One completed outreach campaign was a trail logo contest, which garnered a logo and utilized partnerships and sponsorship from Bois Forte Band of Chippewa, Northwoods Friends of the Arts, and numerous area businesses.

Future initiatives for outreach and marketing of the Lake Vermilion Trail include the creation of clothing with Lake Vermilion Trail branding, the development and dissemination of ads in local and regional news outlets, features on area websites, active social media activity and promotion, the development of suggested route maps for visitors, the update of brochures for trail kiosks, the creation of readily-available trail maps (both physical and online copies), and the development of online video resources (i.e. Go Pro trail video) to help market the trail to potential tourists.

### **8.4 Outreach and Marketing Goals, Strategies and Objectives**

O&M Goal: Build local and regional awareness of the Lake Vermilion Trail.

Strategy 1. Continue local outreach initiatives to build local awareness and support of the Lake Vermilion Trail effort in the short-term.

Action 1.1. Continue distribution of trail plan brochures to resorts, businesses, schools, and organizations in the Lake Vermilion Trail area.

Action 1.2. Refine the Lake Vermilion Trail website ([www.lakevermiliontrail.org](http://www.lakevermiliontrail.org)) as needed and desired.

Action 1.3. Host a Lake Vermilion Trail information table and pass out trail outreach materials at community events in the Lake Vermilion area.

Action 1.4. Send out informational and donation request letters about the Lake Vermilion Trail to potential business sponsors and individuals.

Action 1.5. Utilize the Lake Vermilion Trail logo in all official correspondence regarding the Trail, and distribute stickers and window clings with the logo on it to those who donate to the trail effort.

Strategy 2. Launch regional outreach initiatives to promote programming and year-round use of the Lake Vermilion Trail as segments of the Trail open for public use.

Action 2.1. Develop clothing incorporating the trail logo, and distribute it to those who donate at a certain level or utilize revenue from clothing sales toward the Lake Vermilion Trail fund.

Action 2.2. Seek opportunities to feature the Lake Vermilion Trail on tourism-related websites based out of the Lake Vermilion area (i.e. Lake Vermilion Resort Association, City, Chamber and Bois Forte websites, etc.).

Action 2.3. Seek opportunities to promote the Lake Vermilion Trail via local and regional news outlets, sending out news releases for events being held and placing ads when deemed appropriate.

Action 2.4. Develop social media pages to promote the trail, its progress, and programs coinciding with its development, and utilize online advertising to bolster use of the Trail.

Action 2.5. Develop both static and interactive maps of the Trail as it is constructed, and disseminate the maps both online and in physical brochures available at kiosks along the trails.

Action 2.6. Create quality content (i.e. Go Pro trail videos) to support online marketing efforts.

## **8.5 User Metrics and Research Plan**

As the trail develops it will be important to find out what is happening on the trail. Research and surveying is necessary to find out who is using the trail and why, where they come from, and how well the trail serves their needs. This information can be used to:

- determine management priorities for the trail, such as maintenance and signage needs,
- determine amenities desired
- determine whether the trail is having the intended positive impacts on residents' health, and on the tourism economy
- help regional and statewide organizations promote trail development and funding
- help other trail groups document trail needs
- help document trail benefits and use when applying for trail grants
- include in local and regional comprehensive plans

A variety of types of trail user surveys can be done: in-person surveys at trailheads, trail counts by automatic counters or by volunteer surveyors, online surveys, etc. To gauge the percentage of residents or visitors are using the trail, surveys can be done: at lodging establishments, in residents' utility bills, at community meetings and events, etc. To gauge the economic benefits, surveys can be done through the Chambers of Commerce, Resort Association, or other business organizations. Surveys of local businesses can estimate local trail-related spending.

Trail usage questions may include:

- Number of trail users
- Day/time/season of use
- Types of use: bicyclists, runners, walkers, etc.
- Distance travelled to get to trail
- Purpose of trail use: recreation or transportation—to work, school, shopping, etc.
- Frequency of use
- Reasons for trail use
- Likes/dislikes about the trail
- Amenities desired
- Adequacy of maintenance
- Number of days staying in area for overnight trips
- Relative importance of trail for visiting the area
- Amount spent in local area on trail related trips
- Location of origin for visitors
- Distances travelled on the trail per day, per trip
- Ages of trail users

As the trail develops the Joint Powers Board will periodically conduct trail user counts and/or surveys, and economic studies. The Board will participate in surveys conducted by the Greater Minnesota Regional Parks and Trails Commission and other regional or statewide trail or tourism organizations.

#### **8.6 User Metrics and Research Goals, Strategies and Actions:**

User Metrics & Research Goal: Evaluate trail use and impacts periodically to: 1) assist in managing the trail to accommodate trail user needs, and 2) to demonstrate the positive trail impacts in order to promote the trail and encourage funding.

Strategy 1: The Joint Powers Board will participate in surveys conducted or requested by the Greater Minnesota Regional Parks and Trails Commission, upon request.

Strategy 2: Conduct trail use surveys or counts periodically, at least every five years, and adjust management strategies accordingly.

Action 2.1: Conduct trail user counts using automatic counters shortly after each trail segment is established in order to gather baseline data on trail use

Action 2.2: Consider adding in-ground automatic counters along the trail to facilitate data gathering

Action 2.3: Conduct trail user surveys periodically, either in person or through social media or other means, to assess more detailed information about trail users.

Action 2.4: Complete a report after trail user surveys are completed, and assess management practices to consider the findings, altering practices as necessary.

Action 2.5: Distribute the report to regional and statewide trail management organizations for use in studies and reports to encourage statewide trail development and funding.

Strategy 3: Conduct surveys periodically of local governments and residents to assess attitudes toward the trail by the general population

Action 3.1: Conduct periodic surveys of the general population through local government surveys, local government Council/Board meetings or the like, and adjust trail management policies accordingly, such as marketing and promotions.