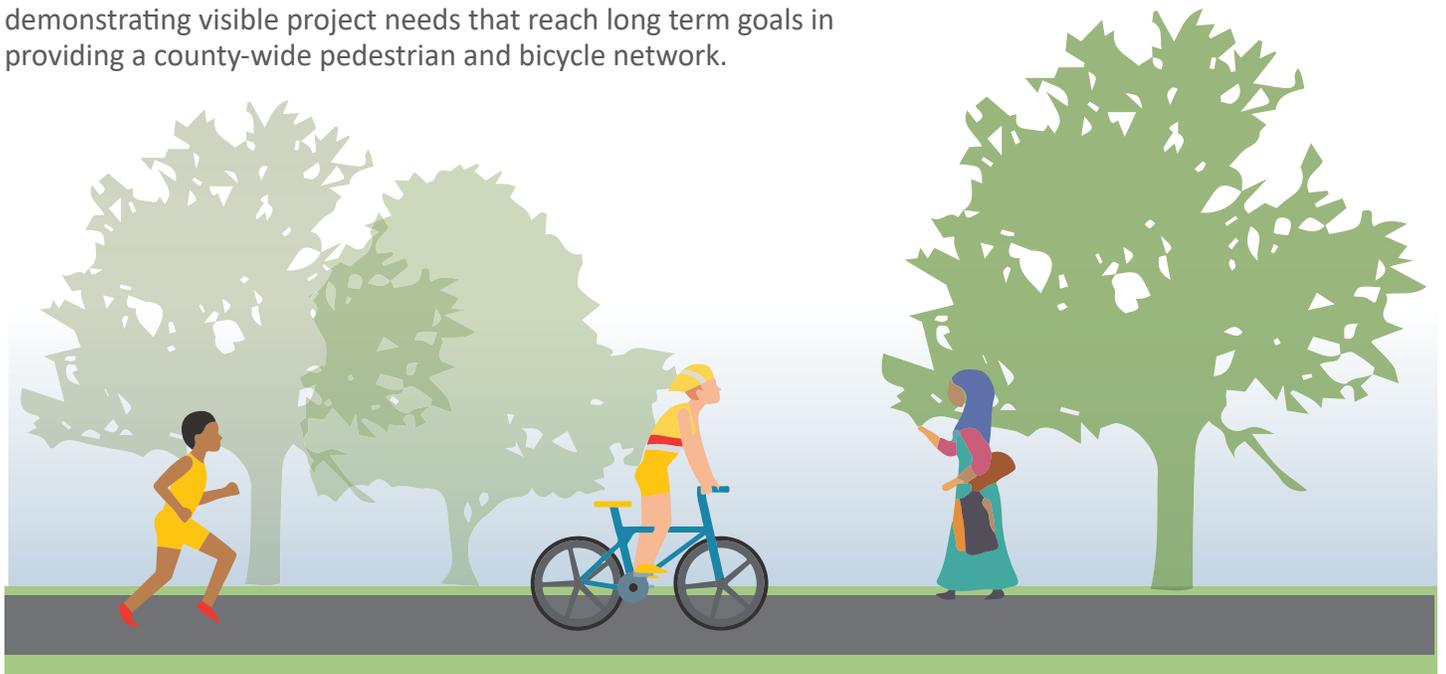




04. IMPLEMENTATION

INTRODUCTION

The Implementation Chapter helps articulate the Future Network Plan and the implementation steps that should follow. This chapter provides the county a framework for identifying priorities and demonstrating visible project needs that reach long term goals in providing a county-wide pedestrian and bicycle network.



PROJECT PRIORITIZATION

A well-defined project prioritization process can help rank project needs (on-road facilities and off-road trails) in a manner that is consistent with county pedestrian and bicycle goals. Ranking projects helps determine where investments should occur first. In this case, the future network has been broken into logical projects for prioritization (see Figure 4.1).

The prioritization process is based on a scoring system that assigns point values to a trail segment based on their contribution to specific measures (see page 4-3). The end result is a cumulative score for each trail segment; the higher the score, the higher the project.



» **High** - These projects are projected to have the biggest impact for improving the safety and comfort level for pedestrian and bicycle movement, while linking to key destinations. High projects are intended to be completed or have substantial progress towards completion in the near-term.



» **Medium** – These projects are projected to have substantial impact in meeting specific measures. Medium projects should be viewed as opportunities for completion in the mid-term.



» **Low** – These projects are projected to meet a few of the measures. Regardless of their score, they are still viewed as a need in completing the county’s pedestrian and bicycle network. These project should be monitored for opportunities for completion and how they may coincide with future roadway projects.

PROJECT PRIORITIZATION RESULTS

The project prioritization tool developed for this study allows the county to run alternative scenarios to determine a project’s benefit to the overall network. This tool also provides the county flexibility to adjust measures accordingly as priorities may shift over time. For example, opportunities may present themselves to advance a project sooner than originally planned. This may include opportunities to secure new funding, responding to a safety need, or aligning a trail project that coincides with a roadway improvement.

The project prioritization tool ranks 48 projects that total over 100 miles of new off-road bike/pedestrian routes and on-road bike facilities (see Tables 4.1 & 4.2 and Figure 4.1). This list helps communicate project needs to elected leaders, residents, and stakeholders.

PROJECT PRIORITIZATION MEASURES

The following measures were used to evaluate the Future Network Plan and to inform the project priorities list (see Tables 4.1 and 4.2). The measures were selected based on community input and direction from the Technical Advisory Committee (TAC).



FILLS A GAP

The project fills a gap in the existing network, which are typically missing links less than one mile in length



CONNECTOR TO PARKS

The project provides a logical connection to a county or State park



RBTN CONTRIBUTION

The project is part of the Regional Bicycle Transportation Network (RBTN)



CONNECTOR TO SCHOOLS

The project provides a logical connection to a school (K-12)



CONNECTOR TO REGIONAL & STATE TRAILS

The project will help complement the existing regional and state trail network by connecting county trails to this network



CONNECTOR TO A RBTN

The project will complement the Regional Bicycle Transportation Network (RBTN) by connecting county trails to this network



CONNECTOR TO HOMES

The project will help link households in poverty to the county or regional trail network



COMFORT LEVEL

The project will help enhance the user's experience, which is measured by Levels of Traffic Stress (LTS). A LTS score represents the level of stress or comfort one experiences on the route (see Chapter 2). For example, the most comfortable facilities (or the least stressful) are referred to as facilities for "all ages and abilities." These facilities are generally comfortable for people of a wide range of abilities, ages and perceptions of safety. The least comfortable facilities (most stressful) are referred to as facilities for "strong and fearless bicyclists." These facilities are adjacent to or intersect with high vehicle speeds and multiple traffic lanes. These facilities are generally uncomfortable for most bicyclists and pedestrians, with the exception of highly experienced road cyclists



CONNECTOR TO DEMAND CENTERS

The project provides a logical connection to a demand center (see Chapter 2). Demand centers are areas where there is a high need for pedestrian and bicycle facilities. These areas are based on existing conditions that take into account socioeconomic factors (e.g., population density), connectivity factors (e.g., bus stops), and destination factors (e.g., job centers)

Table 4.1 New Off-Road Facilities

PROJECT (SEE FIGURE 4.1)	MILES	PRIORITY	CR ROAD #
OFF-04a	4.91	Medium	CR 4
OFF-04b	2.73	Medium	CR 4
OFF-04c	2.14	Medium	CR 4
OFF-06a	1.29	High	CR 6
OFF-06b	1.20	High	CR 6
OFF-07a	1.74	Low	CR 7
OFF-07b	1.83	Low	CR 7
OFF-07c	3.04	Low	CR 7
OFF-07d	3.09	Low	CR 7
OFF-08	0.90	Medium	CR 8
OFF-10a	3.53	High	CR 10
OFF-10b	1.16	Low	CR 10
OFF-12a	0.55	High	CR 12
OFF-13a	1.86	Medium	CR 13
OFF-13b	1.34	High	CR 13
OFF-14a	2.03	High	CR 14
OFF-14b	2.54	High	CR 14
OFF-14c	3.50	Low	CR 14
OFF-15a	3.09	Low	CR 15
OFF-15b	4.12	Low	CR 15
OFF-15c	4.75	Low	CR 15
OFF-15d	1.82	Low	CR 15
OFF-15e	2.25	High	CR 15
OFF-15f	0.70	Medium	CR 15
OFF-15g	1.21	High	CR 15
OFF-15h	3.17	Medium	CR 15
OFF-15i	0.76	High	CR 15
OFF-16	1.25	High	CR 16
OFF-17	3.16	Low	CR 17
OFF-18	0.73	High	CR 18
OFF-19a	2.72	High	CR 19
OFF-19b	1.12	High	CR 19
OFF-20	0.93	Medium	CR 20
OFF-21a	5.35	Low	CR 21
OFF-21b	4.26	Low	CR 21
OFF-21c	4.04	Low	CR 21
OFF-21d	3.06	Medium	CR 21

PROJECT (SEE FIGURE 4.1)	MILES	PRIORITY	CR ROAD #
OFF-22	4.53	Low	CR 22
OFF-32	1.39	High	CR 32
OFF-33	0.81	Medium	CR 33
OFF-38	0.30	High	CR 38
OFF-55	2.15	Medium	CR 55
OFF-64	0.29	Medium	CR 64
OFF-74	0.72	Medium	CR 74
OFF-94	1.21	High	I-94*
Total	99.32		

*Not a county roadway

Table 4.2 New On-Road Facilities

PROJECT (SEE FIGURE 4.1 MAP ID)	MILES	PRIORITY	COUNTY ROAD #
ON-04d	1.78	Low	CR 4
ON-18	4.24	Medium	CR 18
ON-21	4.02	Low	CR 21
ON-23	1.00	High	CR 23
Total	11.05		



USING THE 6E'S: Implementation of the Future Network Plan should embrace the 6 E's¹ from Safe Routes to School (SRTS) initiatives. The 6 E's have been translated to a broader definition that applies at a county-wide level.

✓ **EVALUATION**

Evaluation strategies help monitor trends over time and identify specific safety issues. Evaluating and monitoring crash data can help identify areas of concern that may warrant safety improvements (see Page 2-14 for this Plan's safety analysis).

💬 **EDUCATION**

Education programs aim to teach residents safe walking and biking behaviors. Education programs may also include driver safety campaigns. There are often opportunities to partner with police, community groups or others on education programs.

👥 **ENGAGEMENT**

Every project should begin by listening to the community, youth, families, community organizations, and build intentional, ongoing engagement opportunities into the planning and design process.

♥ **EQUITY**

Equity recognizes that different people have different barriers to living healthy, fulfilled lives (see Factor #6). In order to allow people to get to the same outcome, we need to understand the different barriers and opportunities that affect different groups, and craft our policies, programs, and overall approaches with those various challenges and needs in mind.

Equality assumes that all needs are the same. The result is that every community gets the exact same resources without regard to individual differences. Equality works only in circumstances where everyone starts from the same place and needs the same things.

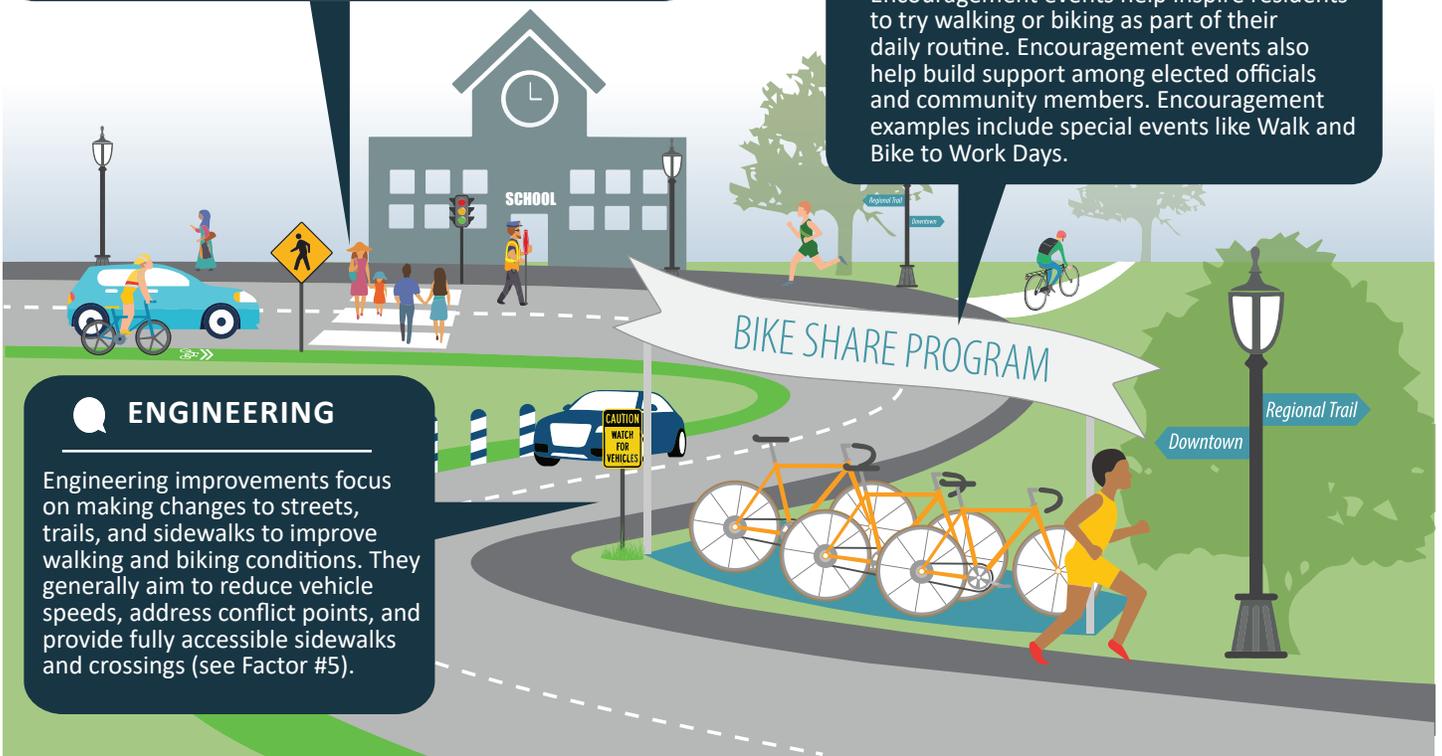
Equity allows resources to be provided on the basis of need. Communities disproportionately impacted by safety, health or transportation access inequities are provided appropriate resources to address their individual needs. Therefore, resource allocation may differ between communities. While often used interchangeably with equality, equity involves a variety of strategies aimed at the fair – but not necessarily equal – provision of resources.

👍 **ENCOURAGEMENT**

Encouragement events help inspire residents to try walking or biking as part of their daily routine. Encouragement events also help build support among elected officials and community members. Encouragement examples include special events like Walk and Bike to Work Days.

💡 **ENGINEERING**

Engineering improvements focus on making changes to streets, trails, and sidewalks to improve walking and biking conditions. They generally aim to reduce vehicle speeds, address conflict points, and provide fully accessible sidewalks and crossings (see Factor #5).



¹Minnesota Department of Transportation "Minnesota Safe Routes to Schools" <https://www.dot.state.mn.us/mnsaferoutes/> and Safe Routes Partnership: <https://www.saferoutespartnership.org/safe-routes-school>

CONSIDERATION FACTORS

There are many factors to consider when prioritizing a project for implementation. In order to shift a project, the county should consider a series of “Consideration Factors.” The factors maintain a degree of flexibility when prioritizing projects over time. The factors help address larger policy decisions that need to be considered when programming projects for implementation.

The factors are provided to help further refine the implementation of the projects listed in Tables 4.1 and 4.2. The factors may further influence the timeline or importance of a project, in addition to their priority measure ranking.

CONSIDERATION FACTOR #1: DOES THE PROJECT ADDRESS PEDESTRIAN AND BICYCLE SAFETY NEEDS?

Pedestrian and bicycle safety is an important contributor in making Washington County a great place to live, work, and play. There are many examples of great places to walk and bike in Washington County. However, there is still much work to be done. High vehicle speeds lead to risky crossing conditions and connectivity gaps at high traffic locations, resulting in uncomfortable pedestrian and bicycle experiences.

Bicycle and pedestrian safety goals are included in Washington County’s 2040 Comprehensive Plan. Working towards this goal requires a comprehensive approach that mirrors the 6 E’s for Safe Routes to School (SRTS). The 6 E’s (see page 4-6) have been translated to a broader definition that applies at a county-wide level. The 6E’s should be used as a source of inspiration in creating safer environments for pedestrians and bicyclists.

The county should focus on “Evaluation” and “Engineering” for the purpose of this factor. Shifting project priorities (see Tables 4.1 and 4.2) should be “Evaluated” to address safety needs first. Safety improvements should also be “Engineered” to address problem areas, while using design strategies that are proactive in helping mitigate conflicts between vehicles and pedestrians and bicyclists.

CONSIDERATION FACTOR #2: DOES THE PROJECT OVERCOME A TRANSPORTATION BARRIER?

There are physical barriers that limit pedestrian and bicycle movement throughout the county. The Future Network Plan will need to overcome these barriers. Therefore, stronger consideration should be given to projects that help move people safely over these barriers. Some of the more major barriers (e.g., Highway 36 and Interstate 94) in the county are discussed in the sidebar.

REGIONAL BARRIERS

Some of the major barriers in that limit pedestrian and bicycle movement in Washington county have been recognized by the Metropolitan Council’s Regional Bicycle Barriers Study (2019). These barriers primarily consist of connections over major transportation corridors. Major barriers identified during this Plan’s public engagement process include Highway 36, Highway 95, Interstate 494, and Interstate 94.

Overcoming freeway barriers is slowly becoming part of the design process for larger roadway projects. Future interchanges and overpasses (planned or programmed) recognized in Washington county’s 2040 Comprehensive Plan include:

- » Highway 36/county Road 15 (Manning Avenue) Interchange
- » Highway 36/county Road 17 (Lake Elmo Avenue) Interchange
- » Interstate 35E/County Road 4 (170th Street) Interchange
- » Highway 36/Highway 120 Interchange
- » Interstate 94 (west of County Road 13) Overpass

These projects are primarily being driven by growth and traffic projections. While the timing of these

Under some circumstances, the Future Network Plan may require a grade separated crossing (e.g., overpasses or tunnels) to reduce pedestrian and bicycle crashes. Grade separated crossings can help reduce serious and fatal injuries, while improving traffic flow. However, they also have some disadvantages. They can be costly and may never be fully utilized by pedestrians and bicyclists if they do not provide a safe and convenient connection.

The actual use of a grade separated crossing will depend on the time it takes to use the crossing compared to crossing a roadway at-grade. For example, Table 4.3 demonstrates that if travel times are the same to cross a roadway at-grade and grade separated, most people will choose to use a tunnel and many people will choose use a pedestrian bridge. In general, people will avoid using a grade-separated crossing when it is inconvenient and takes too long. Pedestrians are more apt to use a pedestrian tunnel if it does not pose any personal security risks. These considerations need to be weighed when evaluating cost/benefit of a grade separated crossing.

Project priorities (see Tables 4.1 and 4.2) may shift over time as further evaluation and consideration is given to a project's ability to overcome a barrier, while providing safer crossings. Higher priority should be given to projects that overcome regional barriers (see sidebar on page 4-7).

Table 4.3 Percent of Pedestrians Using the Grade Separated Route vs. the At-Grade Crossing

TRAVEL TIMES	BRIDGE	TUNNEL
EQUALS	15% TO 60%	95%
30% Longer on Grade Separated Route	0%	25% to 70%
50% Longer on Grade Separated Route	0%	0%

Note: If grade separated crossings are an alternative at a crossing location, the use of the grade separated crossing depends on the time to use each alternative route.

CONSIDERATION FACTOR #3: DOES THE PROJECT HAVE COMMUNITY SUPPORT?

The usefulness and longevity of this Plan needs to have community buy-in from the outset. To achieve this objective, the implementation of the Future Network Plan will require a meaningful and transparent planning process. The planning process should focus on building consensus around local priorities and realistic implementation measures. The Plan should be referenced, celebrated, and promoted both within the county and at the local level.

The projects and ideas represented in this Plan will require coordinated efforts by many different county, local and state agencies. The various county roles and responsibilities include Public Works, the county Board of Commissioners, Washington County State Health Improvement Partnership (SHIP), and the Parks Commission to name



just a few. Shifting a project (see Tables 4.1 and 4.2) should be vetted through a public process.

COST PARTICIPATION POLICY

Community support for a project is also built through cooperative agreements between the county and city. Trails are sometimes constructed as part of larger roadway projects, which at times may be funded as part of Washington County's Cost Participation Policy (#8001). This policy determines the appropriate division of cost in funding cooperative highway projects, traffic signals, and bridge construction projects with MnDOT, municipalities, and other agencies. For highway and bridge projects, the cost splits differ for cities with populations greater than 5,000 and for those with populations less than 5,000. The primary purpose for this difference is the absence of direct State Aid funding to municipalities with less than 5,000 residents. The policy also guides the county's cost participation when communities use Tax Increment Financing (TIF) and for jurisdictional changes or turnbacks.

CONSIDERATION FACTOR #4: DOES THE PROJECT CONTRIBUTE TO THE RBTN?

Implementation of the Future Network Plan should correspond closely to the corridors identified in the Regional Bicycle Transportation Network (RBTN) in order to provide seamless connections to neighboring communities and the broader regional transportation network. According to the Metropolitan Council, the RBTN corridors and alignments make up the "trunk arterials" of the overall system of bikeways that connect to regional employment and activity centers. Washington County's RBTN alignments and corridors are shown in Figure 4.2.

The goal of the RBTN is to establish an integrated seamless network of on-street bikeways and off-road trails that complement each other to most effectively improve conditions for bicycle transportation at the regional level. These routes are further classified into two tiers of corridors and alignments:

» **Tier 1 & 2 Corridors** have been identified as the highest for regional transportation planning and investment. The corridors are planned in locations where they can attract the most riders and where they can most effectively enhance mode choice in favor of biking, walking, and transit over driving alone. Tier 2 Corridors are the remaining corridors in the overall RBTN. A total of 10 RBTN corridors are identified within the county.

» **Tier 1 & Tier 2 Alignments** are based on local bicycle plans and in many cases (particularly in the core cities) already exist in some form and may need little or no improvement for the regional network. The RBTN alignment network identified in Washington County provides connections between the cities of White Bear Lake and Forest Lake (via the Hardwood Creek Regional Trail), Pine Springs to the Pine Point Regional Park (via the Gateway State Trail), with a spur connecting to Stillwater (Brown's Creek Trail).

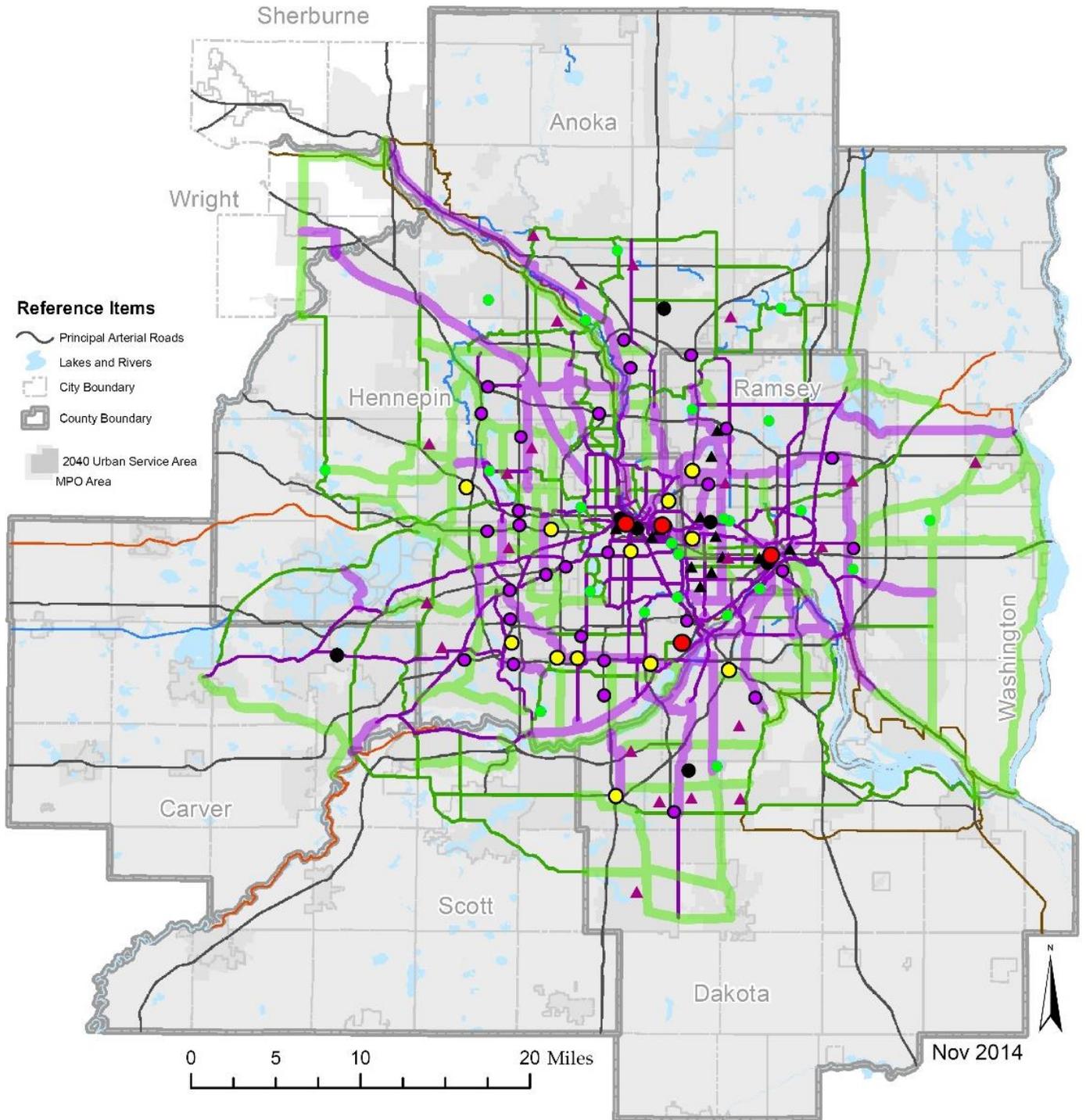
Shifting a project (see Tables 4.1 and 4.2) should consider its contribution to the RBTN. Projects that contribute to the RBTN may score more favorably as part of the Metropolitan Council's Regional Solicitation program.

CONSIDERATION FACTOR #5: DOES THE PROJECT EMBRACE INNOVATIVE DESIGN SOLUTIONS?

Designing and planning for pedestrian and bicycle projects requires a balance of interpreting and translating experiential or qualitative data and community feedback, alongside current county and statewide standards for roadways, intersections, and trail facilities. While one design standard may be a perfect solution to an issue in one community, the same solution may be completely inappropriate in another context (e.g., rural, suburban, or urban). Design solutions should also embrace some degree of flexibility when finding solutions that address barriers (e.g., topography, environmental features, and right-of-way constraints) and align with community priorities.

Planners and engineers have a wide range of design solutions at their disposal that provide a safer, more comfortable experience, and accessible street for people walking and biking. These design solutions (see Chapter 3) should be explored to their fullest potential when implementing the Future Network Plan. The county should be willing to explore new options and design solutions as they become available, while understanding that investments need to accommodate the movement of people comfortably and safely.

Figure 4.2 Metropolitan Council Regional Bicycle Transportation Network (RBTN)



RBTN Alignments

-  Tier 1 Alignments
-  Tier 2 Alignments

RBTN Corridors (Alignments Undefined)

-  Tier 1 Priority Regional Bicycle Transportation Corridor
-  Tier 2 Regional Bicycle Transportation Corridors

Regional Destinations

-  Metropolitan Job Centers
-  Regional Job Centers
-  Subregional Job Centers
-  Large High Schools
-  Colleges & Universities
-  Highly Visited Regional Parks
-  Major Sport & Entertainment Centers

Other Trail Systems

-  Regional Trails (Regional Parks Policy Plan)
-  Mississippi River Trail (US Route 45)
-  State Trails (DNR)

GRANT FUNDING: The county should continue to pursue grant funds from various programs to help offset capital costs when implementing the Future Network Plan.

MN DNR NATURAL AND SCENIC AREA GRANTS

The MN DNR Natural and Scenic Area Grants are intended to protect and provide public access to high quality natural and scenic areas. Example projects include trails, overlooks interpretive displays, benches, wayfinding and trailhead parking. All projects must align with the State Outdoor Recreation Plan (SCORP). This grant is typically available annually, with an application deadline in early spring.

MN DNR OUTDOOR RECREATION GRANTS

The MN DNR Outdoor Recreation Grant is intended to fund projects that increase and enhance outdoor recreation facilities in local and community parks throughout the state. All projects must align with the State Outdoor Recreation Plan (SCORP). Example projects include internal park trails and trail amenities. This grant is typically available annually, with an application deadline in early spring.

MN DNR LOCAL TRAIL CONNECTIONS (LTC)

Local Trail Connections grants are administered through MN DNR. These grants fund relatively short trail connections between where people live and desired community destinations, and are not intended for funding significant new trails. Funding prioritizes projects with significant connectivity, high expected use, and attractive integration of cultural and natural resources.

MN DNR FEDERAL RECREATIONAL TRAIL PROGRAM

The Recreational Trails program provides financial assistance for the development and maintenance of recreational trails and trail-related projects and provides funding from the Federal Highway Trust Fund in acknowledgment of off-road recreational fuel use. This current federal highway bill is set to expire on September 30, 2020, however a replacement bill (America's Transportation Infrastructure Act (ATIA) has been proposed.

MNDOT SAFE ROUTES TO SCHOOL

MnDOT administers grant funding to support Safe Routes to School (SRTS) Planning Assistance and plan development to support schools' effort to promote safe biking and walking for students on a daily basis. Small micro-grants are occasionally available to fund educational or encouragement programs such as bike fleets and bike rodeos. SRTS Plans are generally used as a foundation for cities and school districts to apply for SRTS Infrastructure grants. Infrastructure grants support capital funding for projects that promote and encourage biking and walking to school, such as trails, sidewalks, and other bike/ped facilities near schools. Other example projects include traffic calming, crosswalk signals, bicycle parking and ADA improvements. SRTS Planning Assistance and Infrastructure Grants are generally available on an annual basis.

METROPOLITAN COUNCIL REGIONAL SOLICITATION

The Metropolitan Council allocates federal funds through Regional Solicitation Grants. Funding priorities include multi-use trails, bicycle facilities, grade-separated crossings, filling network gaps, intersection/crossing treatments, sidewalks, streetscaping, ADA improvements, and Safe Routes to School infrastructure projects. These grants are available on 2-year funding cycle, with the next solicitation for grant applications anticipated in early 2020.

PEOPLE FOR BIKES (NON-PROFIT 501C3)

The PeopleForBikes Community Grant Program provides funding for important projects that build momentum for bicycling in communities across the U.S. These projects include bike paths and rail trails, as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives.

CONSIDERATION FACTOR #6: DOES THE PROJECT PROVIDE BENEFITS FROM AN EQUITY PERSPECTIVE?

In many communities, including Washington County, there are barriers that prevent all residents from having the same opportunities to thrive. For instance, race, ethnicity, and age continue to be predictors of health, education, income, housing, and recreation. The Washington County Bicycle and Pedestrian Plan is committed to advancing equitable opportunities for all to move throughout the county.

In order to allow people to achieve their greatest outcome, we need to understand the different barriers and opportunities that affect different groups, and prioritize projects with those various challenges and needs in mind. A fundamental approach to multimodal planning is a process that embraces Context Sensitive Solutions (CSS). CSS is a collaborative, interdisciplinary approach that involves all stakeholders in developing a transportation facility that fits its context and environment (e.g., physical, built, social, and environmental), while maintaining safety and mobility. Implementation of the Future Network Plan should be viewed through a CSS lens that helps advance social equity goals. Shifting a project (see Tables 4.1 and 4.2) should carefully weigh the outcomes from this perspective. However, it is important to note that a focus on equity does not mean providing equal access to the same amount of resources. Equity is focused on making sure everyone has the resources they need to lead a healthy, productive life.

CONSIDERATION FACTOR #7: DOES THE PROJECT ALIGN WITH FUNDING OPPORTUNITIES?

Implementation of the Future Network Plan will occur as opportunities present themselves and as resources allow. Therefore, funding to acquire and build a pedestrian or bicycle improvement will come from a variety of sources.



Those sources may include Washington County general funds, bonding, city partnerships, and other grant funding. Since Washington County does not have all the funding needed today to build out the Future Network Plan, it will need to actively monitor and plan for various funding sources. The type of funding (e.g., grants) may influence when a project is built - shifting its priority (see Tables 4.1 and 4.2).

- » **General Funds:** General funds are used as a primary source for on-going maintenance, operations, and amenities for the bike and pedestrian system. Capital improvements can also be funded through general funds. Many projects coincide with roadway reconstruction or expansion projects, which make it more cost effective to integrate trail construction when working in the existing rights-of-way.
- » **Grants:** Grant funding throughout Washington County has had a positive impact on the implementation of local and regional bicycle and pedestrian network. Grant funding generally requires a match by the county or City, likely through general funds. Grant funding also typically favors larger, capital projects over maintenance and operations funding. Grant funding might also require evidence of partnerships and community engagement and support for specific requests. Examples of grant funds are listed on page 4-11.
- » **Bonding:** General Obligation Bonds and Revenue Bonds provide another source of implementation funding for new facilities, and in some cases, can provide funding for repairs and upgrades of existing facilities. Residents can decide to raise revenue through a permanent or temporary tax increase dedicated for specific purposes such as park, trail, and bikeway improvements and maintenance. These funds are usually provided through bonds approved as part of a voter referendum.
- » **County State Aid Funds:** State aid funds are available for pedestrian and bicycle improvements on state aid roadways. This funding source is particularly useful at the time of street construction or re-construction.

- » **Partnerships:** Public and private partnerships have the potential to provide a wide array of funding opportunities beyond the traditional municipal models. Partnerships with local and state agencies have proven to be successful in building the existing trail network. Further partnerships with the School Districts and local businesses will be important for implementation of events and programming, and can support future grant writing efforts as well. Organizations with partner funding can also provide assistance with design, outreach, or maintenance/stewardship of facilities.
- » **Donations:** Private donations are a potential funding source; these may be from individuals or area corporations, or donations of labor from recreation clubs or use agreements. “Adopt-a-Trail” programs, memorial bench donations, and incentives for local businesses to provide bike racks are all examples of how organizations, businesses, and individuals could help with maintenance and funding, while raising awareness and enthusiasm of the bicycle and pedestrian system.

CONSIDERATION FACTOR #8: DOES THE PROJECT CONSIDER FUTURE OPERATIONS AND MAINTENANCE NEEDS?

Implementation of the Future Network Plan should consider ongoing operations and maintenance needs. General maintenance activities may include trail edge mowing, surface maintenance, snow removal, refuse removal, annual inspections, and general administration. General estimates for these types of activities associated with a regional trail corridor (15 to 30 miles in length) are provided in Table 4.4. Table 4.5 provides general cost estimates for other activities associated with capital costs.

Replacement schedules are also an important factor to consider in developing annual work plans and Capital Improvement Programs (CIP). Regular maintenance schedules should be followed for on- and off-road trails to extend their lifespan, while maximizing investments. (see Tables 4.6 and 4.7). Implementation of the Future Network should consider long-term funding needs to ensure investments (projects) can be maintained over time.

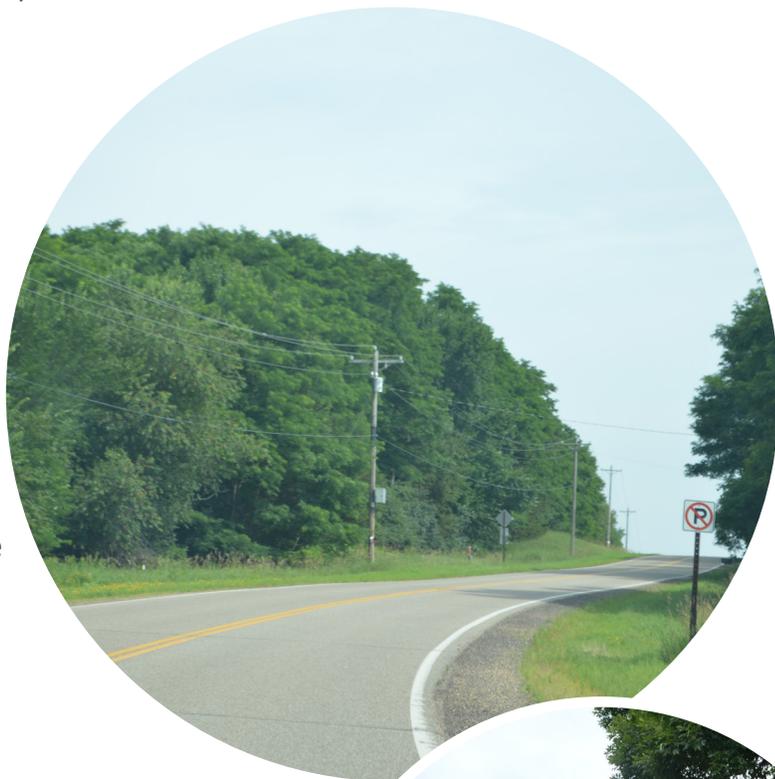


Table 4.4 Annual Operations & Maintenance Activities - 2020 Cost Estimates

ITEM	ANNUAL COST *
General Administration	\$6,000
Annual Sign Inventory and Replacements	\$2,500
Security – Patrol	\$1,500
Natural Resource Management Along Corridor	\$2,000
Mowing, Trail Sweeping	\$4,500
Trail Amenity Maintenance – Benches, Trash Cans, Refuse Removal	\$5,000
Landscape Maintenance at Trailheads	\$5,500
Shoulder and Striping Maintenance	\$6,000
Equipment Maintenance	\$6,500
Trailhead facility repair and maintenance	\$5,000
Snow Removal	\$2,000
Tree trimming	\$2,000
Vegetation maintenance (sediment removal from rain gardens and stormwater management systems, prairie management including burns)	\$2,500

* General estimates are based on a regional trail corridor that is 15 to 30 miles in length.

Table 4.5 Capital Activities - 2020 Cost Estimates

FACILITY TYPE	ANNUAL O+M COST	CAPITAL COST	ESTIMATED LIFE
Asphalt Trail (8' wide or less)	\$1,200 to \$2,000 / Mile	\$200,000 to \$250,000 / Mile	25+ years
Asphalt Trail (10' wide)	\$1,500 to \$2,500 / Mile	\$250,000 to \$350,000 / Mile	25+ years
On-Street Bikeways (8' wide)	\$1,500 to \$2,500 / Mile	\$500,000 to 700,000 / Mile	20 years
Sidewalks (6' wide concrete)	Minimal	\$45 / LF	25 to 40 years
New Boardwalk (wood)	\$15 - \$20 / LF	\$600 - \$800 / LF	15 to 20 years
SIGNAGE TYPE	ANNUAL O+M COST	CAPITAL COST	ESTIMATED LIFE
Kiosk-Style Signs	Minimal	\$5,000 - \$25,000	20 years
Wayfinding Sign	Minimal	\$1,000 - \$1,500	20 years
CROSSING TYPE	ANNUAL O+M COST	CAPITAL COST	ESTIMATED LIFE
Pedestrian/Bicycle Tunnel	\$2,000 - \$5,000 / yr	\$600,000 - \$1,200,000	50 years
Pedestrian/Bicycle Overpass	\$10,000 - \$20,000 / yr	\$1,200,000 - \$2,500,000	50 years
HAWK (Pedestrian Hybrid Beacon Signal)	\$4,000 - \$6,000 / yr	\$100,000 - \$160,000	20 years
RRFB (Rectangular Rapid Flashing Beacons)	Minimal	\$15,000 - \$20,000	20 years
Signalized Intersection	\$6,000 - \$10,000 / yr	\$200,000 - \$350,000	20 years
Flashing Warning Sign	Minimal	\$4,000 - \$8,000	10 to 15 years
ADA Curb Ramp Retrofit	Minimal	\$1,000 - \$2,000 / Ramp	25 to 40 years
High Visibility Crosswalks	Minimal	\$800 - \$2,000	2 to 5 years
Median/Refuge Island (4' to 8' wide)	Minimal	\$20,000 - \$30,000 / 100 LF	25 to 40 years
Crossing Signs	Minimal	\$300 - \$1,200	10 to 15 years
AMENITY TYPE	ANNUAL O+M COST	CAPITAL COST	ESTIMATED LIFE
Bike Repair Station	\$50 - \$100	\$500 - \$1,500	5 years
Bench	Minimal	\$750 - \$2,000	10 years
Trash/Recycling Cans	Minimal	\$500 - \$1,500	10 years
Bike Parking Rack	Minimal	\$500 - \$1,000	20 years

Table 4.6 Off-Road Trail - Maintenance Schedule

ASPHALT TRAIL YEAR	MAINTENANCE ACTIVITY
0	Original construction of the paved trail
every 5 years	Routine maintenance: crack filling, minor patching, minor curb repairs
15 - 20	Overlay or Mill & Overlay
35	Reclaim and Pave

Table 4.7 On-Road Bike Facility - Maintenance Schedule

ASPHALT TRAIL YEAR	MAINTENANCE ACTIVITY
0	Original construction of the paved trail
every 5 years	Crack Seal
20	Overlay
35	Mill & Overlay
50	Total Reconstruction

** It is assumed maintenance activities will coincide with maintenance schedules used to maintain a typical roadway.*

CONSIDERATION FACTOR #9: DOES THE PROJECT HAVE ANY CHALLENGES TO OVERCOME?

Reaching a consensus on a pedestrian or bicycle project typically requires a quantitative and qualitative approach to evaluate various alternatives, alignments, or routes. This approach needs to consider technical data, public input, engineering design standards, and direction from county staff. To achieve this objective, the county can conduct sensitivity tests to determine a project’s feasibility.

A sensitivity test will help determine a project’s benefits or fatal flaws from a social, economic, and environmental perspective (SEE Scan). Typical screening criteria that is consistent with federal environmental documents include, but is not limited to the following:

- » Impacts to adjacent property (e.g., full or partial acquisition)
- » Benefits to surrounding businesses
- » Benefits to the physical and natural environment (e.g., noise and air quality)
- » Impacts to threatened and endangered species, wetlands, waterbodies, soils, and hazardous materials
- » Community and Political Support
- » Return on Investment (e.g., low-cost/high benefit vs. high cost/marginal benefit)
- » Project Readiness (right-of-acquisition, design, and permitting)
- » Social Equity Measures (ability to connect to underserved populations)

Shifting a project’s priority (see Tables 4.1 and 4.2) may be influenced by further analysis. Projects should be fully screened for their benefits and fatal flaws, if any, prior to implementation.

CONSIDERATION FACTOR CHECKLIST

The “Consideration Factors” help introduce larger policy decisions to consider when shifting a project (see Tables 4.1 and 4.2). The factors should be weighed and considered heavily when implementing the Future Network Plan. Using the factors will also help create greater transparency in the decision making process. In that respect, Table 4.8 can be used as a checklist to help determine if and when project should be adjusted.

Table 4.8 Consideration Factor Checklist

YES OR NO	CONSIDERATION FACTORS
	Factor #1: Does the project address pedestrian and bicycle safety needs?
	Factor #2: Does the project overcome a transportation barrier?
	Factor #3: Does the project have community support?
	Factor #4: Does the project contribute to the RBTN?
	Factor #5: Does the project embrace innovative design solutions?
	Factor #6: Does the project provide benefits from an equity perspective?
	Factor #7: Does the project align with funding opportunities?
	Factor #8: Does the project consider future operations and maintenance needs?
	Factor #9: Does the project have any challenges to overcome?





