Completing Cleveland's Vision

SAINT PAUL GRAND ROUND

Saint Paul Neighborhood Energy Consortium

Master Plan Prepared by:

SRF CONSULTING GROUP, INC.

October 2000

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with assistance from

The 106 Group

SAINT PAUL GRAND ROUND MASTER PLAN

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Executive Summary

The Saint Paul Grand Round

Completing Cleveland's Vision

The purpose of the Saint Paul Grand Round Master Plan is to establish a framework for continued implementation of the Saint Paul Grand Round, a 29-mile recreational greenway for bicycling, walking, and in-line skating. The completed Grand Round will connect neighborhoods, regional parks, and the Mississippi River through a system of boulevards and trail facilities. It will also include signage to visually define the Grand Round; interpretive kiosks informing users of the natural, historic, and cultural resources along the route; opportunities for native landscaping and community gardens; opportunities for public art; and additional support services, such as lighting, scenic overlooks, parking areas, and rest stops.

The establishment of the Saint Paul Grand Round as a recreational greenway will help Saint Paul balance its built and natural environments. By giving residents easy access to the natural environment, the Grand Round will enable people to experience nature without leaving the city. A nearby recreational greenway will also create attractive and accessible places to exercise, thereby encouraging healthy lifestyles.

Project History

The Saint Paul Grand Round was conceived by H.W.S. Cleveland over one hundred years ago. His vision led to the completion of several parkway segments in the early 1900s. By the 1930s, however, implementation of the remainder of the system was halted. The Saint Paul Neighborhood Energy Consortium (NEC), principal sponsor of the Saint Paul Classic Bike Tour, has resurrected the idea of making the historic route of the Saint Paul Grand Round a permanent scenic and recreational loop. The NEC is a nonprofit coalition of community organizations whose mission is to provide information, services and programs that contribute to an environmentally responsible community. The Saint Paul Grand Round meets this goal by providing non-motorized recreation and transportation opportunities, preserving urban open spaces, and fulfilling the historic vision of a network of greenways in Saint Paul.

Master Plan Contents

The Saint Paul Grand Round Master Plan takes an in depth look at this historic route, and details specific improvements that could be made. The Master Plan includes the following items:

- An analysis of the regional and local context of the Grand Round, including examination of the metro-wide park and trail system, city trails and parks, current regional design initiatives (such as Harriet Island and the Wabasha Bridge), and neighborhood and city goals.
- An overview of existing facilities and needed connections.
- A segment-by-segment analysis of the historic Grand Round route. Each segment includes an evaluation of existing conditions, an overview of design opportunities and constraints, a list of proposed improvements, and a sample of possible interpretation opportunities.

- Design guidelines for on- and off-road bicycle facilities and roadway crossings, based on accepted state and national standards.
- Recommendations for signage, interpretive kiosks, and other user amenities, such as rest areas, benches, scenic overlooks, decorative fencing and walls, lighting, landscaping, and public art.

In addition to the above items, the Saint Paul Grand Round Master Plan sets forth a variety of themes to be interpreted through signage and kiosks along the Grand Round route. The themes include the creation of Saint Paul's park system, natural landscapes, immigrant communities, residential patterns, "paddlewheels and steel wheels," Mississippi River, early industry, Saint Paul today and American Indian heritage sites. The interpretation of these themes add an additional dimension to this historic Saint Paul amenity.

Grand Round Implementation

The completion of the Saint Paul Grand Round will require the cooperative efforts of the NEC, various departments of the City of Saint Paul, neighborhood groups, and other agencies. The Master Plan presents the completion of the Grand Round in three phases:

- Phase 1 would establish the identity of the Grand Round route. This can be accomplished through the installation of signage and interpretive kiosks, the creation of bicycle facilities where none currently exist, and the installation of user amenities along the route.
- Phase 2 would capitalize on future and ongoing roadway reconstruction (such as Shepard Road) in order to improve the safety and usability of the Grand Round.
- Phase 3 includes all other projects designed to upgrade and enhance existing facilities. Improvements may include the installation of additional user amenities, construction of trail segments that provide connections to other recreational facilities, implementation of traffic calming measures to increase the safety of the Grand Round, and the continued upgrading of existing bicycle and pedestrian facilities as opportunities arise.

The Saint Paul Grand Round Master Plan continues a vision begun before the turn of the last century. By continuing implementation of this vision, Saint Paul will ultimately benefit from an extensive system of bicycle and pedestrian facilities that connect parks, natural areas, and neighborhoods. The Grand Round can unite the city of Saint Paul in a common vision of balance between the built and the natural world.

1.0 – Introduction

1.1 Project Purpose

The purpose of this project is to support the full development of the Saint Paul Grand Round, a 29-mile recreational greenway for biking, walking and in-line skating that connects neighborhoods, regional parks and the Mississippi River by boulevards and trail facilities. The Saint Paul Grand Round follows a historic route first conceived over a century ago by legendary landscape architect Horace William Shaler Cleveland. He envisioned an "emerald necklace" of parkways and paths throughout Minneapolis and Saint Paul, connecting Saint Paul's premier parks at Lake Como, Lake Phalen and Indian Mounds with 13 miles of magnificent Mississippi River views. Although Johnson, Midway and Wheelock Parkways were completed, linking Como, Phalen and Indian Mounds Parks, efforts to finish the Saint Paul Grand Round withered in the early twentieth century.

This technical report describes the planning process for completing the historic route of the Saint Paul Grand Round, outlines the development concept for the route, describes route segments and proposes improvements for each of the segments, provides design guidelines for development of the Grand Round, outlines preliminary phasing and cost estimates for completion of the Grand Round, and sets the stage for future actions. A separate report on interpretive themes and sites along the Saint Paul Grand Round was also prepared by The 106 Group, and sections have been summarized in this technical report where necessary to provide clarification.

Creating a fully realized Saint Paul Grand Round is a multi-faceted project that includes work in economic development, neighborhood revitalization, the environment, arts, health and education. The Saint Paul Grand Round will also provide linkages between and among many natural, cultural and historic features that reflect many of the intrinsic qualities of Saint Paul and the Grand Round.

Features of the fully developed Saint Paul Grand Round should include:

- Safe, year-around facilities for bicycling, walking and in-line skating
- Signage and on-route graphics to visually define and direct people to and around the Saint Paul Grand Round
- Interpretive signage and information kiosks informing users of the many natural, historic and cultural features along the route
- Native landscaping and community gardens
- Public art and interactive amenities such as environmental sculptures and street furniture
- Additional amenities such as lighting, scenic overlooks, parking areas and rest stops with convenience features (drinking fountains, benches, bike racks, pay phones, trash receptacles, etc.) that add to the comfort, safety and enjoyment of visitors to the Saint Paul Grand Round.

The roadways adjacent to the Saint Paul Grand Round should also include traffic calming measures, where needed, to provide a scenic driving opportunity for those who are unable to take advantage of the multi-use trail.

1.2 Project History

Early efforts to establish the Saint Paul Grand Round around 1900 resulted in the construction of Johnson, Wheelock and Midway Parkways. Railways blocked development of parkways along the Mississippi River and the vision of an encircling parkway system in Saint Paul languished.

As fiscal agent and major sponsor of the Saint Paul Classic Bike Tour, the Saint Paul Neighborhood Energy Consortium (NEC) is leading the collaborative effort to resurrect the idea of making the historic route of the Saint Paul Grand Round a permanent scenic byway loop – a vital part of the community's daily life and an attraction to visitors. The completed Saint Paul Grand Round will not only link the prestigious green spaces envisioned by H.W.S. Cleveland, the original designer, but will also connect Saint Paul's diverse neighborhoods and serve as an attractive alternative transportation route for commuting to work, school and recreational destinations.

NEC is a nonprofit coalition of community organizations whose mission is to provide information, services and programs that contribute to an environmentally responsible community. As such, NEC is interested in the alternative transportation function of the Saint Paul Grand Round within the community.

1.2.1 Funding Sources

During 1998 and 1999, NEC raised $70,000 in funding to complete a master plan for the Saint Paul Grand Round. Among those contributing to the effort were The McKnight Foundation, The Beim Foundation, The St. Paul Companies, the Carolyn Foundation, the City of Saint Paul Division of Parks & Recreation and the Historic Saint Paul Foundation. In addition, over 400 individuals have made personal contributions toward the establishment of the Grand Round.

NEC is currently collaborating with the City of Saint Paul to secure funding for additional physical improvements to the route as recommended in the Master Plan. NEC intends to seek future funding through such sources as the City of Saint Paul STAR Grant and the City of Saint Paul Capital Improvement Budget Program. Additional funding will be sought from state and federal funding programs, foundation and corporate funding, and private sources/individuals.

1.2.2 Saint Paul Classic Bike Tour

Since 1995, the Saint Paul Classic Bike Tour has promoted the Grand Round and the effort to make the route a permanent greenway. Organizers of the Saint Paul Classic Bike Tour

originally collaborated to launch the bike ride as a way of introducing biking enthusiasts to this route and bringing attention to the need to complete the Grand Round. With the implementation of the master planning process, the dream of a completed route can become a reality.

In just five years, the Saint Paul Bike Classic has grown to be one of the two largest bicycling events in the state, introducing nearly 14,000 bicyclists to the route of the Saint Paul Grand Round. In 1999, over 5,000 riders participated; 23 percent were from Saint Paul, 66 percent were from Minneapolis and the greater metropolitan area, and the remainder were from greater Minnesota and other states.

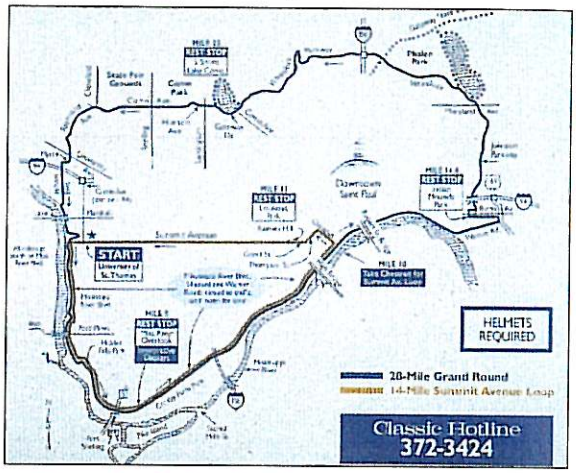


Figure 1 – Saint Paul Bike Classic Route

1.3 Project Intent and Vision

The idea of the Saint Paul Grand Round is not new. The route of the Saint Paul Grand Round follows the historic route conceived by H.W.S. Cleveland over a hundred years ago as a system of parkways connecting Saint Paul's emerging park system with the Mississippi River. Unfortunately, while several parkway segments were completed in the early 1900s, the overall plan for the Saint Paul Grand Round was shelved in the 1930s. Cleveland's similar vision of connecting parkways on the west side of the Mississippi has nearly been completed as the Minneapolis Grand Rounds.

The resurrected Saint Paul Grand Round will implement Cleveland's vision connecting parkways, linking Saint Paul's diverse neighborhoods and serving as an attractive transportation alternative for commuting to work, school and recreational destinations such as Harriet Island, Lake Como and the Science Museum of Minnesota. Since the Saint Paul Grand Round intersects or connects with numerous local, regional and state trails, it will also increase access to natural, historic, cultural and recreational amenities in the greater metropolitan area.

The establishment of the Saint Paul Grand Round as a recreational greenway will help Saint Paul balance its built and natural environments. By giving residents easy access to the natural environment from their own backyard, the Grand Round will enable people will be able to experience nature without leaving the city. A nearby recreational greenway will also create attractive and accessible places to exercise, thereby encouraging healthy lifestyles.

Like other trail systems in the state, the Saint Paul Grand Round will attract visitors from the greater metropolitan area and greater Minnesota. The route currently draws riders from across the region during the Saint Paul Classic Bike Tour.

1.4 Project Process/Community Involvement

Community support for the Saint Paul Grand Round is strong and continues to grow. This master plan was developed through a cooperative process, with participation from neighborhoods and agencies, and many other groups and individuals. Two advisory groups were established to guide the process and provide agency and community input. A citizens advisory committee (CAC), comprised of representatives of adjacent neighborhoods, was convened to make recommendations on amenities and improvements to the route and communicate progress to the community. A technical advisory committee (TAC), with representatives from the City of Saint Paul, NEC and SRF Consulting Group, Inc., evaluated the feasibility of community-recommended route improvements, and provided input on maintenance, costs and other technical issues.

The City of Saint Paul Division of Parks & Recreation and the Department of Public Works are key partners in designing and installing physical improvements to the route, and are represented on both the TAC and CAC. Other agencies and organizations involved in the planning process include Great River Greening, Saint Paul Riverfront Corporation, Saint Paul Bicycle Advisory Board, Mississippi National River & Recreation Area, Saint Paul and Ramsey County Friends of the Parks and Trails, Science Museum of Minnesota, The Historic Saint Paul Foundation and Public Art Saint Paul. The Saint Paul City Council passed a resolution supporting the development of the Saint Paul Grand Round, as have eight of Saint Paul's District Councils and three community-based organizations.

2.0 – Regional Land and Community Context

2.1 Regional Context

The strength of the Saint Paul Grand Round lies not only in the route itself, but also in its connections to other pedestrian and bicycle facilities. The Twin Cities Metropolitan area is home to an extensive system of parks and trails, which offer numerous recreational opportunities and connections between communities.

A significant portion of the Saint Paul Grand Round route also follows along the Mississippi River, which is of national importance. The Mississippi National River and Recreation Area was added to the National Park System in 1988. Portions are also concurrent with the nationally designated Great River Road and the Mississippi River Millennium Trail. In addition, the route of the Grand Round passes by the Minnesota State Fairgrounds, which is of state-wide importance.

2.1.1 Metro-wide Park and Trail System

The Metropolitan Council, through local agencies, is funding and implementing a seven-county system of parks and trails. These regional park and trail corridors are designed to preserve unique or threatened ecosystems and provide recreational opportunities for metro-area residents. Many of the larger parks operated by city or county parks departments are considered to be regional parks because of their size, ecological diversity and recreational programming. The Grand Round passes through or very close to several regional parks or regional trails as designated by the Metropolitan Council:

Big Rivers Trail

- Mississippi Gorge Regional Park
- Hidden Falls-Crosby Farm Regional Park
- Lilydale-Harriet Island Regional Park & Trail
- Indian Mounds Regional Park
- Battle Creek Regional Park
- Phalen-Keller Regional Park
- Como Regional Park
- Big Rivers Trail
- Mississippi East Bank Regional Trail

In addition to these regional facilities, the Minnesota Department of Natural Resources operates several facilities within easy reach of the Grand Round:

- Gateway State Trail
- Fort Snelling State Park

The Minneapolis Grand Rounds, a city-owned facility with many regional qualities, is designated as a Minnesota State Scenic Byway and a National Scenic Byway. It offers access

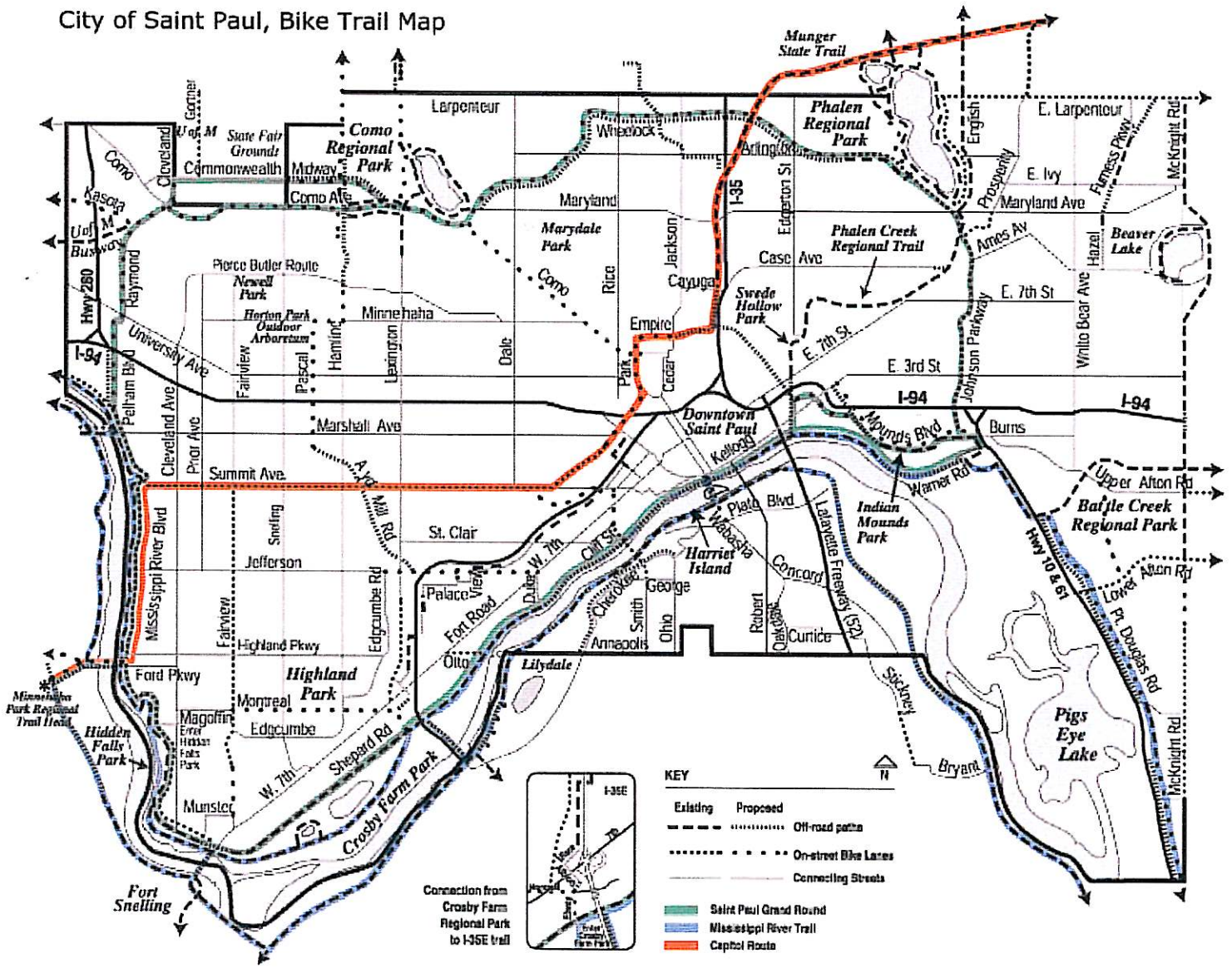


Figure 2 – City of Saint Paul, Bike Trail Map

to the Minneapolis Chain of Lakes, and regional trails stretching to the western suburbs. This trail facility runs along West River Parkway, across the Mississippi River from the route of the Saint Paul Grand Round. Opportunities exist for connections between the two systems.

2.1.2 City Trails and Parks

The City of Saint Paul Division of Parks & Recreation operates numerous neighborhood and city parks (some of which are listed above, under regional facilities). Representative major facilities that are located along or near the Grand Round are Lake Como, Highland Park and Swede Hollow Park. Several smaller parks and ornamental spaces also located along the route, including Desnoyer Park and Irvine Park, among others.

The City also owns bicycle trails and on road facilities, in addition to the facilities designated as regional trails. The most significant of these include:

- Bruce Vento Trail
- Battle Creek Trail
- Trails within Phalen-Keller Regional Park
- Trails along Mississippi River Boulevard
- Trails within Como Park
- Summit Avenue bicycle lanes

The Saint Paul Parks & Recreation Plan (August 1996), a chapter of the City's Comprehensive Plan, also supports the development of additional trail connections within the community. In particular, Objective 3: Develop park and open space connections, states, " Park and open space connections provide the means for moving between parks, moving within parks, and getting to parks, in a safe, convenient, and enjoyable manner. While the connections usually take the form of trails, linear parks or parkways, sidewalks and streets providing access to parks through neighborhoods, are also important connections. As such, it is essential to coordinate and integrate our trails and parkways with the City's network of sidewalks and streets to provide continuous, convenient, and safe access to, between, and within, parks."

". . .give priority to the development of trails which complete the principal recreational trails in Saint Paul, including the Saint Paul Grand Round Loop"

Saint Paul Parks & Recreation Plan, 1996

Policy 11(d) of this objective specifically supports the completion of the Grand Round: "Pursue opportunities to expand the City's recreational trail system and give priority to the development of trails which complete the principal recreational trails in Saint Paul, including the Saint Paul Grand Round Loop, Mississippi River Trails, Capitol Route, and the Phalen Creek Trail."

2.1.3 Major Regional Initiatives

There are many recent and planned construction projects that specifically consider the bicyclist. These regional initiatives will make the region more bicycle-friendly and offer better connections across rivers and highways, and between communities. Several of these initiatives offer connections to the Saint Paul Grand Round:

Harriet Island Regional Park

- ***The Wabasha Street Bridge*** includes wide pedestrian/bicycle sidewalks, which offer a connection across the Mississippi River between downtown Saint Paul and existing trails on Harriet Island and the south side of the river.
- ***Harriet Island Regional Park*** is undergoing a renovation; Phase I will be complete in the fall of 2000. The newly redesigned park will maintain existing bicycle trails on the top of the levee and improve connections into the park.
- ***The Midtown Greenway*** is a major initiative being spearheaded by the City of Minneapolis. The corridor follows a rail line that runs just north of Lake Street. When completed, the trail will stretch east to the Mississippi River, offering a possible connection into the Saint Paul Grand Round on an existing railroad crossing of the Mississippi River to Pelham Boulevard.
- ***The Big Rivers Trail Extension*** will improve and extend the existing Dakota County Big Rivers Trail. The existing trail begins at Lilydale-Harriet Island Regional Park and progresses southward through Mendota. The extension would connect the existing trail to the I-494 bridge and the Minnesota Valley National Wildlife Refuge, and provide an improved connection across the Mendota Bridge to Fort Snelling State Park and destinations southwest. Reconstruction of the I-35E bridge will provide direct connections to the Big Rivers Trail.
- ***The East Bank Regional Trail*** initiative is the development of the Grand Round Route from Crosby Farm Regional Park to Battle Creek Regional Park. Much of the trail infrastructure is in place and funding has been secured for constructing the remaining segments within Old Shepard Road right-of-way. This initiative is an excellent opportunity to implement elements of the Grand Round Vision.

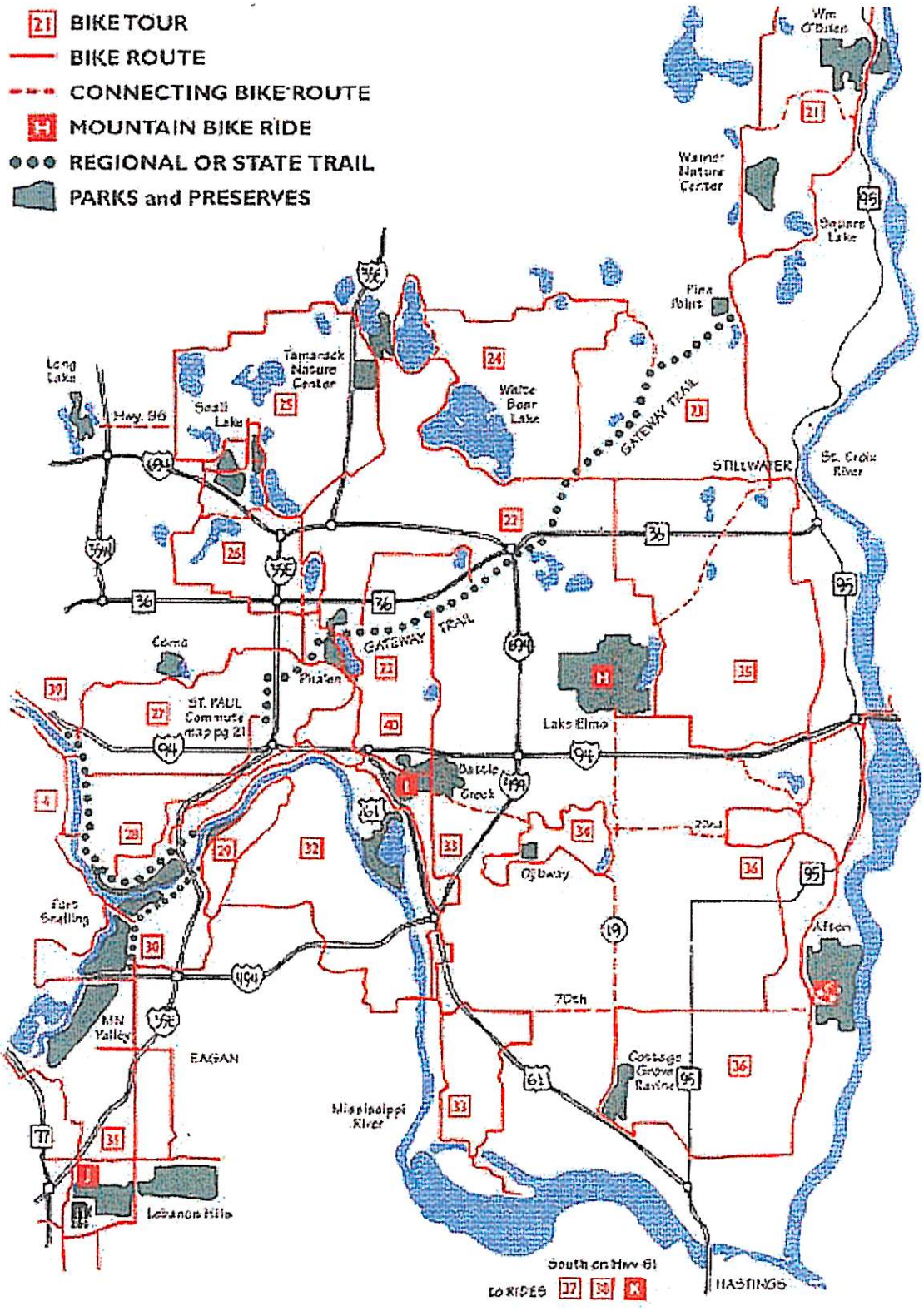


Figure 3 – Regional Bike System

2.2 Community Context

The Saint Paul Grand Round supports the vision for Saint Paul outlined in the City's Comprehensive Plan. In particular, development of the Grand Round provides an opportunity to integrate the concepts outlined in the "Ten Principles for City Development" from the Land Use Plan portion of the Saint Paul Comprehensive Plan, adopted by the City Council in March 1999:

- ***Evoke a sense of place.*** Saint Paul has a unique and beautiful natural setting, many exceptional buildings and neighborhoods, and a rich history. These assets will be enhanced.
- ***Restore and establish the unique urban ecology.*** As transportation and industry change, the river and railroad corridors present great opportunities to re-establish a balance between urban and natural systems.
- ***Invest in the public realm***. Streets, sidewalks, parks, and bluff and ravine edges are the stage sets for the public life of the city. As connecting routes, these places contribute to a sense of community and attract investment.
- ***Broaden the mix of land uses.*** In the downtown and neighborhood commercial centers, a mix of land uses creates more vibrant urban life by encouraging people to live, work and recreate in the city.
- ***Improve connectivity.*** Within neighborhoods and communities, and even citywide, urban life is improved by facilitating movement, access and connection. Parks, schools, institutions, businesses and housing should create synergies, but they don't if they are disconnected.
- ***Ensure that buildings support broader city-building goals.*** Buildings should make a contribution to their neighborhood and the public realm. For example, neighborhood commercial buildings should help to make city sidewalks good places for pedestrians.
- ***Build on existing strengths.*** The positive impact of the city's urban development successes can be increased by extending and replicating them. Target investment dollars where positive change is underway.
- ***Preserve and enhance heritage resources.*** Saint Paul has a rich legacy of buildings, landscapes and monuments that define a city rooted in local history.
- ***Provide for a balanced network for movement.*** A balanced network for movement supports travel by car, public transportation, bicycle and foot. Rights-of-way should be designed to be shared, attractive and safe for all modes of movement. At present the automobile is given such high priority that other forms of transportation are often unattractive.
- ***Foster public safety.*** Communities are safe when there are caring people around who watch the streets, alleys and parking lots. Continuous urban fabric with active uses provides and informal means of surveillance.

2.2.1 Neighborhoods

The Saint Paul Grand Round will not only be a link between green spaces, it will also connect Saint Paul's diverse neighborhoods and serve as an attractive non-motorized transportation alternative for commuting to work, school and recreational facilities. Establishing of the Saint Paul Grand Round will help Saint Paul balance its built and natural environments. By giving residents easy access to the natural environment from their own backyards, the Grand Round will enable people to experience nature without leaving the city. A nearby recreational greenway will also create attractive and accessible places to exercise, thereby encouraging healthy lifestyles.

The Saint Paul Land Use Plan also encourages the development of neighborhoods as urban villages throughout the city. By providing connections among and between these neighborhoods, the Saint Paul Grand Round will enhance resident's sense of place and encourage connections between the resident's themselves.

2.2.2 Small Area Plans

The Saint Paul Grand Round also supports and complements many of the small area plans developed for many neighborhoods along the route. The development of the Saint Paul Grand Round is a collaborative effort that will continue to include the neighborhoods, the District Councils and other resident groups that are interested in this project. By incorporating the connectivity and sustainability concepts of neighborhood development, support for the Grand Round can be increased and access to the Grand Round through neighborhood connections will be enhanced.

3.0 – Development Concepts

3.1 Historic Concepts

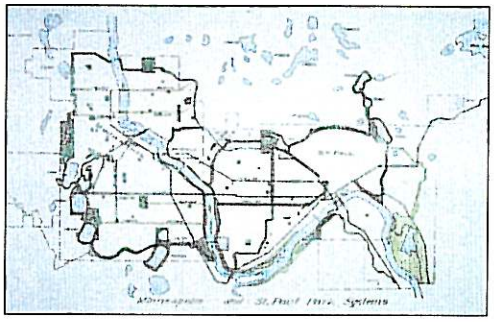
The Saint Paul Grand Round will provide opportunities for interpretation of the many natural, historic and cultural resources along the route. The history of Saint Paul is inextricably linked to these resources, which represent the city's past as well as its future. The development of the Grand Round provides an unparalleled opportunity to re-connect with the community's past and preserve it's resources for the future.

3.2 Interpretive Themes

The 106 Group identified eight interpretive themes for the Saint Paul Grand Round. These interpretive themes, and associate sites or resources, provide opportunities for both residents and visitors to connect to the community's past. These themes are an intrinsic part of Saint Paul and the Grand Round, and help maintain and enhance a sense of place. Each of the eight themes is summarized below and discussed in more detail in the interpretive themes and site report.

Interpretive Themes

1. Creation of Saint Paul's Park System
2. The Mississippi River and Natural Landscapes
3. Immigrant Communities in Saint Paul
4. Residential Patterns
5. Paddlewheels and Steel Wheels
6. Early Industry
7. American Indian Heritage Sites
8. Saint Paul Today



3.2.1 Creation of Saint Paul's Park System

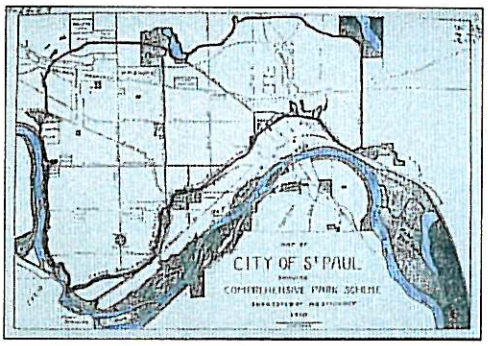
Since the concept of the Saint Paul Grand Round grew out of a desire to establish parkways linking the premier parks within Saint Paul, there are numerous interpretive opportunities along the Saint Paul Grand Round related to the creation of Saint Paul's Park System. Specific interpretive sites along the Saint Paul Grand Round relating to this theme include Como Park, Phalen Park, Wheelock Parkway, Johnson Parkway, Midway Parkway, Mounds Parkway, Mississippi River Boulevard and Harriet Island.

Planning for the Saint Paul Park system began in 1872, when prominent landscape architect H. W. S. Cleveland spoke of his vision to preserve large areas of green space for public use. Cleveland's vision was influenced strongly by park planning efforts in England and the United States, particularly New York City's Central Park, which was begun in 1856 by landscape architects Frederick Law Olmsted and Calvert Vaux. The intent of this new park movement was to create an escape from increasing urban congestion and allow opportunities for citizens to experience healthy, wholesome and morally rejuvenating natural environments.

Cleveland's vision for a system of parks and parkways for the Minneapolis-Saint Paul metropolitan area was further refined over the years. In an 1883 address to the Minneapolis Park Board, Cleveland expressed his preference for an extended system of boulevards, or ornamental avenues, rather than a series of detached open areas or public squares. This system of parkways would create a unified system of pleasure drives connecting large park areas. From this was born the Grand Rounds, a system of two encircling routes – one in Minneapolis and one in Saint Paul. The Minneapolis Grand Rounds was developed and designated as America's first urban National Scenic Byway in 1998. Although several segments were constructed, the Saint Paul Grand Round was never fully developed.

While Cleveland's 1872 speech brought about immediate action by the Saint Paul Common Council with the purchase of land for Como Park, it took another 20 years to add the City's second park, Phalen Park, in 1892. In 1892, the City also hired long-time Parks Superintendent Frederick Nussbaumer, who coordinated the purchase and management of parkland within the City until 1922.

During Nussbaumer's tenure, a new national movement called City Beautiful began to take shape. Ushered in by the 1891-93 World's Colombian Exposition in Chicago, the City Beautiful movement created an impetus for order and harmony in city planning. Among its many design elements, the City Beautiful movement created a desire for landscaped "boulevards" or "parkways" within urban settings, a concept that supported H.W.S. Cleveland's concepts developed in the early 1880s. Across the United States, roadways were widened, straightened and landscaped with majestic street trees to create an aesthetically pleasing driving environment. Saint Paul began planning for the parkways in 1895 with the intent of linking various parks within the City. In the early- to mid-1900s, Saint Paul constructed Wheelock, Johnson, Midway and Mounds parkways along with Mississippi Boulevard, forming major segments of the Saint Paul Grand Round.



The focus of Saint Paul's parks changed during the early 1900s to recreational activity centers rather than naturalistic sites. Many of Saint Paul's larger parks retain the recreational feel established during this time.

3.2.2 The Mississippi River and Natural Landscapes

Much of the route of the Saint Paul Grand Round traverses areas with scenic vistas and primary natural landscapes along the Mississippi River and associated bluff areas. Many of these landscapes are associated with unique geologic occurrences and provide many opportunities for natural landscape interpretation along the Saint Paul Grand Round.

For the past 12,000 years, the Mississippi River has been the carving the scenic bluffs we see today. These bluffs are primarily soft, white sandstone (St. Peter Sandstone), which was at one time mined for glass production. This sandstone is capped by a hard, creamy limestone (Plateville Limestone). During the last period of glaciation, the Mississippi River was a relatively small tributary to Glacial River Warren to the southwest (which is now the Minnesota River). As these rivers cut into the ancient rock, the differential hardness of the two stones resulted in the unique bluff features along the river. Glacial features such as Hidden Falls, Fountain Cave, Slot Canyon and Horseshoe Bend Terminal Moraine provide interpretive opportunities along the route of the Grand Round.

The Mississippi River is part of one of the most complex ecosystems in the world. It is a critical migration corridor for millions of birds and is home to a wide array of wildlife, fish and plants. The route of the Grand Round provides numerous opportunities for bird watching

and interpretation of natural plant communities, including upland prairies and river valley forests.

The area of the Great River Greening Project is also located along the riverfront route of the Saint Paul Grand Round. This five-year project is dedicated to restoring the original vegetation on both sides of the Mississippi River, from the High Bridge to Holman Field. By restoring native grasses, shrubs and trees along the riverfront, a natural wildlife corridor will be provided between Pig's Eye Lake, Lilydale-Harriet Island and Hidden Falls-Crosby Farm Regional Parks. This project will provide additional opportunities for interpretation of the natural landscape.

The upland areas along the route of the Grand Round also include numerous ravines, lakes and tributary creeks of the Mississippi River. Interpretive opportunities along the Grand Round will provide the visitor with a better understanding of this unique ecosystem, as well as the physical features that have created it.

3.2.3 Immigrant Communities in Saint Paul

Three important immigrant communities – Upper Landing/Little Italy, Swede Hollow and West Side Flats – are part of the history of Saint Paul and are located along the Saint Paul Grand Round. These three communities were settled during the immigrant population explosion of the 1850s and 1860s with many of the new immigrants helping to build Saint Paul and working within the many emerging industries.

Upper Landing/Little Italy was located in the Mississippi River floodplain southwest of downtown. The area was settled in the 1880s by German and Polish immigrants, but was soon transformed into a primarily Italian community. Immigrants took manufacturing jobs and other hard labor employment to make ends meet. Little Italy existed until 1959, when Little Italy was redeveloped as an industrial area.

Swede Hollow is located in the valley of North Phalen Creek northeast of downtown. Scandinavians began settling in the area in the 1850s and constructed homes along the ravine. Employment for these immigrants included the railroads, mills, manufacturers and breweries. Swede Hollow existed as a haven for immigrant populations until the late 1950s.

West Side Flats, located across the Mississippi River from downtown, was predominantly settled by Jewish immigrants in the late 1880s. The area is located within the Mississippi River floodplain below the west bank of Saint Paul. Again, these immigrants found employment gained through railroads and manufacturers. West Side flats existed as an immigrant community until 1964, when it was redeveloped as an industrial area.

Flooding was a continual problem for the communities on the banks of the Mississippi. Eventually, many of the original immigrant sites in Saint Paul were destroyed during the 1950s, when the city began to address the substandard living conditions for many of its immigrant residents. Areas such as Little Italy, Swede Hollow and West Side Flats were condemned and leveled to make way for industrial parks or simply to clear out areas deemed

unsanitary and over crowded. While these sites no longer exist, their histories remind us how immigrants to the city overcame the economic and cultural hardships of their new lives in America and how the small, enclosed community helped in their assimilation and growth into the American society.

3.2.4 Residential Patterns

Current residential patterns in Saint Paul were in many ways influenced by the ethnic background of its settlers. While recent immigrants often settled with others from their homeland or near the industrial jobs located in downtown, the wealthy built homes along the high bluffs lining the Mississippi River and away from the noise and congestion of downtown. The Grand Round passes several unique and historical residential neighborhoods that illustrate settlement patterns in Saint Paul, including Irvine Park, Dayton's Bluff and St. Anthony Park.

Irvine Park developed in the mid- to late-nineteenth century. This area is noted for its early Victorian architectural styles and settlement by Saint Paul's well-to-do. Irvine Park was transformed into a working class neighborhood in the early twentieth century. The Irvine Park neighborhood is located between West Seventh Street and Shepard Road immediately southwest of downtown.

Dayton's Bluff, which is located on the bluffs northeast of downtown, was recognized early for its picturesque setting and long vistas of the Mississippi River. The area transformed into a middle-class area in the 1880s as transportation and access increased. As a result, many of the neighborhoods' affluent relocated to Summit Avenue.

St. Anthony Park was platted by H. W. S. Cleveland as a picturesque suburb in the 1880s. The area is located near the University of Minnesota – Saint Paul campus along Como Avenue. This area today is represented by a mix of architectural styles; it houses a number of students, as well as professors and other professionals.

3.2.5 Paddlewheels and Steel Wheels

The Mississippi River has long served as a transportation route, beginning with the American Indian peoples. The location of the Lower Landing at the head of continuous navigation on the Mississippi River gave Saint Paul an advantage in commerce, which was further enhanced with the advent of the railroads. Several key sites that helped to shape Saint Paul into a regional transportation hub exist along the Saint Paul Grand Round.

Saint Paul's strategic location made it a trading point connecting the Mississippi River steamboats and the Red River ox carts. After 1851, Saint Paul quickly expanded to become a staging point for settlers moving west. As the population of the area grew, Upper Landing and Lower Landing became the two critical river ports within the city. Steamboat traffic became the dominant mode of transportation and entered one of the two ports as a final destination. As a result, the two landings competed heavily to become the city's commercial center.

During the 1870s, as the railroads began to play a significant role in the development of the city and Saint Paul became a regional transportation hub, as the steamboat/ox cart network declined in importance. Many regional and national railroads passed through Saint Paul, with many of them headquartered in the city. By 1900, Saint Paul had become a gateway to the northwest.

Specific interpretive sites related to this theme along the Saint Paul Grand Round include Upper Landing, Lower Landing, Lowertown, Lock and Dam No. 1, Short Line Railroad (Milwaukee Road), Omaha Swing Span Railroad Bridge, Westminster Junction, Union Depot, Drewry Bridge No. L9218 (underpass to Swede Hollow) and Johnson Parkway Bridge No. 90422.

3.2.6 Early Industry

Early industry in Saint Paul was afforded access to many key transportation routes, which allowed the city to grow quickly and prosper. The route of the Saint Paul Grand Round connects several sites that illustrate the evolution of the city's industrial base.

Milling was one of the earliest industrial activities pursued in Saint Paul. Although Saint Paul never became a center for milling, a total of 14 grain mills operated in Ramsey County before 1900.

Breweries were also an important early industry in the city, with a total of 57 brewer's licenses held during the late 1850s. Many of the original breweries were absorbed by larger breweries or were closed during Prohibition in the 1920s.

During early development of Saint Paul, both business and residential settlement patterns were dictated by the proximity to the Mississippi River. With the advent of the railroads, the relationship to the river was less important and new industrial areas were developed throughout the city. By the mid-1870s, manufacturing plants were being established along the East Side railroad corridor, with more than 30 manufacturing plants in existence in this area by the early twentieth century. Hamm's brewery was established in 1864 and the 3M plant in 1910. Other industries evolved along with technology and distinguished Saint Paul as a leader in manufacturing and industry.

Specific interpretive sites related to this theme along the Saint Paul Grand Round include Hamm's Brewery, Schmidt Brewery, Grain Elevator/Farmer's Union Terminal, the Ford Plant and the 3M Plant.

3.2.7 American Indian Heritage Sites

There are a number of heritage sites related to the history of American Indian peoples along the Saint Paul Grand Round. However, it is important to note that no American Indian sites or significant places or histories should be interpreted without partnership and consultation with the appropriate tribes, of which there are 11 in Minnesota. The Dakota Nation has strong historical ties to this area, and there are opportunities for partnership with the Dakota communities in the area. The interpretive themes and sites report by The 106 Group contains additional information on contacts for potential partnering related to development or interpretation of American Indian sites or cultures
along the route of the Grand Round.

3.2. 8 Saint Paul Today

River transportation remains a vital industry, Saint Paul is still a city of immigrants, and city parks are as popular as ever. The following is a synopsis of the current status of the historic trends discussed in the draft report.

Saint Paul's Park System

Saint Paul's current parks and parkways largely conform to the visions of Cleveland and other early park planners. Como Park is as popular as ever, and some of its well-known attractions, such as the Conservatory, have had extensive restoration work in recent years. A phenomenon that Cleveland surely would have embraced but could not have foreseen is the redevelopment and greening of the downtown riverfront, crowned by the renovation of Harriet Island Park.

Immigrant Communities

Recent immigrants continually add diversity to Saint Paul's ethnic make up. While the immigrants are not as concentrated in ethnic enclaves as during the early twentieth century, there are areas in the city with distinctive ethnic affiliations. For example, many Hmong live in the Frogtown neighborhood, and there is a strong Hispanic community on the City's west side.

Paddlewheels and Steel Wheels

The rise of cars and trucks led to a decline in railroading as well as to construction of I-94, I-35E, Shepard Road, Kellogg Boulevard and other thoroughfares. The once massive railyards in Lowertown are largely gone, and the Union Depot and rail-related warehouses have been converted to other uses. The barging industry continues to carry bulk items such as gravel, coal and grain. In addition, due to efforts to improve water quality over the past 30 years, pleasure boating has rebounded on the Mississippi as well.

Early Industry

Since World War II, Saint Paul's industrial base has seen both change and consistency. Brewing, a longtime staple of Saint Paul manufacturing, has changed with the times. Although the former Hamm's Brewery has shut down, the old Schmidt Brewery is still in operation as the Landmark Brewery, and the expanded Summit Brewery taps into the microbrew market. The Ford Plant in Highland Park is still going strong, producing Ranger pickup trucks. In addition newer, high-tech companies, such as Lawson Software, are taking up residence in the City, helping to create a diverse manufacturing base.

Residential Patterns

Like most American cities, Saint Paul's population declined steadily during the 1950's through the 1980's as residents left for the suburbs and the housing stock aged. However, a new trend that began during the 1990's reversed the residential decline, and it continues to grow. New residents are settling in traditional neighborhoods alongside longtime residents. The older city neighborhoods are being revitalized through preservation and restoration of existing housing and by in-fill construction of new housing.

3.2.9 Existing Historical Markers

There are six existing historical markers along the route of the Saint Paul Grand Round. These markers commemorate various aspects of Saint Paul's history and include:

- Saint Paul's Holman Field (an airport)
- Lower Landing or Lampert's Landing (a steamboat landing)
- Lock and Dam No. 1 (a hydroelectric turbine)
- Fountain's Cave (an early settlement site in Saint Paul)
- Carver's Cave (an American Indian sacred cavern site)
- Mounds Park (an American Indian burial mound group)

3.3 Character of the Saint Paul Grand Round

As envisioned by H.W.S. Cleveland, the Saint Paul Grand Round is a 29-mile series of parkways encircling Saint Paul and linking the city's premier parks at Lake Como, Lake Phalen and Indian Mounds with the views of the Mississippi River

3.4 Existing Facilities

Portions of the Saint Paul Grand Round exist today. Many segments of the route, such as Mississippi River Boulevard, have pedestrian and bicycle facilities in place. The existing facilities range from sidewalks, to bike lanes, to fully developed trails with separated bike and pedestrian elements. Suggested improvements – expansion of facilities, signage, native landscaping, public art, and other amenities – will enhance and improve existing facilities to give the system a consistent look and feel.

3.5 Needed Connections

Several connections are also desirable to enhance the Saint Paul Grand Round and increase access to natural, historic, cultural and recreational amenities throughout the greater metropolitan area. Potential connections are summarized below.

3.5.1 Minneapolis Grand Rounds

A connection to the Minneapolis Grand Rounds would complete the plan of H.W.S. Cleveland and his grand vision for a parkway system that spans the twin cities of Saint Paul and Minneapolis. The connection to the Minneapolis Grand Rounds would create a seamless network of pedestrian and bicycle facilities that is unmatched by any other metropolitan area in the United States. Connections could occur at the Ford Bridge and Lake Street Bridge

crossings of the Mississippi River. In addition, the Minneapolis Midtown Greenway could be connected to Pelham Boulevard via an existing active railroad bridge currently owned by the Canadian Pacific Railroad.

3.5.2 Gateway State Trail

A link to the Gateway State Trail in the vicinity of Wheelock Parkway will provide a connection to a system that will eventually include a multi-use trail connecting the Twin Cities metropolitan area with Duluth. In the short term, this link will provide access to completed portions of the Gateway State Trail, as well as trails in the adjacent communities of Roseville, Maplewood and North Saint Paul.

3.5.3 Bruce Vento Regional Trail

As an extension of the Swede Hollow Trail, the Bruce Vento Regional Trail will provide access to the east and northeast. This trail will eventually connect to the Gateway State Trail and provide direct and indirect connections to trails in adjacent communities and to the larger metropolitan area.

3.5.4 Big Rivers Trail

By making a link to the Big Rivers Trail across the Wabasha Street bridge, or via the reconstructed 35E bridge connections could be made to the southern metro area and amenities such as Lilydale Regional Park, Fort Snelling State Park and the Minnesota River Valley Interpretive Center.

3.5.5 Battle Creek Trail

A connection to the Battle Creek Trail will provide access to Battle Creek Regional Park eastern Saint Paul, and the communities of Maplewood and Woodbury.

3.5.6 University of Minnesota

A connection to the University of Minnesota – Minneapolis campus could be provided along the transit-way from Como Avenue to University Avenue. The transitway is currently bus-only; opening up to allow bikes would create a direct access to the Grand Round for students and other neighborhood residents who are interested in the route as an alternative transportation route and/or a recreational facility.

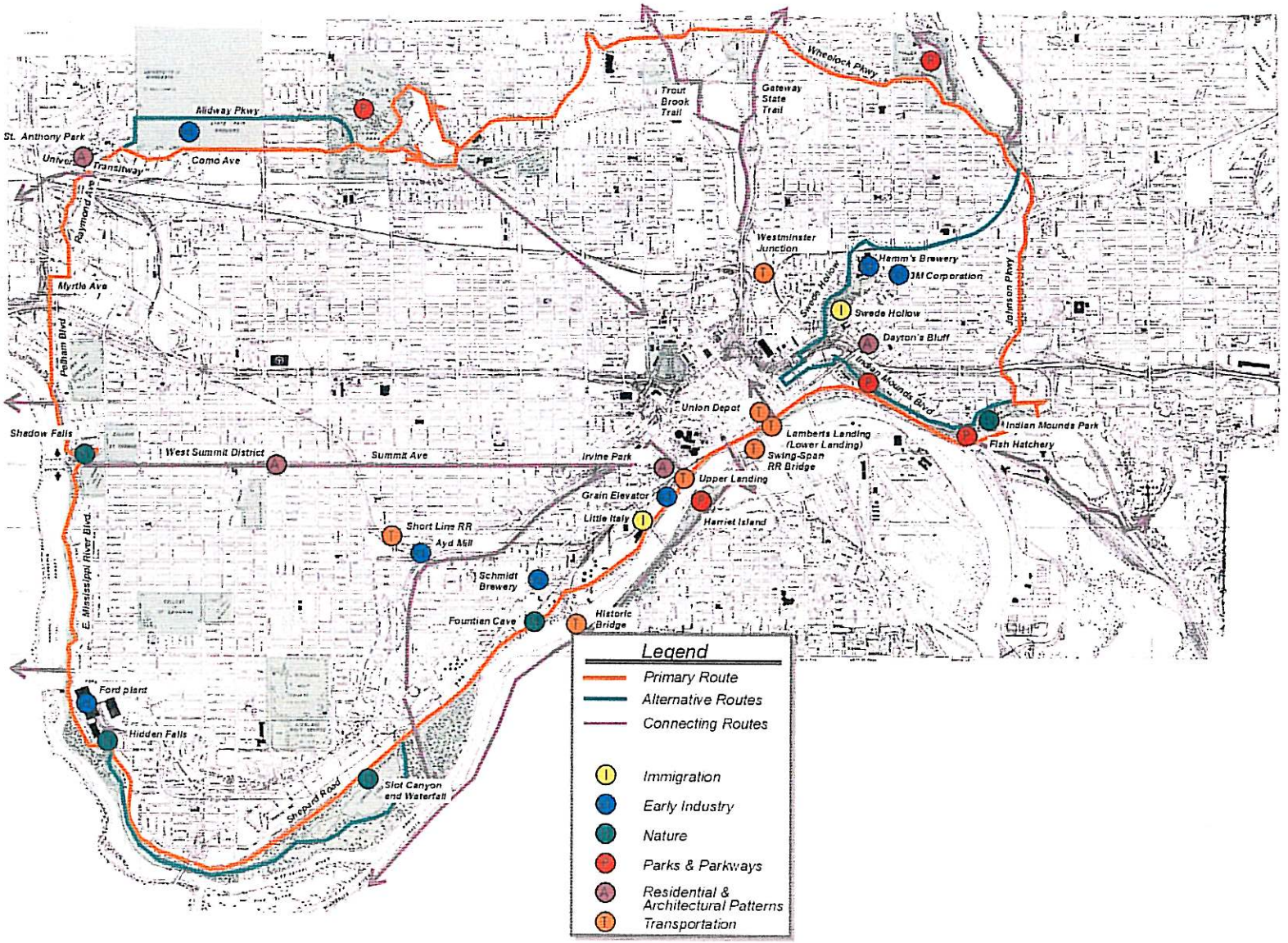


Figure 4 – Themes & Cultural Sites

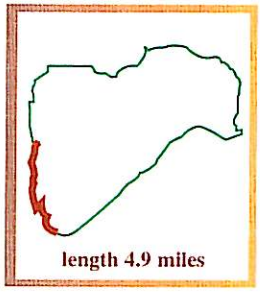
4.0 – Description of Route Segments and Proposed Improvements

This chapter looks at the proposed route of the Saint Paul Grand Round segment by segment, analyzing and making recommendations for each. The description of each segment begins with a general overview of the route, then several elements are discussed that relate directly to the Grand Round.

- The Existing Conditions section analyzes the bicycle, in-line skating and pedestrian facilities present in the segment. Also included is a general analysis of the roadway and major crossings exist along the segment.
- The Design Opportunities section lists existing conditions that could lend themselves to the implementation of bicycle, in-line skating and pedestrian facilities.
- The Design Constraints section lists existing conditions that may conflict with the bicycle, in-line skating and pedestrian facility implementation.
- The Proposed Improvements section lists initiatives that could be undertaken, based on an analysis of the existing conditions of the segment and consist with recommended design guidelines (see Chapter 5).
- The Interpretation section lists possible interpretive nodes, with their themes or interpretive opportunities, found along the segment. A more detailed description of the interpretive sites can be found in the accompanying interpretive themes and sites report prepared by The 106 Group.

The description of individual segments follows in a roughly counter-clockwise manner, beginning at Summit Avenue and continuing with the nine segments that make up the preferred route. A discussion of the two alternative routes immediately follows the discussion of the preferred route for the specific segment.

Mississippi River Boulevard



4.1 Mississippi River Boulevard

Mississippi River Boulevard flanks the eastern edge of the Mississippi River Gorge Regional Park on the western edge of Saint Paul. It begins south of Interstate 94 at Pelham Boulevard and runs south to the Highway 5/West 7th Street bridge where it becomes Shepard Road. Land use along Mississippi River Boulevard is primarily residential in nature, and offers high-quality recreational amenities with numerous scenic views up and down the Mississippi River Valley.

4.1.1 Existing Conditions

A ten foot-wide combined trail follows Mississippi River Boulevard along its entire length. The trail is divided from Ford Parkway to Magoffin Avenue, providing separate paths for bicyclists/in-line skaters and pedestrians. The color-coated trail is lighted and offers many benches, overlooks and parking areas for automobiles. Traffic barriers along the trail are a variety of stone and metal construction.

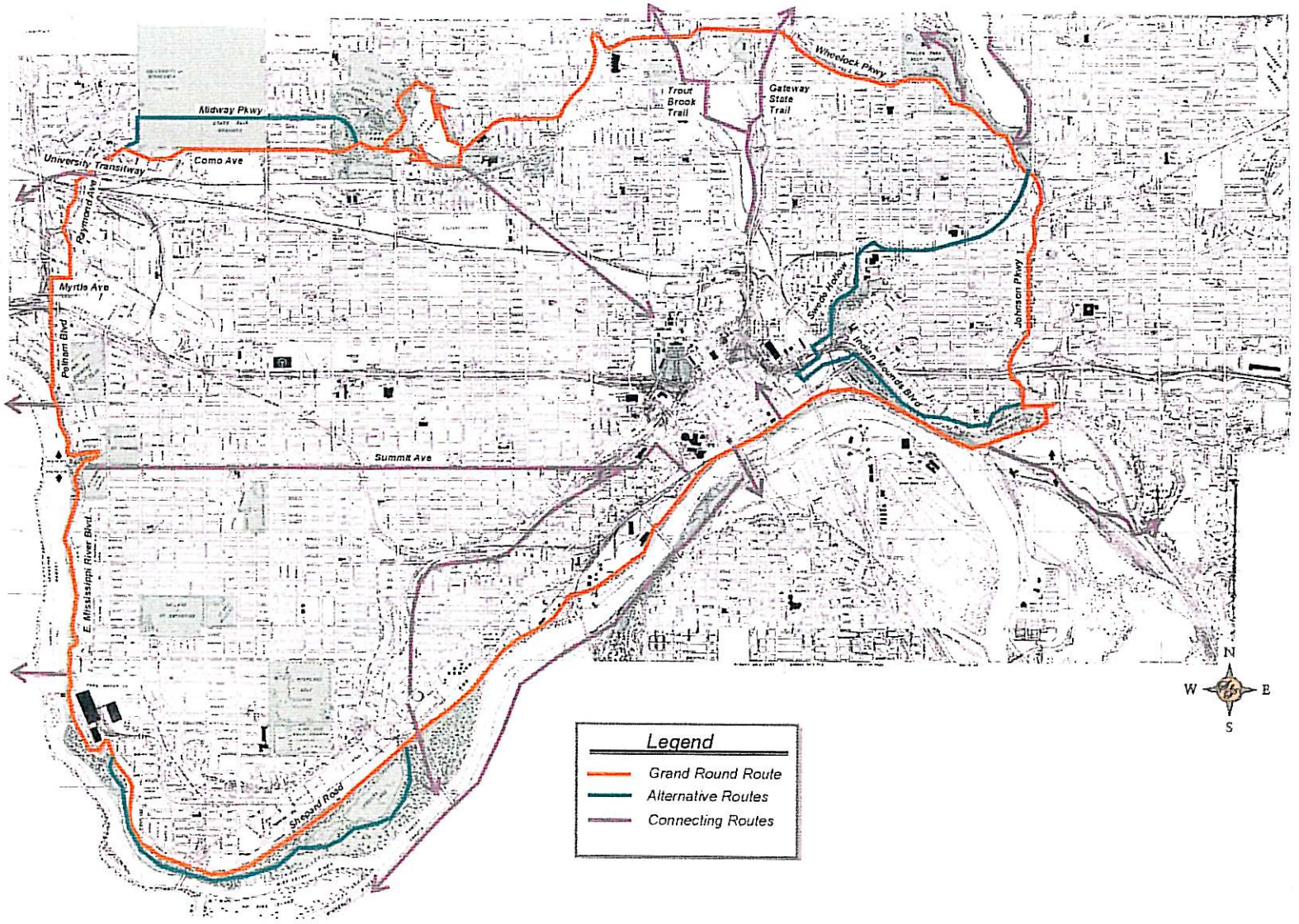


Figure 5 – Saint Paul Grand Round and Connections

"...the beauty of the river shores should be preserved in their native grandeur and beauty. . . . So that views up and down and across the river may be forever kept open to the residents and those who pass up and down the avenues, the whole space between the avenues and the shore being kept as public ornamental ground."

HWS Cleveland, 1887

A one-way on-road bicycle lane is striped in the southbound direction on Mississippi River Boulevard. Since it is located on the west side of the roadway, there are no interruptions to the lane by roadways or private driveways.

The underpass at Ford Parkway constricts the combined path to just six feet under the Ford Bridge. The independent trail narrows significantly at this point and results in conflicts between pedestrians, bicyclists, skaters and automobiles.

4.1.2 Design Opportunities

- Established facilities exist all along this section of the route, located within a wide swath of city-owned land between Mississippi River Boulevard and the river.
- City-owned parkland offers the opportunity for implementation of additional user amenities, such as bicycle parking and interpretation facilities.

4.1.3 Design Constraints

- The Ford Bridge underpass is a pinch point for both the combined trail and on-road bicycle lane.
- The width of Mississippi River Boulevard and available right-of-way do not immediately allow installation of a northbound bicycle lane.

Mississippi River Boulevard at Ford Parkway

4.1.4 Proposed Improvements

- Installation of additional user amenities within parkland.
- Widening the Ford Bridge underpass and removing parking to better accommodate the combined trail and bicycle lane, if the bridge is modified.
- Installing of Saint Paul Grand Round signage.
- Widening the roadway and/or removing parking to accommodate a northbound bicycle line.
- Developing separated bicycle and pedestrian paths for the entire length of the segment.
- Adding parking bays and bump-outs along the roadway.

4.1.5 Interpretation

- Shadow Falls Overlook - Summit Avenue & Mississippi River Boulevard – *Natural Landscape Theme*
- Mississippi River Boulevard – Pelham Boulevard to Highway 5/West 7th – *Creation of Saint Paul's Park System theme*
- Ford Plant – Mississippi River Boulevard & Ford Parkway – *Early industry theme*

- Lock and Dam No. 1 Historical Marker – south of Ford Parkway near parking area – *Paddlewheels and Steel Wheels theme*
- Hidden Falls Park – Mississippi River Boulevard & Magoffin Avenue – *Natural Landscapes theme*

4.2 Shepard Road

Mississippi River Boulevard becomes Shepard Road at Highway 5/West 7th Street and continues northeast along the Mississippi River to Jackson Street in downtown Saint Paul, where it becomes Warner Road. While Mississippi River Boulevard is built at the top of the bluff, Shepard Road descends into the river valley as it approaches downtown, offering a closer look at the Mississippi and impressive views of the Saint Paul skyline on the bluffs above. Shepard road is named for George Shepard who was the chief engineer for Saint Paul between the years of 1922 and 1956.

4.2.1 Existing Conditions

A six-foot combined trail is located adjacent to Shepard Road from the Highway 5/West 7th Street bridge to Randolph Avenue. This trail is generally situated behind a roadway guardrail and varies greatly in quality. The trail moves back from the roadway, and bicycles and pedestrians are separated when there is adequate room between the roadway and the bluff line. Barriers are primarily chain link, although metal railings are found in some areas. Through most of its length, the trail is narrow and in severe disrepair. There is a connection to a city trail near Montreal Avenue, which provides access to other routes within the city.

Northeast of Randolph Avenue, the independent trails are replaced with a narrow five-foot sidewalk that does not accommodate bicyclists or in-line skaters. Although bicyclists are forced to use the road at this point, Shepard road is very narrow and does not have on-road bicycle facilities.

Grade-separated crossings exist at Highway 5/West 7th Street and Interstate 35E. Limited on-road bicycle facilities exist on Shepard Road in the form of striped shoulder area. However, the high traffic volume of the road deters all but the most advanced bicyclists.

4.2.2 Design Opportunities

- Additional parkland exists along Shepard Road beginning at Highway 5/West 7th Street and ending just north of Interstate 35E.
- New Shepard Road begins northeast of Randolph Avenue and is expected to be completed in fall of 2000. The new roadway alignment will move the road away from the river and closer to the base of the bluff. This will free up the area closer to the river, in the vicinity of the current Shepard road, for the development of a riverside park with independent bicycle and pedestrian rails. The proposed East

Bank Regional trail will not only provide recreational opportunities, but efficient commuter access to downtown as well.

- The Interstate 35E bridge over Shepard Road is scheduled for reconstruction in 2001-2004. Pedestrian and bicycle facilities on the bridge will provide connections to trails at Lilydale – Harriet Island and Big Rivers.
- The future reconstruction of Shepard Road from 35E to TH5 may provide an opportunity to include improvements to the adjacent trail.

4.2.3 Design Constraints

- Shepard Road has high traffic volumes along its entire length. This will restrict the feasibility of on-road bicycle facilities.
- The existing I-35E underpass is a pinch point, with limited space available for pedestrians and bicyclists.

4.2.4 Proposed Improvements

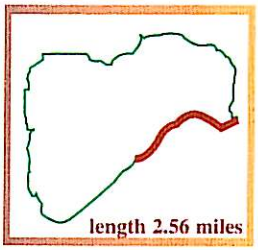
- Improving the combined trail to include separated bicycle and pedestrian facilities, between Highway 5/West 7th Street and Interstate 35E, and installing user amenities in this area.
- Constructing a trail underpass at Interstate 35E.
- Installing Saint Paul Grand Round signage.

Shepard Road at Interstate 35E

4.2.5 Interpretation

- Old Fort Snelling Bridge – Shepard Road & Highway 5 – *Opportunity for historical interpretation*
- Slot Canyon and Waterfall - Crosby Farm Regional Park near Crosby Lake – *Natural Landscapes theme*
- Fountain Cave Historical Maker – On the bluffs near Drake Street – *Immigrant Communities theme*
- Schmidt Brewery – Palace Avenue west of West 7th Street – *Early Industry theme*
- Omaha Swing Span Railroad Bridge – Shepard Road & Randolph Avenue – *Paddlewheels and Steel Wheels theme*
- NSP Plant – Shepard Road & Randolph Avenue – *Opportunity for historical interpretation*
- Little Italy – Shepard Road below the High Bridge – *Immigrant Communities and Residential Patterns themes*
- Upper Landing – Shepard Road below the High Bridge – *Paddlewheels and Steel Wheels theme*
- Irvine Park – On the bluffs southwest of Chestnut Street – *Residential Patterns theme*

- Grain Elevator/Farmer's Union Terminal – Shepard Road & Chestnut Street – *Early Industry theme*
- Harriet Island Regional Park – across Mississippi River – *Creation of Saint Paul's Park System theme*
- Downtown Saint Paul – *Opportunity for historical and architectural interpretation*



4.3 Warner Road

Warner Road begins downtown at Jackson Street and moves eastward along the Mississippi River below the bluffs. It then turns away from the river and climbs a steep hill up to the eastern end of Indian Mounds Park. Warner Road is named for Richmond Warner, former Chairperson of the Saint Paul Park Authority.

4.3.1 Existing Conditions

Beginning at Lambert's Landing at the foot of Sibley Street in downtown Saint Paul, an independent trail with separated bicycle and pedestrian elements follows the river until Warner Road turns inland. This facility is lighted, and offers seating opportunities and interpretive amenities with excellent views of the Mississippi River.

Lambert's Landing (Warner Road and Jackson Street)

As Warner Road begins to turn away from the river, the trail quality of the trail diminishes, becoming a narrow, single five-foot trail located immediately adjacent to the roadway.

After crossing a bridge over railroad tracks, the sidewalk ends at Fish Hatchery Road. From here almost to the top of the hill, the trail is a combined ten-foot wide facility immediately adjacent to the roadway. Just before the intersection of Warner Road and Highway 10/61, the trail crosses a pedestrian/bicycle bridge and continues through Indian Mounds Park. The trail through the park is a ten-foot wide independent trail in good condition.

4.3.2 Design Opportunities

- Extensive parkland and high-quality facilities exist from Lambert's Landing eastward. Additional user amenities and interpretive facilities could be implemented in this area.
- An existing bicycle/pedestrian bridge and trails within Indian Mounds Park offer a good connection from Warner Road to Johnson Parkway, avoiding the intersection of Warner Road and Highway 10/61.
- An off-road connection to the Phalen Regional Trail is planned.
- Plans for the reconstruction of the existing trail from Childs Road to the bridge are complete. Construction is expected in 2001.

4.3.3 Design Constraints

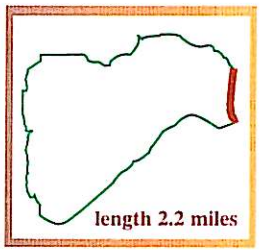
- The bridge over the railroad is narrow and currently does not offer good bicycle or pedestrian accommodation. Pedestrian/bicycle facilities are limited to a single five-foot sidewalk on the south side of the bridge. It will be difficult to expand facilities on this bridge without bridge reconstruction or a new independent structure.

4.3.4 Proposed Improvements

- Installing directional signage at the Indian Mounds Park and Battle Creek Trail connections, so users are directed to use the pedestrian/bicycle bridge.
- Implementing additional user amenities and interpretive facilities east of Lambert's Landing.
- Providing appropriate bicycle and pedestrian facilities when the Warner Road bridge over the railroad is reconstructed or construct a new independent trail bridge.
- Installing Saint Paul Grand Round signage.

4.3.5 Interpretation

- Lampert's (Lower) Landing Historical Marker – Warner Road & Sibley Street – *Paddlewheels and Steel Wheels theme*
- Union Depot – Sibley Street & Third Street (Downtown Saint Paul) – *Paddlewheels and* Steel Wheels theme
- Fish Hatchery – Warner Road & Fish Hatchery Road – *Opportunity for historical interpretation*
- Railroad Yard – Warner Road west of Highway 10/61 – *Opportunity for historical interpretation*



4.4 Johnson Parkway

Johnson Parkway begins at Indian Mounds Park and runs north through Saint Paul neighborhoods to Phalen Park, where it turns into Wheelock Parkway. This wide, sometimes divided parkway has residential neighborhoods on both sides. Johnson Parkway is named for John Johnson, who was governor of Minnesota from 1905 to 1909.

4.4.1 Existing Conditions

Johnson Parkway provides wide curb lanes along its entire length. While it is not officially signed as a bicycle route, it does offer an opportunity for a high-quality on-road bicycle facility. There are no off-road bicycle or pedestrian facilities along Johnson Parkway.

Johnson Parkway takes advantage of a wide bridge under Interstate 94. The paved shoulders continue under this bridge. A narrower underpass exists at a railroad crossing near the north end of Johnson Parkway and the road width constricts slightly in this area.

4.4.2 Design Opportunities

- The existing paved shoulders and wide curb lanes offer a high-quality bicycle facility that could be upgraded with signage or striping.
- Boulevards offer an opportunity for pedestrians to walk on off-road trails.

4.4.3 Design Constraints

- The narrow railroad underpass creates a pinch point for both the roadway and the trail.
- High traffic volumes and numerous intersections detract from the on-road cycling experience.

4.4.4 Proposed Improvements

- Upgrading wide curb lanes to bicycle lanes.
- Widening railroad underpass, if bridge is reconstructed.
- Installing of Saint Paul Grand Round signage.
- Constructing independent trails or walks for pedestrians and in-line skaters.

4.4.5 Interpretation

- Johnson Parkway - Burns Avenue to Wheelock Parkway – *Creation of Saint Paul's Park System theme*
- Johnson Parkway Bridge – Near southeast corner of Lake Phalen – *Paddlewheels and Steel Wheels theme*

4.5 Indian Mounds Boulevard and Swede Hollow (Alternate Route)

Although this segment has significant opportunity for cultural interpretation, its cumbersome connections through downtown and deviation from the historic route of the Grand Round led to the determination that this segment be included as an alternate route.

Indian Mounds Boulevard follows the crest of the Mississippi River bluff through Indian Mounds Park. It begins at Johnson Parkway and proceeds westward as far as Kellogg Boulevard. This route offers excellent views of downtown Saint Paul and the Mississippi River and gives access to high-quality cultural resources and residential neighborhoods.

The Swede Hollow trail begins at East 7th Street at a trailhead that includes seating and parking facilities. The trail then loops down under East 7th Street and progresses through a low ravine and railroad corridor, emerging at the south end of Phalen Park. This corridor offers natural and cultural amenities as it passes through a wooded ravine and on to an industrial corridor.

4.5.1 Existing Conditions

Combined bicycle/pedestrian trails exist throughout Indian Mounds Park, offering access to user amenities such as benches, picnicking, interpretive facilities, restroom facilities and automobile parking. The boulevard itself is also wide enough to comfortably accommodate bicycle use.

The Swede Hollow Trail is a combined 12-foot bicycle/pedestrian facility. It is relatively new and well maintained. Because it lies on an abandoned railroad corridor, it passes under most major roadways, and the bridges easily accommodate the present trail.

4.5.2 Design Opportunities

- Additional user amenities and interpretive facilities would be possible in the adjacent parkland.
- The low traffic volumes and wide roadway of Indian Mounds Boulevard would allow for the implementation of on-road bicycle facilities.
- The existing trail in Swede Hollow would need little improvement, but the installation of user amenities and interpretive facilities along the trail would be possible in the public corridor.
- Additional north-south connections.

4.5.3 Design Constraints

- The connection between Indian Mounds Boulevard and the Swede Hollow Trail would pass through a difficult, highway-dominated area.
- The connection to Swede Hollow Trail and the Phalen Regional Trail from Mounds Boulevard is a difficult one. The Interstate 94 interchange with 6th Street stands in the way of the connection.
- Planned construction of Phalen Road.

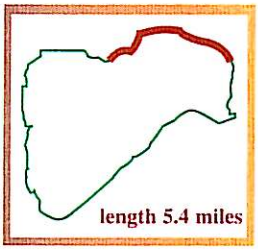
4.5.4 Proposed Improvements

- Implementing additional user amenities and interpretive facilities in Indian Mounds Park, if necessary.
- Installing interpretive facilities and user amenities, such as benches, along the trail in Swede Hollow.

4.5.5 Interpretation

- Indian Mounds Park – Indian Mounds Parkway & Johnson Parkway – *Creation of Saint Paul's Park System theme*

- Indian Burial Mounds Historical Marker – Indian Mounds Park – *Opportunity for archaeological interpretation*
- Indian Mounds Park "Airway" Beacon Historical Marker – Indian Mounds Park – *Paddlewheels and Steel Wheels theme*
- Carvers Cave Historical Marker – Indian Mounds Park – *Opportunity for archaeological interpretation*
- Dayton's Bluff – South of East 7th Street – *Residential Patterns theme*
- Swede Hollow – North of East 7th Street – *Immigrant Communities theme*
- Drewry Line Bridge –Beaumont Street and Drewry Lane – *Paddle Wheels and Steel Wheels theme*
- Hamm's Brewery – Bush Avenue & Maplewood Drive – *Early Industry theme*
- 3M Corporation – East 7th Street & Duluth Street – *Early Industry theme*



4.6 Wheelock Parkway

Wheelock Parkway connects Phalen Park to Como Park. At 5.5 miles, it is the longest parkway in the Twin Cities. It winds generally westward through north Saint Paul, from the south end of Lake Phalen to Lake Como. In the midst of the urban grid of Saint Paul neighborhoods, Wheelock Parkway carves an irregular path, offering unique views of the city's residential housing stock. About two-thirds of the way to Como Park, Wheelock Parkway climbs a terminal moraine that provides good views of downtown Saint Paul. Wheelock Parkway is named for Joseph Wheelock, founder of the Saint Paul Pioneer Press and president of the Saint Paul Park Board from 1893 to 1906.

4.6.1 Existing Conditions

Wheelock Parkway includes bicycle lanes within the area of Phalen Park (from Maryland Avenue to Arcade Avenue). An independent facility also follows the parkway through the park, beginning as a trail with separated bike and pedestrian elements, then crossing the parkway and progressing toward Arcade Avenue as a narrow combined trail.

Beginning at Arcade Street, the parkway is signed as a bicycle route, but offers no other accommodations aside from occasional sidewalks.

The parkway passes under the Gateway Trail and crosses a major bridge over Interstate 35E. The width of the roadway does not change at these grade-separated crossings.

4.6.2 Design Opportunities

- Phalen Park offers numerous user amenities, including parking, sitting areas, restroom facilities and recreation programs. Additional bicycle-related facilities would be possible.
- Wheelock Parkway crosses the Gateway State Trail and the Trout Brook Trail, offering connections to other communities and neighborhoods.
- The parkway varies in width but in general is very narrow in relation to available right-of-way; however, upgrades of the signed shared roadway to independent trails may be possible in some locations.

4.6.3 Design Constraints

- Most of the land along Wheelock Parkway is residential, making implementation of-off-road trail facilities difficult.

4.6.4 Proposed Improvements

- Widening and reconstructing the narrow independent trail east of Arcade Avenue.
- Upgrading signed, striped roadway to wide curb lanes or bicycle lanes, where possible.
- Enhancing sidewalks and trail segments where possible
- Implementing trail connections to the Gateway State Trail and the Trout Brook Trail.
- Installating Saint Paul Grand Round signage.

4.6.5 Interpretation

- Wheelock Parkway – Johnson Parkway to Como Park – *Creation of Saint Paul's Parks theme*
- Phalen Park – Along Wheelock Parkway east of TH 61 – *Creation of Saint Paul's Parks theme*
- Horseshoe Terminal Moraine – Along Wheelock Parkway west of Rice Street – *Natural Landscape theme*

4.7 Como Park/Horton Avenue

Como Park includes many trail facilities, including separated trails around Lake Como. This large park serves as the connection between Wheelock Parkway to the east and Como Avenue to the west. The park offers numerous user amenities, including picnic areas, drinking water, rest room facilities, concessions and automobile parking. Hiler Horton served on the Saint Paul Board of Park Commissioners and as a State Senator.

4.7.1 Existing Conditions

A portion of the roadway around Lake Como has been dedicated to bicycle use. Concrete barricades have been installed between the roadway and the bicycle lanes. This facility is accompanied around the lake by a separate pedestrian pathway.

Once around the lake, the trail winds through the park and exits at Horton and Hamline Avenues. At times this trail is quite narrow and has a rough surface unsuitable for in-line skating.

4.7.2 Design Opportunities

- Because this portion of the Grand Round exists in a public park, narrow portions of the trail could be widened, and additional user amenities installed, if needed.
- The delineation of a bicycle facility on the east side of Lake Como indicates a commitment to this type of design. Narrowing the roadway to implement a formal bicycle trail is possible.

4.7.3 Design Constraints

- The existing rough surface and narrowness of some portions of the trail make the trail unfriendly to in-line skaters and reduce trail capacity.

4.7.4 Proposed Improvements

- Reconstructing park road on the east side of Lake Como to make room for a formal bicycle trail.
- Widening and resurfacing portions of the trail that are narrow or degraded.
- Banning on-street parking along Horton and Gateway Drive and striping for on-road bicycle lanes.
- Installing Saint Paul Grand Round signage.

4.7.5 Interpretation

- Como Park – Lexington Avenue & Como Avenue – *Creation of Saint Paul's Parks theme*

4.8 Como Avenue

Como Avenue begins at the western edge of Como Park and runs west past the State Fairgrounds to Raymond Avenue. Como Avenue is a wide roadway flanked by residential, commercial and industrial uses, including the University of Minnesota – Saint Paul campus.

The name Como refers to Como, Italy the birthplace of Charles Perry who originally farmed the area around Como Lake.

4.8.1 Existing Conditions

Como Avenue has sidewalks on both sides, and a short bicycle lane near Snelling Avenue. The roadway underpass of Snelling Avenue does not accommodate bicycles or pedestrians.

4.8.2 Design Opportunities

- Como Avenue is a wide roadway with parking on both sides. Initial conversation with the Fairgrounds, which owns land on both sides of Como, indicates that they would be willing to eliminate parking on both sides of the street to accommodate bicycle lanes.
- Como Avenue provides a grade-separated crossing under Snelling Avenue.
- Right-of-way is available to continue an off-road path on the north side of Como Avenue along the Fairgrounds.

4.8.3 Design Constraints

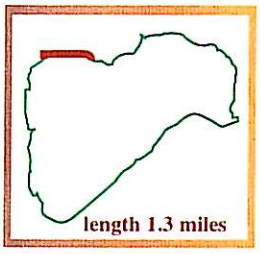
- The traffic volumes on Como Avenue will require safety considerations during the design of bicycle facilities.
- Como Avenue between Hamline and Snelling Avenues is a wide residential street, making implementation of off-road facilities difficult.
- The State Fair requires four lanes of traffic on Como from Snelling to Cathlin on a year-round basis and there are extremely high traffic volumes during the Fair.

4.8.4 Proposed Improvements

- Striping bicycle lanes in the vicinity of the Fairgrounds.
- Striping bicycle lanes between Hamline and Snelling will be completed this summer.
- Adding an independent pedestrian trail path on north side of roadway
- Installing Saint Paul Grand Round signage.

4.8.5 Interpretation

- Minnesota State Fairgrounds – Como Avenue & Snelling Avenue – *Opportunity for historical interpretation*
- Midway Parkway – Como Park to Minnesota State Fairground – *Creation of Saint Paul's Parks theme*



4.9 Midway Parkway/Dan Patch Avenue (alternate route)

Midway Parkway begins on the western edge of Como Park and proceeds westward to Snelling Avenue, where it crosses into the State Fairgrounds and becomes Dan Patch Avenue, then Commonwealth Avenue. Where Commonwealth Avenue intersects with Cleveland Avenue, the route would turn south and join Raymond Avenue. Although Midway Parkway is the historic route of the Grand Round as envisioned by H.W.S. Cleveland, the intensive use of the Fairgrounds throughout the summer could make a crossing through this facility difficult during significant portions of the year. For that reason, this route is noted as an alternate.

4.9.1 Existing Conditions

East of the fairgrounds the route would follow Midway Parkway from Como Park. The crossing at Snelling Avenue is signalized; however, the amount of traffic on Snelling Avenue and turning movements in this area are sometimes difficult to navigate.

Dan Patch and Commonwealth Avenues are not continuous through the Fairgrounds, and road width varies considerably. The Fairgrounds is designed to be a pedestrian atmosphere, but it is exactly this pedestrian accommodation that could make implementation of bicycle facilities difficult. When the Fairgrounds is hosting the numerous events that take place throughout the summer, the sheer numbers of vendors and pedestrians could create safety concerns for bicyclists.

4.9.2 Design Opportunities

- The Fairgrounds is committed to pedestrian and bicycle access to their facility, so the implementation of a route through the Fairgrounds could be supported be the landowner.

4.9.3 Design Constraints

- The Fairgrounds closes its doors to all but paying customers for many of the events held there. It would not be guaranteed that Dan Patch and Commonwealth Avenues would always be open to trail users.

4.9.4 Proposed Improvements

- Improved access and facilities for bicyclists and pedestrian use during available times

4.9.5 Interpretation

- Minnesota State Fairgrounds – Como Avenue & Snelling Avenue – *Opportunity for historical interpretation*

4.10 Raymond Avenue

Raymond Avenue begins at Como Avenue, just southwest of the State Fairgrounds. It progresses generally south, under the University Transitway and through a neighborhood commercial area. It terminates at Wabash Avenue, one block east of Myrtle. Raymond Avenue offers a route through a high-quality, traditional commercial area, as well as a connection into Minneapolis on the University Transitway.

4.10.1 Existing Conditions

No bicycle facilities currently exist on Raymond Avenue and the street is narrow. Sidewalks flank each side of the street for its entire length.

Raymond Avenue passes under the University Transitway and a railroad beneath a narrow pair of bridges. The roadway navigates an offset bridge underpass, which could be a hazard for bicyclists. Various crossings and turning movements, in addition to truck traffic and poor sight lines, mean that this segment may be difficult for inexperienced and even average bicyclists, as traffic on University Avenue is very heavy.

4.10.2 Design Opportunities

- On-road bike lanes could facilitate movement of bicycle traffic through the area.
- Traffic calming and urban design elements can improve pedestrian safety and give identity to this neighborhood node.

4.10.3 Design Constraints

- A narrow roadway and adjacent residential and commercial uses would make implementation of facilities difficult in places.

4.10.4 Proposed Improvements

- In the short term, installing cautionary and directional signage to assist in navigation of this route, as well as to increase bicyclist safety. This recommendation would accommodate skilled or adult users only.
- Mid-to long-term – implementing wide curb lanes, streetscape and urban design elements with street reconstruction
- Installing Saint Paul Grand Round signage.

4.10.5 Interpretation

- St. Anthony Park –Raymond Avenue & Energy Park Drive – *Residential Patterns theme*
- University Avenue Commercial District – University Avenue & Raymond Avenue – *Opportunity for historical and architectural interpretation*

4.11 Pelham Boulevard

Pelham Boulevard begins north of Interstate 94 at Myrtle Avenue and proceeds directly southward to Mississippi River Boulevard. Along its route, it passes over Interstate 94 and past Desnoyer Park and the Town and Country Golf Club.

4.11.1 Existing Conditions

Pelham Boulevard is a wide street with low traffic volumes and sidewalks on both sides. There are currently no on-road bicycle accommodations or signage. The bridge over Interstate 94 has minimal pedestrian accommodations and no facilities for bicyclists.

4.11.2 Design Opportunities

- The width of Pelham Boulevard could allow the implementation of on-road facilities.

4.11.3 Design Constraints

- Adjacent uses would make implementation of additional off road facilities difficult.
- Loss of parking near Desnoyer Park will be an issue.

4.11.4 Proposed Improvements

- Implementing striped bike lanes or other on-road facilities
- Modifying I-94 bridge to accommodate trail
- Installing Saint Paul Grand Round signage

4.11.5 Interpretation

- Town and Country Golf Club – Pelham Boulevard & Beverly Street – *Opportunity for historical interpretation*
- Desnoyer Park – Pelham Boulevard & Desnoyer Avenue – *Opportunity for historical interpretation*

5.0 – Design Guidelines

Design guidelines have been developed to ensure consistency and increase safety within the Saint Paul Grand Round.. By establishing and following these design guidelines, implementing agencies can develop a user-friendly, safe and accessible facility for bicyclists, in-line skaters and pedestrians that connects the various historic, natural and cultural amenities of Saint Paul.

Guidelines are not legally binding. Because of this, they offer implementing agencies the flexibility to adapt to specific site conditions, community desires and designers' creativity. They generally recommend minimum conditions, and should certainly be altered based on safety concerns or cost restrictions that necessitate a short-term solution, or a community desire for increased facilities.

These guidelines are based generally on the American Association of State Highway and Transportation Officials' Guide to the Development of Bicycle Facilities (AASHTO Guide), which is a nationwide standard for bicycle design recommendations. The guidelines contained in this guide are the result of extensive testing, and are an invaluable resource for facility designers. In addition, bicycle facilities that seek federal transportation funding must adhere to AASHTO standards.

Other agencies, both state and local, have put together design guidelines for their own purposes. Many of these resources are useful, such as Mn/DOT's Minnesota Bicycle Transportation Planning and Design Guidelines as they expand upon the AASHTO Guide while meeting the needs of specific communities and situations. Mn/DOT's guidelines must be adhered to whenever TEA 21 money is used and for any improvements to roads funded by the State. Sources of design guidelines that may be applicable to the Saint Paul Grand Round are included in Appendix A.

5.1 Facility Types

The Saint Paul Grand Round is multi-use facility accommodating bicycles, in-line skaters and pedestrians. The guidelines set forth for in this document, however, deal primarily with the accommodation of bicycles and pedestrians. In-line skaters can be easily accommodated on bicycle facilities.

There are four general types of facilities:

- On-Road Bicycle Routes are facilities that are located on an existing roadway. These roadways include signed shared roadways, wide curb lanes and bicycle lanes.
- Independent Multi-Use Trails, combined, are off-road facilities that accommodate two-way traffic on one trail.
- Independent Multi-use Trails, separated, are off-road facilities that separate traffic by mode (user) or direction of travel.
- Sidewalks are typically designed with only pedestrians in mind.

5.2 Typical Cross Sections

These design guidelines are meant as general recommendations only. Many of the design considerations listed above will be impacted by local conditions, such as right-of-way width, intensity of use and community desires.

5.2.1 On Road Bicycle Routes

On-road bicycle routes are the easiest type of facility to implement, but they often come with safety concerns. Conflicts between pedestrians, automobiles or other bicyclists can lead to serious injury. In addition, novice riders and children will not usually feel comfortable on these types of facilities. Ease of implementation is an important consideration. In some cases, the creation of an on-road bicycle route requires only the installation of signage indicating a "share the road" concept. In others, curb lanes can be widened through restriping the roadway, and adding signing to provide additional space for bicyclists.

For all on road bicycle facilities, it is important to ensure that drain inlets are bicycle-friendly. Grooves that run parallel to the curb may trap bicycle wheels, causing serious injury. Numerous "bike-friendly" drainage grates are widely available for installation. When an on-road bicycle route is planned, drainage structures should be evaluated for compatibility, and replaced if possible.

Signed Shared Roadways

Signed shared roadways are on-road bicycle routes that are purely navigational. No special accommodations for bicyclists are made except for the introduction of "bike route" or "share the road" signage. These facilities should only be considered when right-of-way restrictions make roadway improvements impossible. The AASHTO Guide lists criteria that should be met prior to the designation of a signed shared roadway. These criteria include the following:

- The route connects discontinuous segments of shared use paths, bike lanes and/or other bike routes.
- An effort has been made to adjust traffic control devices, such as stop signs and signals, to give greater priority to bicyclists on the route, as opposed to alternative streets.
- Street parking has been removed or restricted in areas of critical width to provide improved safety.
- A smooth surface has been provided, including the adjustment of utility covers to grade, installation of bicycle-safe drainage grates and filling of potholes.
- Maintenance of the route will be sufficient to prevent accumulation of debris.

Bicycle facilities on signed shared roadways are a part of the vehicular roadway. Bicyclists on such facilities operate as motor vehicles. The width of a signed shared roadway is based on lane width standards for the roadway, not on bicycle accommodations. For signed shared roadways, signage is the primary design element. Signs designating the route should be placed approximately every 1/2 mile, at major turns in the route and at signalized intersections.

Wide Curb Lanes

Wide curb lanes offer a means of increasing the space to be shared by bicycles and motor vehicles on roadways. This increased space can increase user comfort and safety.

As its name suggests, a bicycle facility of this type is a part of the curb, or outside, lane of an existing roadway. A wide curb lane should be 14 feet in width along relatively flat areas and 15 feet in width along steep uphills, where bicycles may need more maneuvering space. The width of the curb lane should be measured from the edge of the gutter pan to the edge of the lane. Bicyclists will not typically ride in the gutter, so this space is not considered part of the lane. As with signed shared roadways, route designation signs should be placed approximately every 1/2 mile, at major turns in the route, and at signalized intersections. There is no striping of a wide curb lane beyond that already associated with the roadway.

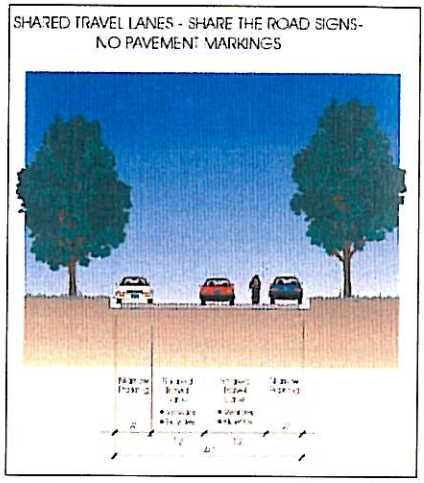


Figure 6 – Typical Section Share the Road

Wide curb lanes can be implemented in the following ways:

- Restriping a four-or three-lane roadway to create narrower inside lanes and wider outside lanes.
- Restriping a roadway to create narrower parking bays or shoulders and wider outer lanes

Bicycle Lanes

Bicycle lanes are on-road facilities that specifically delineate the route of bicycle travel through striping and pavement markings. This type of facility increases user safety by separating the traveled paths of bicyclists and motorists.

Bicycle lanes are typically one-way facilities on the right side of the roadway. This allows bicyclists to ride in the same direction as motor vehicle traffic and easily access other streets and off-road trails. Two-way bicycle lanes are possible on one-way streets but should be placed so that the inverse bicycle traffic is buffered from vehicular traffic by the same-direction bicycle lane. A preferred option would be to stripe one-way bicycle lanes on adjacent one-way roads. Where parking exists, bicycle lanes should be placed between the parking stalls and the roadway.

Bicycle lanes should be at least four feet in width; however, this minimum width should be increased to five feet when the bicycle lane occurs adjacent to parking stalls. Curbs and gutters can be a deterrent to bicycle travel, particularly if the joint between the gutter and the roadway is not smooth. Therefore, the width of a bicycle lane should be measured from the edge of the gutter to the striped edge of the lane.

A 4-inch solid white stripe should be placed between the bicycle lane and the traveled roadway. If parking exists adjacent to the bicycle lane, a four-inch solid white stripe should be placed between the parking stalls and the lane. If bicycle lanes run in opposite directions on a one-way street, the bicycle lane centerline should be delineated with a dashed yellow line.

Where bike lanes intersect with other roadways, they are regulated by the traffic control devices installed at the intersection. This increases safety, as bicyclists are apparent to motorists and are following the same rules. However, because on-road bicycle facilities are typically found on the right shoulder, right turn lanes, left turning bicycles and ramps of any kind can impact the safe operation of bicycles on the street.

The AASHTO Guide details several options for the accommodation of bicycle lanes at intersections.

5.2.1 Independent Multi-Use Trails

Independent trails are separate off-road multi-use facilities that can be used by all modes of travel at all skill levels. Because independent trails offer an increased level of safety and accessibility to a greater variety of users, they are typically the preferred facility. The safety of independent trails may be further enhanced by separating bicycle and pedestrian elements.

Independent trails can be located in roadway rights-of-way, parks or almost anywhere that space will allow. Independent trails may even be located immediately behind a roadway curb, but a five-foot boulevard separation between the trail and the curb is preferred.

At a minimum, curve radii for a bicycle trail with a design speed of 20 miles per hour should be 100 feet. This recommendation should be used for planning purposes only. For final design, the accepted guidelines should be consulted (see Appendix A).

The profile, or vertical curvature, of a bicycle trail is also a major consideration that requires detailed analysis and design. Issues to consider when designing a trail's profile include steepness and stopping sight distance. The maximum recommended grade for bicycle trails is 5 percent. Steeper grades are possible, but should only be for short distances. Independent trails should have a uniform cross-slope of 2 percent to facilitate adequate drainage.

Combined Trails (Multi-modal)

Combined facilities offer one trail for use by all user modes, accommodating travel in both directions.

The width of a combined trail should be no less than 10 feet, with 12' being preferred. This provides a minimum five-foot travel lane in each direction, allowing trail users to stay in their lane when approaching oncoming traffic. Where a combined trail exists at the back of curb, the total paved width should be minimum 12 feet, inclusive of a curb edge setback at 18-24".

A two-foot clear zone should be provided on each side of the trail. This area should have a maximum slope of 1:6 and be free from any vertical obstructions such as walls, signs, fences and trees.

A dashed yellow centerline should be striped on heavily used trails to delineate the two directions of traffic. Where a combined trail exists at the back of curb, a solid white stripe should be placed two-feet from the curb.

Separated Trails

Separated facilities offer two separate trail facilities for different modes of travel. In some cases, where bicycle and pedestrian traffic is particularly heavy, the bicycle element can be further separated to provide independent trails for opposing directions of travel.

The bicycle/in-line skate element should be no less than ten feet wide. The pedestrian element should be a minimum of five feet wide. When separating the bicycle trail for opposing directions of travel, each trail should be a minimum of six feet wide.

A two-foot clear zone should be provided on each side of the trail. This area should have a maximum slope of 1:6 and be free from any obstructions such as walls, signs, fences and trees. There should be a minimum two-foot separation between the two trails or elements of a trail.

Striping is not typically needed on separated pedestrian trails. The bicycle element should be striped with dashed yellow centerline.

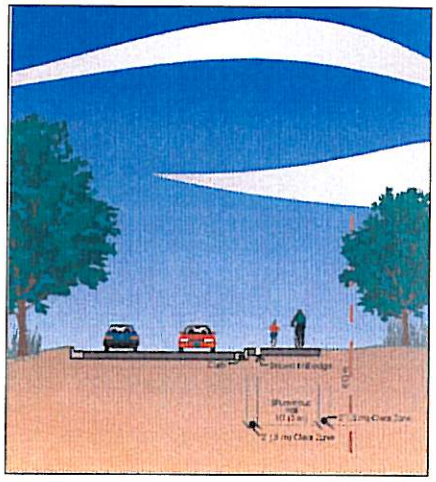


Figure 7 – Typical Section Trail in Road Right-of-Way

5.3 Crossings

When a trail crosses a roadway, railroad or watercourse, there is a safety hazard to trail users. The best way to increase safety is to increase visibility. It is important that crossings are visible both to trail users and to motorized vehicles. There are two types of crossings: at-grade and grade-separated.

5.3.1 At-Grade Crossings

Typical crossing situations encountered along the Saint Paul Grand Round route call for the implementation of at-grade crossings.

Wherever possible, trails should cross roadways and railroads at right angles. In cases where trails approach the roadway at a skew, the trail should be routed to achieve the right-angle crossing wherever possible.

It is important for motorists and trail users to see each other at roadway crossings. A motorist needs to be able to stop in time if a trail user is in the road, and a trail user needs to be able to judge his or her ability to cross the street safely.

Signage, striping and signals are the three basic components of at-grade crossings. These components announce the crossing for both trail users and motorists, and should be employed in varying degrees depending on the functional classification and traffic volume of the roadway to be crossed.

Signage should be based on the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices, and be placed outside the recommended clear zones for both

trails and roadways. Striping refers to markings painted on the pavement, either on the roadway or on the trail. This includes zebra crosswalks and "BIKE XING" lettering. Signals refer to lighted cautionary or regulatory signage, such as flashing yellow warning lights, stoplights or pedestrian crossing signals.

Roadway Crossings

The roadway crossing guidelines described here are divided into five categories based on general functional classifications and roadway volumes. The recommendations for each type of crossing are only a minimum requirement. Each situation must be analyzed in detail to determine whether additional safety signing, striping or signals are warranted.

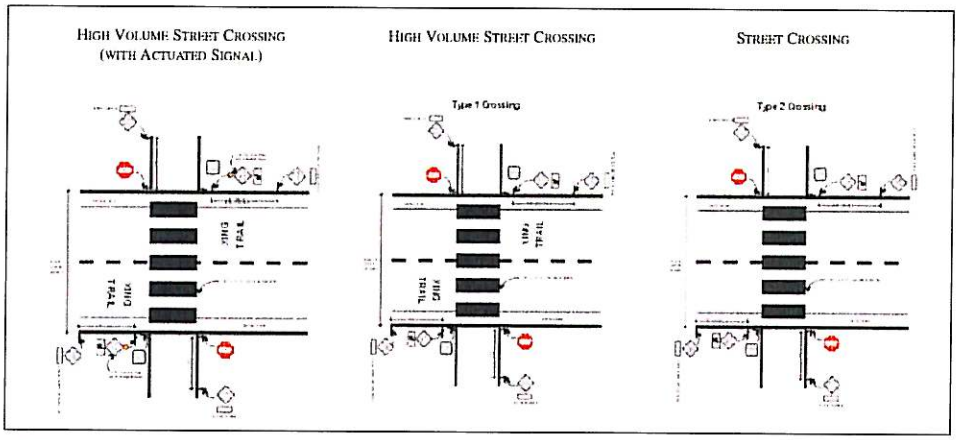


Figure 8 – Typical Roadway Crossings

- Major roads: arterial roads, collectors, state highways:
- Residential streets:
- Commercial driveways:
- Residential driveways:
- Railroad crossings:

  In many ways, railroad crossings are similar to roadway crossings, except that sight lines for trail users are even more important. Trails should cross railroads at right angles, if possible. However, for many trails this is not likely to be the case, especially for trails within road rights-of-way. Bicycles in particular cannot cross railroad at a severe angle, because the gap between the pavement and the rail may trap a wheel. The AASHTO Guide details several options for mitigating severely angled railroad crossings:

  - Railroad crossings should include a rubberized or concrete crossing material, to allow a smooth crossing for trail users.

- Railroad crossings should also include signage, at a minimum, and possibly pavement messages if traffic volumes on the railroad are high.
- In some cases, especially adjacent to roadways, it may be recommended to install lowering gates across the trail.

5.3.2 Grade-Separated Crossings

Grade-separated crossings are typically safer than at-grade crossings. However, because of their high cost, they should be considered only where an at-grade crossing would cause serious inconvenience or safety concerns. Grade-separated crossings may carry a bicycle facility either over or under an obstruction, such as a major roadway, railroad or watercourse.

5.4 Signage

Signage increases safety and comfort level on trails; therefore, the inclusion of signage on trails is an important amenity that should not be overlooked. Signs may warn of approaching roadway crossings, interpret adjacent features/sites, regulate trail use or caution the user on varying trail conditions. The Minnesota Manual on Uniform Traffic Control Devices (MMUTCD), published by the Minnesota Department of Transportation, is an invaluable reference for standard signage. Whereas this document is generally geared for roadway use, many of the signs may be adapted for trail use. In addition, the sign label numbers listed in the MMUTCD are an industry standard and can be easily fabricated. There are four basic types of signs:

- Directional signs give street names, trail names, direction arrows and other navigational information.
- Cautionary signs warn of upcoming roadway crossings, steep grades, blind curves and other potential trail hazards.
- Regulatory signs tell the "rules of the trail" by prohibiting certain uses or controlling direction of travel.
- Interpretive signs offer educational information on the trail environment and its immediate surroundings.

Consistency in signage throughout the Saint Paul Grand Round is very important, as it will tie together a multi-use facility that may include a variety of trail types. Signage identifying the Saint Paul Grand Round should be located at major route access points and major roadway crossings. Because the route of the Grand Round follows many different parkways and streets, and passes through several parks, street labeling in conjunction with route signage could be useful and interpretive. Where the Grand Round intersects other trail facilities, such as the Gateway State Trail or the Battle Creek Regional Trail, signage should be installed to note these trails and direct the user to access points. Examples of how a standard Grand Round sign may be used are shown on the next page.

Other regulatory, cautionary and directional signs should be placed as needed. The following guidelines relate to the general placement and design of trail signage.

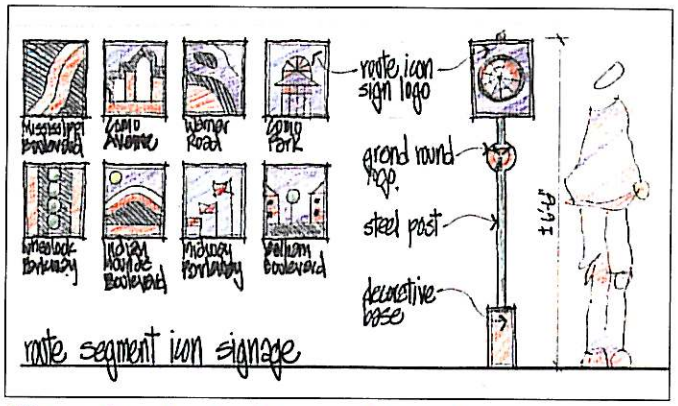


Figure 9 – Route Signage Concept

- Signs should be placed where they will be clearly visible. Placement is dependent on the facility's sight lines.
- Signs should be placed at a constant distance from the trail or roadway edge, outside the recommended clear zone. A distance of three feet is preferred.
- Lettering less than two inches in height is not recommended for regulatory, directional or cautionary signs.
- Text should be avoided on regulatory or cautionary signs wherever possible.

5.5 Cultural Site Markers

One of the major goals of the Saint Paul Grand Round is to interpret the varied history of the City of Saint Paul. Much of the route follows historic parkways and passes by numerous natural, cultural and historical points of interest. The interpretation of these resources is an important element of the Saint Paul Grand Round.

The various interpretive themes and elements are discussed in earlier sections, but the following diagrams and sketches show how an interpretive facility could look. The overall theme and pertinent information will change for each interpretive node, but the following design provides a general guideline for all interpretive facilities.

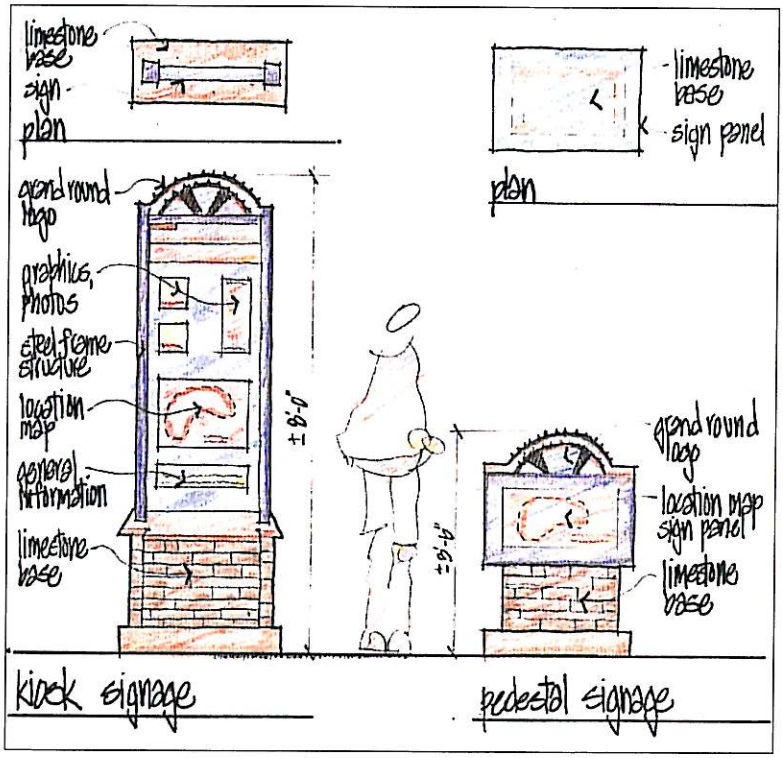


Figure 10 – Cultural Marker Concept

5.6 User Amenities

Beside the trail itself, there are other facilities that increase the quality of the user experience. These amenities are collectively known as user amenities, and they include rest areas, benches, lighting and fencing.

5.6.1 Rest Areas

Rest areas are generally small nodes located along a trail, which offer places to stop and rest off the main traveled way of the trail. They may also serve as interpretive areas or overlooks (see below). The design of rest areas will vary depending on available land, interpretive possibilities and views, and the design of each one should be considered individually.

Trail rest areas should at least include a seating area and a place to park a bicycle. They may also include drinking water, restroom facilities and signage. Trail rest areas should be located at major trail intersections, scenic overlooks and after any prolonged uphill slope.

5.6.2 Benches

As exists on Mississippi River Boulevard, benches placed singly or in groups can offer a pleasant sitting environment for all trail users. While they do not constitute rest areas, trailside benches can also offer more flexibility in resting places throughout the Grand Round.

5.6.3 Lighting

Lighting should be located to support natural surveillance and maximize visibility, which increases security. Lighting is also intended to create a park-like and unified character along the entire route, using a pedestrian scale luminaire with a mounting height of approximately 15 feet. Light levels should attain a minimum 0.25-foot candle at the trail surface with a likely pole spacing of 200 to 250 feet. Due to the proximity of the route to established neighborhoods, care must be taken to reduce light levels beyond the route itself.

The example shown suggests a desirable type of lighting with the base, pole and luminaire reflecting a timeless design theme that is complementary to the many historic sections of the route. Lighting similar to this example are currently located along Mississippi River Boulevard and portions of Wheelock Parkway.

5.6.4 Decorative Fencing and Walls

Decorative fencing and walls occur at various locations along the corridor. Along the Mississippi River Boulevard segment, fencing provides a security barrier at the edge of the bluff line and serves to create a unified image. This fencing, which includes a combination of stone and iron, could be extended along the Shepard Road segment of the trail to unify the two segments. Fencing should only be used along other segments of the trail for safety

purposes or to designate rest areas. Fencing in other areas will create an artificial barrier and limit access to the Saint Paul Grand Round.

5.7 Landscaping

In some areas, the Grand Round offers the opportunity to incorporate landscaping into the trail corridor. In such cases, the Grand Round may act as a greenway, connecting and extending existing open spaces and natural areas. In order for this to be successful, native plants should be used wherever landscaping is planned.

Because the Grand Round route passes through diverse landscapes, including Mississippi River basin areas, a high terminal moraine and creek ravines, many plant palettes are possible along the route. Plants should be selected based on the site-specific conditions of a particular area. For instance, prairie grasses are appropriate in upland areas, but the river bluffs and ravines would better benefit from reforestation with native tree species.

5.8 Public Art

Wherever possible, public art should be incorporated into the Saint Paul Grand Round. Public art may take many forms, including sculpture, murals, unique bicycle racks, interpretive kiosks, site makers, neighborhood gateways and pedestrian bridges. Several programs offer assistance with the planning of public art, including the following.

- Public Art Saint Paul
- Great Streets program

These organizations may be consulted to help find artists or explore the possibilities for the inclusion of art.

6.0 – Preliminary Estimate and Phasing

Completion of the Saint Paul Grand Round is, in part, a function of project costs and alternative funding mechanisms. This section estimates preliminary construction costs, outlines the proposed phasing of improvements and identifies potential funding sources.

6.1 Estimate of Construction Cost

While a wide variety of construction elements contribute to a project's final cost, the most significant costs in development of the Saint Paul Grand Round include trail grading and surfacing, decorative walls/barriers and lighting. Preliminary estimates of construction costs have been determined for each of the trail segments.

Refer to Appendix C for further detail and quantities. These preliminary estimates are based on the improvements identified within this technical report.

A summary of the preliminary estimates for construction cost are shown in Table 1.

6.2 Proposed Phasing

Table 1 – Estimate of Construction Cost

Segment	Preliminary Estimate of Construction Cost
Mississippi River Boulevard	$ 634,230
Shepard Road	$ 409,860
Warner Road	$ 286,605
Johnson Parkway	$ 128,925
Mounds Boulevard	$ 67,635
Wheelock Parkway	$ 202,905
Como Park	$ 102,195
Como Avenue	$ 76,410
Midway Parkway	$ 52,245
Raymond Avenue	$ 119,745
Pelham Boulevard	$ 78,435
TOTAL	**$2,159,190**

Completion of the Saint Paul Grand Round is presented in three phases.

Phase I of the Saint Paul Grand Round includes the installation of directional and marker signs, safely improvements and addition of user amenities to the entire route, in order to establish the identity of the route. These user amenities will include:

- Design and installation of directional signage, including signage that identifies the route of the Saint Paul Grand Round. This signage will be installed on both new and existing posts.
- Design and installation of informational kiosks and interpretive site markers. These kiosks and markers will complement the character and will educate participants on the historic, natural and features located along the route of the Saint Paul Grand Round.
- Striping of on-road facilities (wide curb lanes) between Como Park to the Mississippi River (Midway Parkway/Como Avenue, Raymond Avenue and Pelham Boulevard) to improve safety and usability. This is the currently the only segment of the Grand Round without bike lanes.
- Design and construction of a half-mile segment of combined trail adjacent to Raymond Avenue or Pelham Boulevard where roadway widths and other constraints do not allow striping for on-road facilities. This segment will provide a safe and well-marked option for trail users.
- Design and installation of landscaping that extends the efforts of Greening the Great River along the route and around information kiosks/markers.
- Installation of benches, bike racks and recycling/waste receptacles along the route.

Phase II of the Saint Paul Grand Round includes the development of trail segments in conjunction with the reconstruction of roadways to maximize safety along the route of the Grand Round, including:

- Design and construction of a separated trail segment between Randolph Avenue and Chestnut Street, in conjunction with the relocation and reconstruction of Shepard Road through this area.
- Design and construction of a separated trail segment between Chestnut Street and James Avenue in conjunction with the relocation and reconstruction of Shepard Road and Warner Road through this area.

Phase III of the Saint Paul Grand Round includes all other projects to upgrade and enhance the Saint Paul Grand Round, including:

- Design and installation of additional user amenities, including rest areas, bicycle parking facilities, drinking fountains and benches along the entire route as needed.
- Construction of trail segments that provide connections to county, regional and state trails.
- Construction of off-road facilities, where possible, along segments with on-road facilities only.
- Construction of separated multi-use trails in high use areas currently served by combined trails.

- Installation of parking bays and bump-outs on roadways along various segments of the route to calm traffic and improve safety for users of the route.
- Construction of separated multi-use trails off the roadway along Shepard Road between the Highway 5/West 7th Street bridge and I-35E.
- Striping of a northbound bicycle lane on Mississippi River Boulevard in conjunction with roadway improvements.
- Construction of a trail underpass at I-35E to eliminate conflicts with vehicular traffic at the intersection with Shepard Road.
- Inclusion of appropriate bicycle and pedestrian facilities when the Warner Road bridge over the railroad is reconstructed.
- Widening and reconstruction of a narrow combined trail segment along Wheelock Parkway east of Arcade Avenue.
- On an annual basis, projects should be reevaluated and prioritized to respond to emerging safety issues and collaborate with other projects to capitalize on available funding.

6.3 Funding Sources

A wide variety of funding sources will likely be capitalized upon for completion of the Saint Paul Grand Round. Although most identified funding sources are federal, state and city agencies and programs, funding may also be available from other sources, such as private foundations and private donors.

Federal Sources

- TEA-21 (Transportation Equity Act for the 21st Century). This program administered by FHWA and Mn/DOT provides funding for transportation enhancements, bicycle transportation and pedestrian walkways and recreational trails, among other activities. Funding through this program is only available to local units of government and a local match is required.
- National Scenic Byways Program. This program provides technical assistance and grants to states for the purpose of developing scenic byways programs and undertaking related projects.
- National Park Service's Land and Water Conservation (LAWCON). This program funds recreational resource acquisition and development through a state apportionment process.
- National Recreational Trail Funding Program (SYMM'S Fund). This program provides funding for recreational trails that benefit non-motorized users. In Minnesota, it is administered by the Minnesota Department of Natural Resources (DNR).
- United States Forest Service America the Beautiful. This program provides grants to local units of government and non-profits for landscape beautification.
- National Endowment for the Arts, Promotion of the Arts, Design Arts. This program provides grants to promote excellence in design, including urban and public facilities.

An extensive listing of additional federal funding sources can be found in the Guide to Federal Funding and Assistance for Rivers, Trails and Opens Space Conservation. This guide includes a more detailed explanation of available funds, eligibility and limitations.

State Sources

- Minnesota Department of Natural Resources (DNR) Outdoor Recreation Grant Program. This program includes a combination of federal pass-through and state-funded grants to local units of government for acquiring and developing outdoor recreation facilities.
- Legislative Commission on Minnesota Resources (LCMR). This program provides state-funded grants to both local units of government and non-profits for development of recreational facilities.
- Metropolitan Council Regional Parks and Trails Fund. This program provides state funding for regional parks and trails, including connections to regional facilities.
- Minnesota Department of Transportation (Mn/DOT). This program provides state funds for trail improvements associated with roadway projects.

City Sources

- City of Saint Paul General Fund/Capital Improvement Program. General fund revenues from the City of Saint Paul can be used to leverage state or federal grants. Funding for projects can also be included in the City's annual capital improvements program.
- City of Saint Paul STAR Grant. This program provides grants to neighborhood organizations for the capital costs of improvement projects.

Other Funding Sources

Other sources of funding for the Saint Paul Grand Round may also be available; however, it is important to note that most government grants and other forms of assistance are competitive and substantial use limitations. Funding is also available from private foundations, corporations, and individuals. Individual donations and other community fund-raising initiatives, combined with volunteer labor, can enhance community support and ownership of the Saint Paul Grand Round.

7.0 – Roles and Responsibilities

Completion of the Saint Paul Grand Round will require collaboration and cooperation among the various stakeholders. In order to effectively implement the master plan, roles and responsibilities have been suggested for the principal stakeholders.

7.1 Saint Paul Neighborhood Energy Consortium

As this project moves into the implementation phase, the Saint Paul Neighborhood Energy Consortium will have the following roles and responsibilities:

- Continue to sponsor the Saint Paul Classic Bike Tour to generate support for and increase knowledge of the Saint Paul Grand Round.
- Continue to promote the Saint Paul Grand Round as an alternative transportation facility in support of the mission statement.
- Generate grass roots support for the project and serve as a liaison between the District Councils and other neighborhood groups.
- Provide administrative support and continue to collaborate with public agencies.
- Continue to lobby for funds to make the Grand Round a reality.

7.2 City of Saint Paul/Department of Public Works/ Department of Parks and Recreation

During the implementation phase of this project, the City of Saint Paul's Department of Public Works and Division of Parks and Recreation will have the following roles and responsibilities:

- Implement this master plan by securing funding for improvements.
- Apply for TEA-21 funding for a majority of improvements needed to complete the Saint Paul Grand Round.
- Construct facilities needed to complete the Saint Paul Grand Round.
- Work with the Saint Paul Neighborhood Energy Consortium on the design of user amenities and signage for the route.
- Operate and maintain of the Saint Paul Grand Round facility.
- Coordinate with other public works and infrastructure projects.
- Provide public information

7.3 Saint Paul Riverfront Corporation

The Saint Paul Riverfront Corporation is anticipated to have the following roles and responsibilities as this project is implemented:

- Support and lobby for the development and funding of the Saint Paul Grand Round, as needed.

7.4 Other Groups and Agencies

Other groups and agencies such as the National Park Service, Ramsey County, Neighborhood organizations and private sector groups, have played an important role in getting the project to a place where implementation is imminent. It is anticipated that these groups and agencies will continue to support the completion of the Saint Paul Grand Round, providing technical assistance and community input as needed to make the vision a reality.

8.0 – Next Steps

This section outlines the next steps that must be taken to implement this master plan and complete the Saint Paul Grand Round. The Saint Paul Neighborhood Energy Consortium (NEC) has been leading the collaborative effort to make the Saint Paul Grand Round a reality and will continue to support the project. A second phase of this Master Plan would include identification of specific locations for user amenities, a detailed look at operations and maintenance and an implementation strategy for improvements. However, the City should now have primary ownership of and responsibility for the community vision represented in the master plan.

8.1 Funding of Improvements

All major funding sources for this type of project, including TEA-21, require that a public agency administer the funding. In order to be eligible for funding in the amount needed to make this project a reality, the City must take on the responsibility for implementing the plan. The City Council will need to accept this master plan and commit the resources necessary to ensure its implementation. The involvement of the Saint Paul Department of Public Works and/or the Division of Parks and Recreation is imperative to the success of this project.

The City's Comprehensive Plan supports the development of connections throughout the community and the Parks and Recreation Chapter of the Plan specifically supports the completion of the Saint Paul Grand Round.

8.2 Operations and Maintenance

The City of Saint Paul will also be responsible for on going operation and maintenance of the Saint Paul Grand Round – a public facility, open 24 hours per day on a year-round basis. In fact, the City is already responsible for the operation and maintenance of most of the existing segments that will make up the Saint Paul Grand Round. Maintenance elements may include:

- Snow removal
- Sweeping trails' hard surface areas
- Trash and debris removal
- Landscape maintenance
- Preservation of the infrastructure's integrity
- Monitoring built items for liability control

8.3 Scenic Byway Status

Decisions will need to be made as to whether State and/or National Scenic Byway status should be pursued. The intrinsic qualities of the Saint Paul Grand Round are found throughout this technical report and the accompanying interpretive themes and sites report. If a decision is made to pursue such designation once the Saint Paul Grand Round is complete, a corridor management plan will need to be prepared. Consideration should also be given to seeking designation for both the roadway and trail portions of the route.

BIBLOGRAPHY

APPENDICES

APPENDIX A

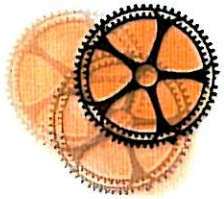
- Design Guideline resources

APPENDIX B

- Saint Paul Grand Round
  Interpretive themes and sites
  The 106 Group Ltd.

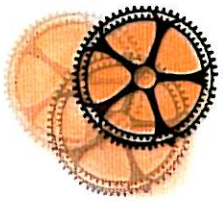
APPENDIX C

- Preliminary Cost Estimates



APPENDIX A

- **Guide for the Development of Bicycle Facilities**, American Association of State Highway and Transportation Officials (AASHTO): 1999 (hereafter referred to as the AASHTO Guide). This is the recognized standard for bicycle design guidelines. Updated in 1999, this document contains the most current recommendations available. In addition, trails which will receive federal transportation funding must adhere to these AASHTO guidelines.
- **Manual on Uniform Traffic Control Devices**
- **A Policy on Geometric Design of Highways and Streets "Green Book,"** AASHTO. This resource offers design details for Interstate and Primary Road design.
- **Recommendations for Accessibility Guidelines:** Outdoor Developed Areas Final Report, U.S. Architectural and Transportation Barriers Compliance Board (U.S. Access Board): 1999. This document is the final report of the Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas. This committee developed accessibility recommendations through a consensus process for a variety of outdoor areas, including trails. The U.S. Access Board will use the committee's recommendations, in conjunction with public comment, to develop standards for compliance with the Americans with Disabilities Act (ADA). Until standards are developed, this report contains the best information for meeting the requirements of the ADA.
- **Designing Sidewalks and Trails for Access:** Part II of II: Best Practices Design Guide, Federal Highway Administration (FHWA): 2000. This document provides detailed planning and design recommendations for developing pedestrian and non-motorized multi-use trails that meet the needs of a broad spectrum of users, including people with disabilities. This document also contains background information regarding user needs, the benefits of universal design, and recreation equipment used by people with disabilities.
- **Selecting Roadway Design Treatments to Accommodate Bicycles**, Federal Highway Administration: 1994. This is primarily a planning document for bicycle facilities, but also offers general design guidelines. This document makes frequent reference to the AASHTO Guide described above.
- **Minnesota Bicycle Transportation Planning and Design Guidelines**, Minnesota Department of Transportation: 1996. This document offers both planning guidance and design guidelines. It is nationally recognized for its detailed guidelines dealing with roadway crossings.
- **Oregon Bicycle and Pedestrian Plan**, Oregon Department of Transportation: 1995. This is a detailed, well-organized planning and design guide. It is known for innovative recommendations for pedestrian and bicycle accommodation with traffic calming and expressway interchanges.
- **Portland Pedestrian Design Guide**, City of Portland, Oregon, Office of Transportation: 1998. This guide focuses on the accommodation of pedestrians in urban areas.
- **Hennepin County Bicycle Transportation Plan**, Hennepin County, Minnesota, Department of Public Works: 1996. This document gives an extensive array of guidelines for the implementation of bicycle facilities within road rights-of-way.
- **General Guidelines for In-line Skating Trails**, Rollerblade In-line Skate Association.



APPENDIX B

SAINT PAUL GRAND ROUND

CULTURAL RESOURCES AND INTERPRETIVE THEMES

SAINT PAUL, MINNESOTA

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1.0 INTRODUCTION

The 106 Group Ltd. was subcontracted by SRF Consulting Group, Inc. and the Saint Paul Neighborhood Energy Consortium (NEC) to develop the cultural resources component of the proposed Saint Paul Grand Round project. The Saint Paul Neighborhood Energy Consortium is a nonprofit coalition of community organizations serving Saint Paul area residents and businesses. Its purpose is to provide information, services and programs that contribute to an environmentally responsible community. The proposed Saint Paul Grand Round project is intended to provide focus and momentum that will guide future facility improvements. Specific objectives include:

- Affirmation of the Grand Round route;
- Identification of safety improvements;
- Enhancement of the Grand Round's image and creation of a distinct identity;
- Emphasis of other attributes of the Grand Round, including cultural and natural resources;
- Determination of capital improvement costs, funding sources, and phasing;
- Establishment of community and neighborhood momentum.

The NEC's work is intended to provide a foundation for future improvement and creative energy that fosters community support.

The 106 Group is part of the planning team for development of the Saint Paul Grand Round. The key components to the cultural resources work at this stage are to: 1) identify key themes in St. Paul history; 2) identify resources related to those key themes in consultation with the technical advisory committee; 3) provide research regarding priority sites; and 4) identify potential strategies for interpretive development of sites.

Saving a public past for any community is a political as well as historical and cultural process. Decisions about what to remember and protect are informed by historical scholarship as well as the possibilities of historic preservation, museum and educational programs, environmental protection, and public art. Yet all of these approaches to conserving the past operate in partial and sometimes contradictory ways. The traces of time embedded in the urban landscape of every city offer opportunities for reconnecting fragments of the American urban story. The development of the Grand Round provides a great opportunity to re-connect with our city's and communities' past in exciting ways.

One of the ways we learn about each other is by sharing accounts and believing or disbelieving those stories about each other's past and identities. Identity is intimately tied to memory: both our personal memories (where we have come from and where we have lived), and the collective or social memories interconnected with the histories of our families, neighbors, and fellow workers. Memory is naturally place-oriented. A memory connects spontaneously with a place. Places trigger memories for each community's

residents who have shared a common past, and at the same time, places often represent shared pasts to visitors who are interested in learning about them in the present. Incorporating that sense of place into the urban design is critical if the full power and meaning of the place is to be maintained or enhanced.

1.1 Interpretive Themes

Six themes were identified, with associated sites or resources to interpret or view. They are as follows:

Creation of St. Paul's Park System
- Como Park
- Phalen Park
- Harriet Island Park
- Wheelock Parkway
- Johnson Parkway
- Midway Parkway
- Mounds Parkway
- Mississippi River Boulevard

Immigrant Communities in St. Paul
- Swede Hollow
- Little Italy at Upper Levee
- West Side Flats

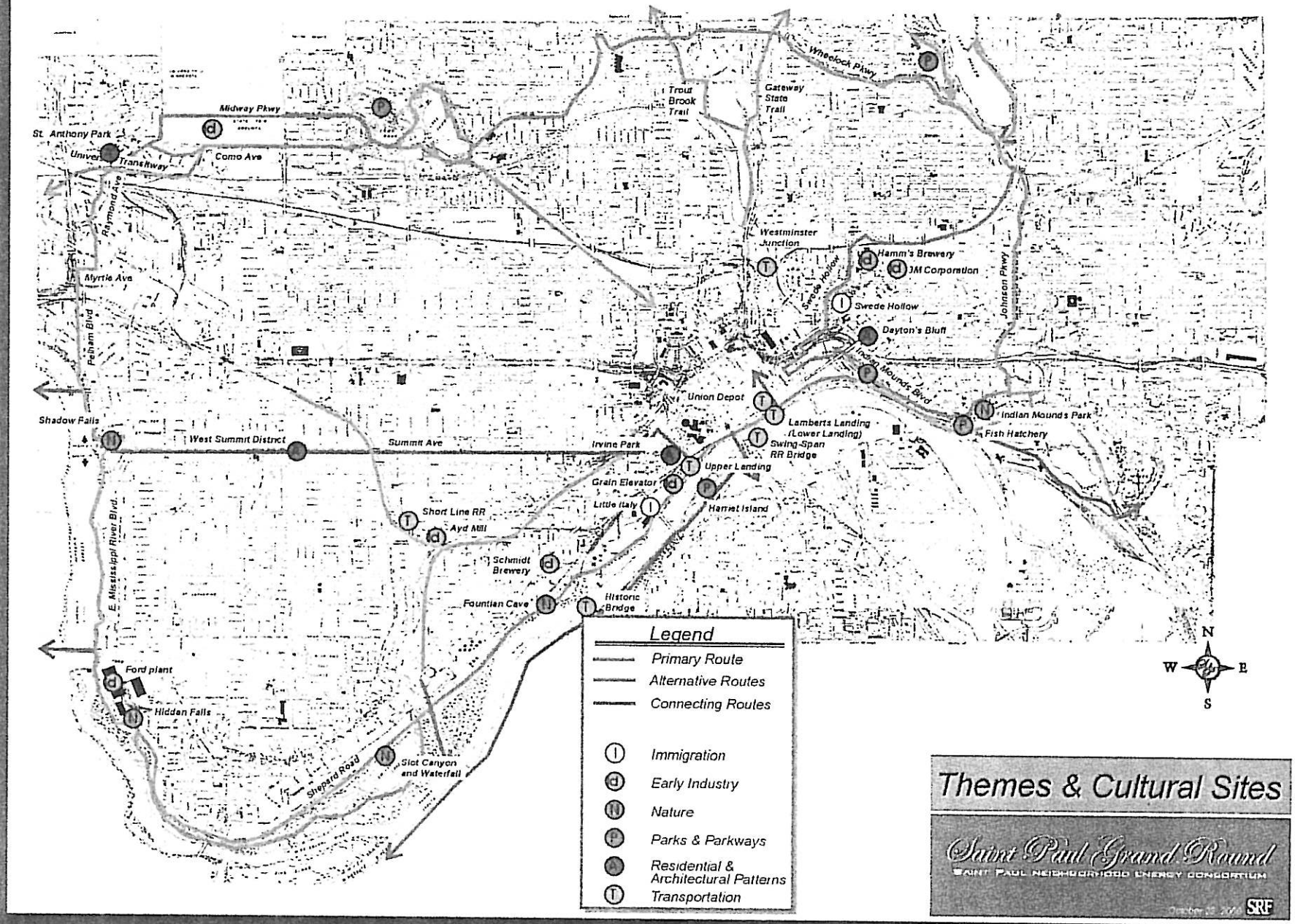
Paddle Wheels and Steel Wheels
- Upper Landing
- Lower Landing
- Lowertown
- Lock and Dam No. 1
- Short Line Railroad
- Omaha Swing Span Railroad Bridge
- Westminster Junction
- Union Depot
- Drewry Lane Bridge L9218
- Johnson Parkway Bridge 90422

Early Industry
- Ayd Mill
- Hamm's Brewery
- Schmidt Brewery
- Grain Elevator/Farmer's Union Terminal
- Ford Plant
- 3M Plant

Residential and Architectural Patterns
- Irvine Park
- St. Anthony Park
- Historic Hill District
- Summit Avenue
- Dayton's Bluff
- Streetcar Suburbs
- Little Italy
- East Side Worker's Housing

Current St. Paul
- St. Paul's Park System
- Immigrant Communities
- Paddlewheels and Steel Wheels
- Early Industry
- Residential Patterns

The Mississippi River and Natural Landscapes


Midway Pkwy
St. Anthony Park
Como Ave
Transitway
Raymond Ave
Myrtle Ave
Pelham Blvd
Shadow Falls
West Summit District
Summit Ave
Irvine Park
E. Mississippi River Blvd.
Ford plant
Hidden Falls
Shepard Road
Slot Canyon and Waterfall
Short Line RR
Ayd Mill
Schmidt Brewery
Fountain Cave
Historic Bridge
Grain Elevator
Little Italy
Harriet Island
Union Depot
Upper Landing
Lamberts Landing (Lower Landing)
Swing-Span RR Bridge
Trout Brook Trail
Gateway State Trail
Wheelock Pkwy
Westminster Junction
Hamm's Brewery
3M Corporation
Swede Hollow
Dayton's Bluff
Johnson Pkwy
Indian Mounds Blvd
Indian Mounds Park
Fish Hatchery
Legend
Primary Route
Alternative Routes
Connecting Routes
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Themes & Cultural Sites
Saint Paul Grand Round
SAINT PAUL NEIGHBORHOOD ENERGY CONSORTIUM
SRF

2.0 INTERPRETIVE THEMES AND RELATED SITES

2.1 Theme – Creation of St. Paul's Park System

2.1.1 Overview

Influenced by the City Beautiful movement and the urban design developments in Chicago and New York, St. Paul and Minneapolis began designing parks and parkways to enhance their environments. St. Paul's parks system was heavily influenced by prominent landscape architect H. W. S. Cleveland. The architect's ideas for St. Paul included the creation of large public park sites, such as the land around Lake Como and Lake Phalen, and land adjacent to the Mississippi River. The parkways in St. Paul, which the Grand Round trail roughly follows, grew out of a desire to link the major parks in an unbroken chain encompassing all areas of the city.

2.1.2 Discussion

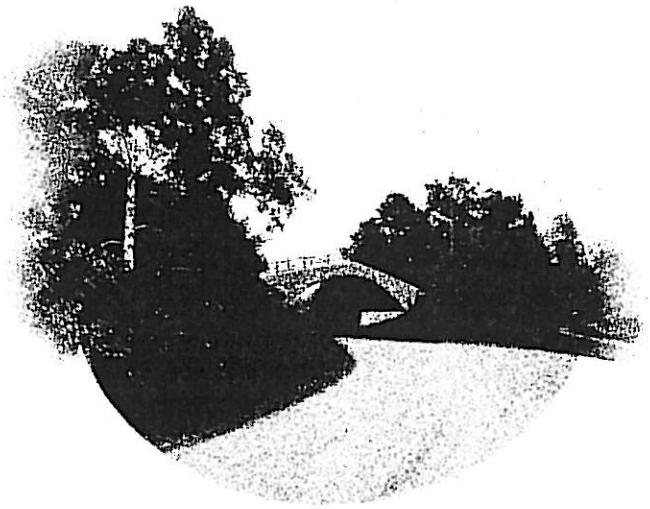
As American cities grew increasingly congested in the mid- to late-nineteenth century, reformers began advocating the creation of public parks within urban areas. Citing the healthful, wholesome, and morally rejuvenating effects of nature, architects and landscape architects began designing natural, picturesque parks. The first and best known example of such an endeavor was Central Park (1856-1876), designed by Frederick Law Olmsted and Calvert Vaux, famous for its use of rolling carriageways and pedestrian paths separated by overpasses and underpasses. Olmsted and other landscape architects, such as Horace Cleveland, would take this concept one step further by designing systems of parks connected with roadways carefully landscaped to block out the urban setting.

These "parked highways" or parkways, though born in the Victorian Era, reached their zenith during the age of motorized travel in the United States. Their heyday came between the turn of the century and just prior to the development of the limited access freeway in the early 1930s. As pedestrian travel in the United States gradually gave way to more rapid forms of surface transportation, including bicycles and automobiles, the concept of public parks was broadened to include park-like settings that could be enjoyed from a rapidly moving vehicle. Parks could be located outside of congested city centers and could therefore be more expansive; the scenic parkway could be used to link parks and other significant city spaces.

The urban parkway grew out of the City Beautiful movement, a philosophy of city planning which emphasized order and harmony. In 1891-93, the World's Colombian Exposition in Chicago had promoted the classical ideal for most of its structures and

utilized careful placement of buildings and open space throughout the fairgrounds. In 1895, architect and city planner Daniel Burnham began work on the so-called Chicago Plan that envisioned grand plazas, formal parterres, and triumphal gateways for the Windy City.

In the late-nineteenth and early-twentieth centuries, cities of all sizes adopted the wide boulevards and extensive park systems of the City Beautiful movement. Following the tenets of City Beautiful planning, late-nineteenth century city fathers everywhere sought to widen and straighten existing streets. As landscaping concepts were gradually added to these designs, the roads were referred to as "ornamental driveways," "avenues of trees," landscaped boulevards," and "metropolitan driveways." In time, the term "parkway" became ubiquitous and was used to denote a wide roadway with either a dividing strip or side strips of greenery, plantings, and trees. Four-lane divided parkways immediately preceded the invention of the limited access freeway or expressway.



The designing of parks and parkways in Minneapolis and St. Paul were influenced by cultural developments in Chicago and in other cities. The parkways in St. Paul grew out of a desire to link existing and projected major parks to each other in an unbroken chain encompassing all areas of the city. The parks planning process began in 1872, when Cleveland addressed the St. Paul common council concerning locations for parks, boulevards, squares, and other amenities. Among many ideas generated by Cleveland at this time were suggestions for public park sites, including Summit Hill, the land around Lake Como and Lake Phalen, and land adjacent to the Mississippi River.

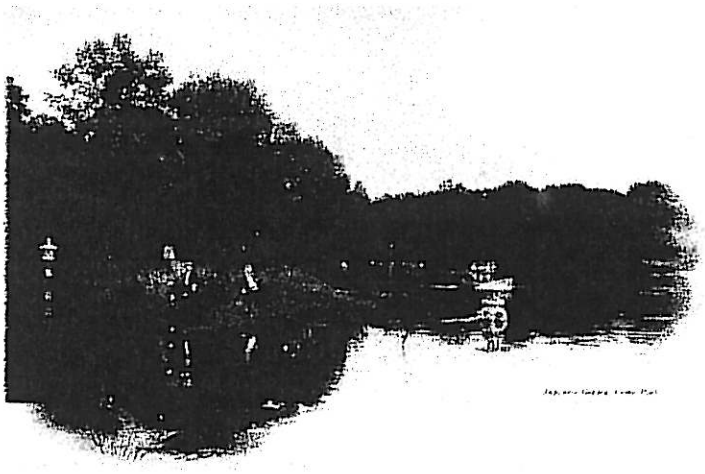
Only the recommendation to purchase land for the creation of Como Park was immediately acted upon. By 1884, the Board of Park commissioners had been created, and they began consideration of other major parks in St. Paul. These parks were sometimes referred to as the "landscape" parks to distinguish them from the smaller "public squares" that had been donated to the city in its early days. The new parks system started with acquisition of land for Phalen Park in 1892 and for Indian Mounds Park in 1893. The long-time Parks Superintendent, Frederick Nussbaumer, was appointed in 1891 and was an important force in the realization of the landscape parks plan. Nussbaumer served until 1922 and worked closely with successive Park Commissions.

By 1895, the Park Commissioners declared that enough smaller, neighborhood parks existed in the city, but larger parks and parkways were still needed. Their goal for park development envisioned a system of "boulevards or parkways" which would connect Indian Mounds Park with Phalen Park, Phalen Park with Como Park, Como Park with the State Fairgrounds, an improved Snelling Avenue from the fairgrounds to the Mississippi River, and a Mississippi bluff boulevard from Snelling to the Minneapolis system. At this point, the words "parkways," "boulevard," and "ornamental driveway" were all being used by the Commissioners, apparently interchangeably, to describe the concept of a wide, landscaped, aesthetically-pleasing roadway in the city. Summit Avenue was considered a "parkway" and was included in the 549 acres of parks and parkways mentioned in the 1894-1895 Annual Report, although it was not technically under the jurisdiction of the Parks Department.

The focus of St. Paul's parks changed during the early-twentieth century, moving away from purely naturalistic sites to recreational activity centers. Under the direction of Nussbaumer, St. Paul's parks became destinations for swimmers, skiers, golfers, or people who wanted to enjoy band performances at a park pavilion. Many of St. Paul's parks retain the recreational feel established during this time.

2.1.3 Interpretive Sites

Como Park. Established in 1873 as St. Paul's first park under the authority of the newly formed park commission, Como Park was developed with curvilinear roads, picturesque vistas, naturalistic features, and a variety of plantings, illustrating designer Cleveland's desire to create a beautiful escape from city life within the city. From the 1890s to the 1920s, under the direction of Park Superintendent Frederick Nussbaumer, the park evolved from a landscape to a recreational park, with the Pavilion, Conservatory, and picnic grounds added. The Conservatory, one of the park's most notable architectural features, has been placed on the National Register of Historic Places and the frog pond in front of the Conservatory has been recently restored.



Phalen Park. Acting under the recommendations of Cleveland, St. Paul purchased 129½ acres around Lake Phalen to create the second large-scale park in St. Paul. Opened in 1899, the park followed Como Park's example and evolved into a

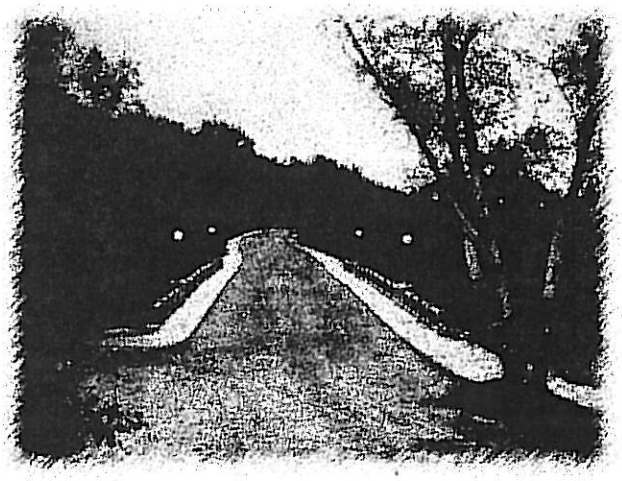
recreational facility, over time offering swimming facilities, bicycle and walking paths, and the first municipal golf course in St. Paul. Phalen Park remains a popular recreational area today, providing area residents with skiing trails, bike paths, and St. Paul Winter Carnival displays.

Wheelock Parkway. After some 30 years of opposition from small property owners along the route, the land for the long-anticipated parkway linking Como and Phalen parks was finally acquired in 1908. Opened in 1914, the interlake boulevard was named Wheelock Parkway after Joseph A. Wheelock, long-time proprietor of the *St. Paul Pioneer Press* and member of the first Park Commission, who is credited with the original vision for an interconnected system of parks.

Johnson Parkway. First visualized in 1895, land for the north-south parkway linking Phalen Park and Indian Mounds Park was not purchased until 1913. Named for John A. Johnson, Governor of Minnesota from 1904 to 1908, the parkway was not completed until the early 1930s due to budget constraints.

Midway Parkway. The lands needed to construct a connecting boulevard from Como Park to the Minnesota Fairgrounds were acquired in 1901. While the original plans for the boulevard called for continuing the parkway from the Fairgrounds to the Mississippi River Boulevard, these plans were never implemented due to budget constraints and land acquisition problems.

Mounds Parkway. The stretch of land connecting Mounds Park was desirable to the city based on "the sculptured hills, valleys and gorges that present a charming landscape effect." As with the other parkways, work began on Mounds Parkway in the early 1900s, but the route was not completed until the 1930s.

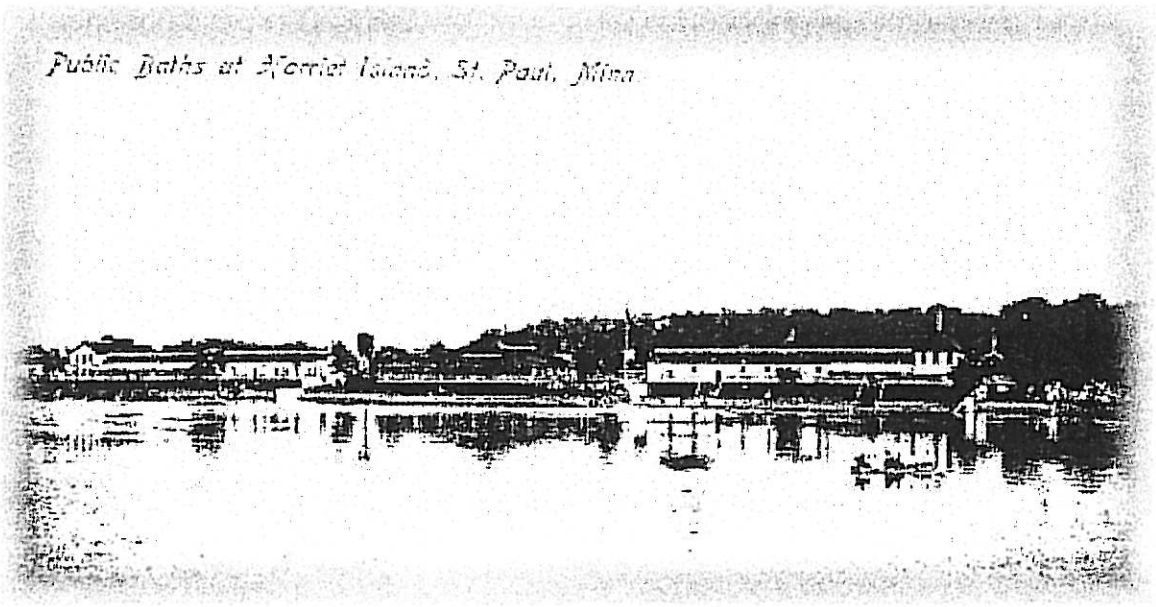


Mississippi River Boulevard. Following the crest and slope of the eastern side of the Mississippi River, the Mississippi River Boulevard was constructed between 1901 and 1907, offering travelers a scenic view of the wooded lands and sweeping bluff views of the river that made Minnesota famous.

Harriet Island. Located on the west bank of the Mississippi River in St. Paul, Harriet Island has served as a recreational center for most of the twentieth century. At the turn of the century, the island became strongly associated with the public health movement. Dr. Justus Ohage, the city Commissioner of Health, donated the park to the

City. Ohage was looking for a location to establish public baths and playgrounds because he felt that "cleanliness and healthy outdoor exercise [were] absolutely necessary to the maintenance of good health". In addition, maintaining an area for supervised swimming would reduce the number of drownings. In designing the public baths, Ohage copied "the most approved bathing institutions in this country and Europe". Tens of thousands of people used the baths each year during the first two decades of this century. The public health movement came hand in hand with other Progressive Era reforms, which sought to address society' ills through significant government intervention for the first time.

While most of the structures from the park's early days have been demolished, the park remains a recreational area. The Harriet Island Pavilion, a Moderne-style structure construction by the Works Progress Administration (WPA) in 1941, is an important visual component in the public landscape of the City of St. Paul. The park was not an organized part of the park system, but was managed by the Department of Public Health.



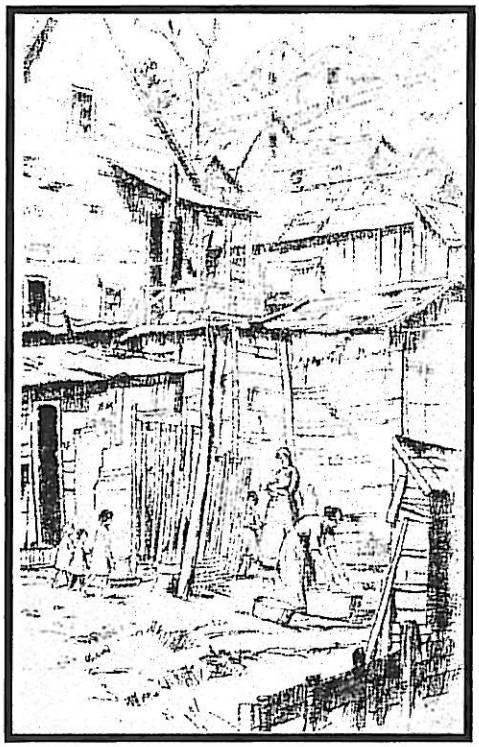
2.2 Theme – Immigrant Communities in St. Paul

2.2.1 Overview

With few resources, and often facing language and social barriers, recent immigrants were generally relegated to live in the less desirable areas in St. Paul. There are three unique examples of early immigrant communities along the Saint Paul Grand Round trail: Upper Landing/Little Italy, Swede Hollow, and the West Side Flats.

2.2.2 Discussion

During the early 1830s, Euro-American settlement was confined primarily to the Fort Snelling military reservation, but following an 1837 treaty with the Dakota and Ojibway Indians and the removal of civilians from the military reservation, settlers established a town which would become St. Paul. Located below Fort Snelling at the confluence of the Mississippi and Minnesota rivers, the first settlers in the town arrived around 1839. Taking advantage of the transportation afforded by the Mississippi River, St. Paul's earliest settlers took up claims along the waterway. A community of French Canadians settled in the area of Pig's Eye Lake, that is now occupied by the Metropolitan Wastewater Treatment Plant. By the early 1840s, settlement stretched from the river six miles in length and a mile or more in width. Settlement concentrated, however, in the area that would become downtown St. Paul, due to the level terraces which made excellent sites for steamboat landings. The level, gently sloping ravines, carved into the bluffs by Phalen Creek and Trout Brook, served as a natural transportation corridor from the river landings to the higher ground and on the more distant points.



The City of St. Paul experienced a population explosion during the 1850s and 1860s. While many of the early settlers were native-born Americans, a sizable percentage of the new residents were recent immigrants to the United States, who, after a short time in the eastern states, headed west in search of cheap farmland or work in the emerging industries of the St. Paul area. Over the next 50 years, the city became a melting pot of Irish, English, German, Jewish, Scandinavian, Italian, African American and Mexican peoples. St. Paul's immigrants played an important role in the development of St. Paul, often providing the back-breaking labor for the projects that built up the city.

As these immigrants improved their lot, they would move up and out of the areas they originally settled to new neighborhoods, making way for the next group to move in.

Increasing numbers of Scandinavians arrived in St. Paul during the 1860s and 1870s. The majority of the Swedes who arrived in St. Paul settled within "Svenska Dalen" or Swede Hollow in the North Phalen Creek area. Most Swedish men originally worked for the railroads doing pick and shovel work; however, as local industry developed, many of the men went to work at Hamm's Brewery or the mills. The Swedish women also worked, taking in laundry and sewing, selling food and coffee to the railroad men, and opening their homes to boarders for $.10 a day. From 1885 to 1895, many Swede Hollow residents moved into the Railroad Island and Payne Avenue areas as their economic and social status improved.

German immigrants also flooded St. Paul during the last half of the nineteenth century. Many Germans immigrated to Minnesota after spending time in the eastern or southern United States, allowing them to become acclimated to American and to gain some capital. Because of this, many German immigrants were able to open businesses and live in more affluent areas of the city. There were also a number of German immigrants, however, who arrived directly from German without much money or English-speaking skills. Many of these people lived in neighborhoods such as Seven Corners/Uppertown and Frogtown in proximity to the industrial jobs of downtown.

In 1882, a major shift in immigration occurred. Previously, only one-tenth of the immigrants to St. Paul had been from Southern or Eastern Europe, while in 1882 the number increased to eight-tenths. Italians, Russians, Poles, Greeks, and Jews arrived in great numbers between 1880 and 1910. These new immigrants, like the Swedes before them, looked for cheap housing and jobs in the booming railroad and manufacturing industries. While the Italians moved into the vacant housing in Swede Hollow or settled in the Upper Landing area, a new community was set up for the Jewish immigrants. Located on the Mississippi River floodplain below the west bank of St. Paul, the West Side Flats started as a temporary housing solution for the Jewish refugees that reached St. Paul in 1882.

By the 1920s, the demographics of St. Paul's immigrant population changed again, as over 1,500 Mexicans moved to the city to work in the sugar beet industry. As the numbers began to increase, two major sites for Mexican settlement developed in St. Paul. The larger community settled on the West Side of St. Paul around Concord and Robert, while significant numbers of families settled in the old homes of the Italians in Swede Hollow.

Flooding was a continual problem for the communities on the banks of the Mississippi. Eventually, many of the original immigrant sites in St. Paul were destroyed during the 1950s, when the city began to address the substandard living conditions of the city's residents. Areas such as Swede Hollow, the West Side Flats, and Little Italy were condemned and leveled to make way for industrial parks or simply to clear out areas

deemed unsanitary and crowded. While these sites may no longer exist, their histories remind us how immigrants to the city overcame the economic and cultural hardships of their new lives in America and how the small enclosed community helped in their assimilation and growth into the American society.

2.2.3 Interpretive Sites

Swede Hollow. In the 1850s, impoverished Swedish immigrants began to settle in the old claim shanties in the Phalen Creek Valley and the area soon became known as Swede Hollow. As increasing numbers of Swedes arrived in St. Paul during the 1860s and 1870s, many of them settled in the hollow, built houses on the slopes of the ravine, and obtained jobs in the nearby railroads, mills, and manufacturing plants. Swede Hollow continued to serve as a lower income community occupied by successive waves of immigrants, such as Italians and Mexicans, until the 1950s.

Upper Levee/Little Italy. First settled in the 1880s by German and Polish squatters occupying small shanties made of scrap lumber and tin, the marshy and often-flooded land soon developed into a dynamic Italian community. The southern Italian immigrants constructed somewhat more substantial homes and established large gardens, but often did not invest too much into their new surrounding since most had come to American temporarily to earn money to take back to Italy to establish a homestead. Oftentimes, the houses were occupied by a family and up to five borders, creating crowded and substandard living conditions. Little Italy existed until 1959, when after the floods of 1951 and 1952 and the damage to the poor housing, the city planned to build a floodwall and develop the riverfront for industrial uses.

West Side Flats. The low-lying floodplains on the west side of the Mississippi River remained unoccupied until 1882, when 200 Eastern European Jewish refugees arrived in St. Paul looking for shelter and a new place to call home. Originally set up in tents, the Jews eventually built more permanent structures in the West Side area and developed a dynamic and thriving Jewish community in St. Paul. By the 1930s, when the Jewish community was moving away from the flats, Mexican immigrants established the West Side Flats as their home, residing there until 1964 when the last family vacated the area before it was redeveloped into an industrial park.

2.3 Theme – Paddle Wheels and Steel Wheels

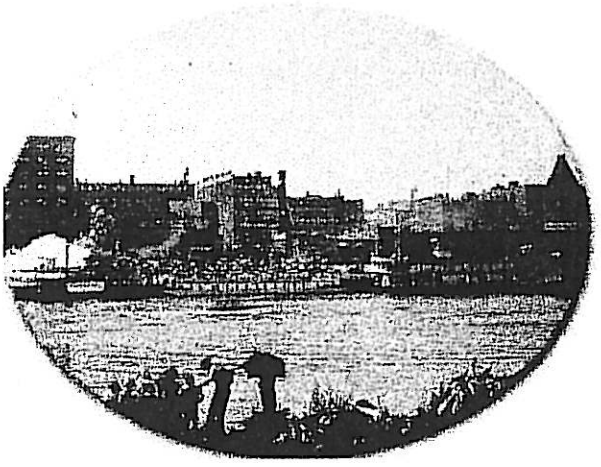
2.3.1 Overview

Although St. Paul did not have the waterpower that St. Anthony and Minneapolis had, its position at the head of continuous navigation on the Mississippi River gave St. Paul an advantage in commerce. With the coming of the railroads, St. Paul's position as a commercial center was enhanced. The Grand Round trail includes several important transportation sites that helped to shape St. Paul into a regional transportation hub.

2.3.2 Discussion

When news of fertile land and virgin forests available for exploitation in the Minnesota Territory reached the East, settlers and businessmen streamed into the area. St. Paul became an important trading point connecting the Mississippi River boats and the Red River ox cart trails. St. Paul was a destination for trade goods from Pembina and the Selkirk colony (Winnipeg), and it became a staging point for settlers funneling up the Minnesota River Valley after 1851. At this time, the river bluffs separated the Upper and Lower Levees, and commercial enterprises at each were operating in competition as "break-in-bulk" points where items were off-loaded from steamboats to ox-carts.

The Minnesota Territory was established by the federal government in 1849 and St. Paul was made the capital. St. Paul proper was platted in 1847, the Uppertown area (Rice and Irvine's Addition) was platted two years later, and Lowertown followed in 1851. The federal government allowed settlement on land west of the Mississippi River in 1851, which led to a period of rapid economic expansion for St. Paul. Population in the city grew from less than 1,000 in 1849 to over 10,000 in 1860. As a result of this population growth, construction of warehouses, grain elevators, and other shipping-related properties exploded in the levee areas of the city.



The steamboat traffic industry in St. Paul boomed along with the immigration to the city, with passenger travel far exceeding freight transportation on the steamboats. By the late 1850s and early 1860s, the increased population in the state and the rise in the industrial and agricultural production in Minnesota meant more traffic for the steamboats along the Mississippi River. As the 1860s progresses, railroad lines began connecting St. Paul to other cities

and to the national network. While railroads and steamboats operated in conjunction for a time, by the early 1870s, the importance of the steamboat was diminishing to the railroad transportation system.

Although most of Minnesota's railroad building occurred after the Civil War, the first charter was granted in 1857 to the Minnesota and Pacific Railroad. During the late 1860s and early 1870s, St. Paul witnessed a flurry of railroad building. By 1874, St. Paul had connections traveling in all four directions. New railroad lines included: the Lake Superior and Mississippi Railroad (Northern Pacific), which connected St. Paul to Duluth; the St. Paul, Stillwater and Taylor's Falls (Chicago & Northwestern) line running east; the St. Paul and Chicago Railroad (the Milwaukee Road), which followed the river south; and St. Paul and Pacific (Great Northern) running west.

The 1870s was the decade of western railroad expansion and the railroads played a significant role in St. Paul's development. Much of the development along the riverfront at this time was railroad oriented. The city developed as a regional transportation hub because, as the steamboat-ox cart network declined in importance, the railroads played and increasingly larger role.

In the 1870s and 1880s, the smaller, pioneer railroads were swallowed up in mergers with larger lines, giving St. Paul more regional connections and increasing its importance as a hub. The St. Paul, Minneapolis & Manitoba (St.PM&M) took over the old St. Paul & Pacific in 1879, marking the beginning of James J. Hill's "Empire Builder" line, later know as the Great Northern. The next year, in 1880, the St. Paul, Stillwater & Taylor's Falls Railroad merged with several others to form the Chicago, St. Paul, Minneapolis & Omaha (St.PM&O), which in turn merged with the Chicago & Northwestern in 1904. Not only did many regional and national railroads pass through St. Paul, a number of them had headquarters in the city, including Hill's line and the Northern Pacific. By the turn of the century, St. Paul had become a gateway to the northwest.

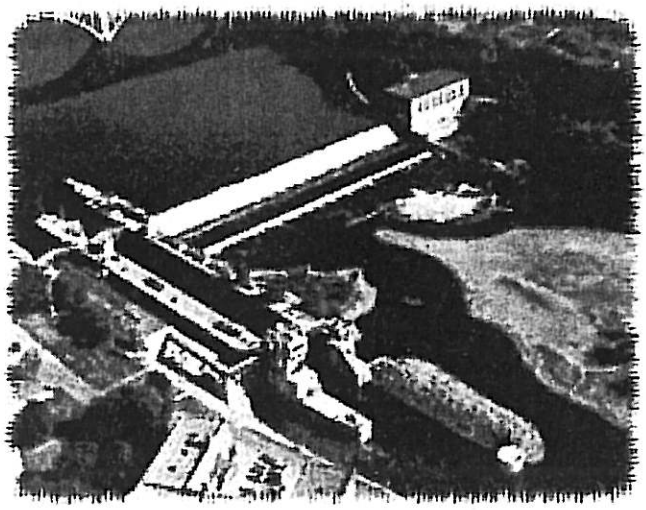
2.3.3 Interpretive Sites

Upper Landing. The area around Shepard Road and Chestnut Street was one of two steamboat landings established during the initial settlement and development of St. Paul. Known as the Upper Landing or Uppertown during the 1850s, the area competed with Lowertown to be St. Paul's commercial center. Utilizing the steamboat trade, which brought goods and settlers to the newly incorporated Minnesota Territory, the first developments around the landing included a mix of residential and commercial, including warehouses and stores, houses, and factories.

Lower Landing. During the mid to late 1800s, St. Paul's Lower Landing was bustling with steamboats responsible for the trade of goods in the upper Mississippi River area, as well as the transport of thousands of settlers to Minnesota. The broad, open levee

below the Mississippi River bluffs for the construction of warehouses and shops made it a logical location for a steamboat landing. The Lower Landing was a desirable location for the expanding railroads that spread through St. Paul during the last half of the nineteenth century, continuing the area's importance in St. Paul transportation development.

Lowertown. St. Paul's history as a commercial center is embodied in the Lowertown Historic District. Extending to Jackson Street, the district borders the Mississippi River and surrounds Smith Park. Lowertown was platted at one of St. Paul's two steamboat landings in 1851 by Norman Kittson, and it quickly grew into the city's main warehouse and jobbing center. As the railroads came to St. Paul in the 1860s and 1870s, they were naturally attracted to the established commercial area. As a result of the transportation connections, four and five story brick warehouses and factories, designed by architects such as Cass Gilbert and J. Walter Stevens, came to line the streets of Lowertown.



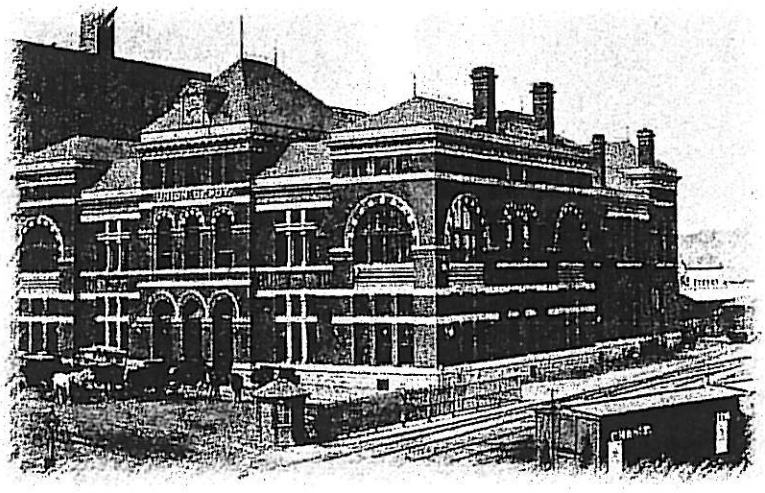
Lock and Dam No. 1. A movement began in the 1850s to build a dam that would extend the Mississippi River traffic into Minneapolis; however, it was not until the early 1900s that work on the proposed dam system began with construction of Dams Nos. 1 and 2. Lock No. 2 was completed first near the Lake Street Bridge, but was soon demolished once it was decided that a single lock and dam would be more beneficial for navigation and hydropower. Dam No. 1 was an Ambersen dam that had to be redesigned from a 13.3-foot lift to a 35.9-foot lift to accommodate the removal of Dam No. 2. This lift made Dam No. 1 the highest on the Mississippi River until the early 1960s when the Upper St. Anthony Falls lock and dam was completed. Designed by Major Francis R. Shunk and George W. Freeman of the St. Paul Corps of Engineers, this dam is notable as the only fixed dam on the Mississippi River and the only navigation dam on the river built with a hydropower plant foundation. It also marks an appropriate dividing point between hydropower uses for the Upper Mississippi and primarily navigation below St. Paul.

Short Line Railroad (Milwaukee Road). In 1875, the Chicago, Milwaukee, and St. Paul acquired right-of-way for a "Short Line" between St. Paul and Minneapolis in order to create a more direct commuter route between the Twin Cities and to supplement the existing connections between Minneapolis and St. Paul. The railroad company began laying its Short Line tracks up the ravine adjacent to the Ayd Mill, but construction was not completed until 1880 with the laying of the final 8.3 miles of track. The Short Line

played a role in transporting commuters and day excursions to destinations such as Union Park, located midway between St. Paul and Minneapolis.

Omaha Swing Span Railroad Bridge. Built with a 160-foot wide barge channel and a swing span to allow for barge traffic along the Mississippi River, the Omaha Swing Bridge was constructed in 1915. Providing access from St. Paul to Mendota and the southwestern portion of the state, the single-track, ten-span bridge was historically used by the Chicago, Milwaukee, and St. Paul Railway and the Chicago, St. Paul, Minneapolis, and Omaha Railway.

Westminster Junction. Built in stages beginning in 1885, this railroad junction illustrates the significant impact that railroads had on St. Paul's developing urban landscape. The junction was created in the early 1870s, when the St. Paul, Stillwater & Taylors Falls connected with the St. Paul & Pacific near Westminster Street. Associated with several of the railroads which were key to St. Paul's development as the railroad hub of the Northwest, the Westminster Junction was a gateway to the Union Depot and provided crucial switching functions and grade-separated crossings for the railroads that converged in the Trout Brook Valley. The Westminster Junction represents a rare example of railroad tunnel building in Minnesota. The tunnels are a fine example of nineteenth-century stone arch construction, and the ashlar masonry illustrates a high degree of craftsmanship.



Union Depot. After operating separate depots for a number of years, the railroad companies joined together in 1879 to build the St. Paul Union Depot at Third and Sibley streets. The undertaking proved massive, with blocks of old warehouses and hotels demolished to make way for the new depot, concourse, and platform above the flood-prone Mississippi River. When rebuilt in 1917-1923, the second Union Depot was one of the last great railroad undertakings in St. Paul.

Drewry Lane Bridge No. L9218 (Underpass to Swede Hollow). This bridge is located at the intersection of Beaumont Street and Drewry Lane (named for Drewry's Brewery). These two streets come together at a right angle and do not actually intersect, but the bridge allows for a pedestrian under pass under the bridge to access Swede Hollow from Beaumont Street. The 1905 bridge is a 23 feet long, 40 feet wide, concrete

bridge, with a filled spandrel arch design, making it a very early example of reinforced concrete arch construction.

Johnson Parkway Bridge No. 90422. Located where Johnson Parkway passes under the Burlington Northern tracks at the southeast corner of Lake Phalen, the bridge was designed by M.S. Grytbek and constructed in 1932. It is a 68-foot long, 30-foot wide, three span bridge constructed principally of concrete and steel. The main span is of steel beam span construction and the approach spans are of concrete slab span construction.

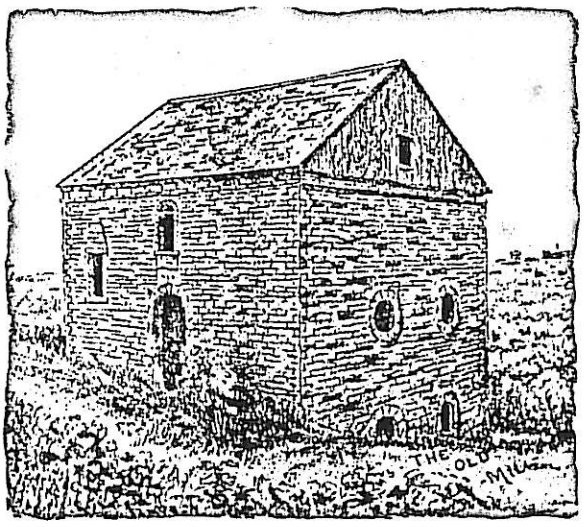
2.4 Theme – Early Industry

2.4.1 Overview

St. Paul's industrial history is connected in many ways to its transportation history: the well-developed railroad tracks, accessible water routes, and good roads enabled St. Paul's emerging industries to receive raw materials and export the final goods to markets throughout the state and the nation. St. Paul's first industries were focused on agriculture, such as milling and brewing. Over time, St. Paul's industrial base grew to include more high-technology enterprises, such auto assembly plants. The Grand Round trail connects several sites that illustrate the evolution of St. Paul's industrial base.

2.4.2 Discussion

One of the earliest industrial activities pursued in St. Paul was milling. By the mid-1850s, flour and grist mill construction in the Territory was increasing at a rapid rate, and by 1862, Minnesota had 85 flour mills. Flour and grist milling became the largest generator of manufacturing revenue in the state, with saw milling a close second. Though Ramsey County never became a major center for flour and grist milling, as did its sister city Minneapolis, records show that 14 grain mills operated in the county before 1900. In the St. Paul's East Side, several mills and breweries were operating on Phalen Creek by the early 1860s, including Brainard Mills (1856), the Drewry Brewery (1861), and the Excelsior Brewery (1863). In the downtown area, at least six mills were operating between Dayton's Bluff and the Upper Levee. On the West End, the Ayd Mill operated during the 1860s and 1870s, processing grains for local farmers in the area. The early flour and grist mills at first used water powered, stone grinding wheels to do custom grinding for individuals. As the city grew and mill technology developed, the mills purchased grain to grind and bag under their own labels and changed from stone grinding wheels to the roller processing method and from water to steam power. This change in technology allowed them to greatly increase their capacity.



Breweries were also an important early industry to St. Paul. The rise of the brewery industry during the last half of the nineteenth century illustrates the impact of German immigrants on the agricultural industry of the state. Germans dominated the brewing industry, holding 54 of the 57 brewers' licenses in the city during the late 1850s. Not only did Germans used their knowledge of traditional German beer making to start

breweries, many ran the saloons that sold the product or wholesale operations that supplied hops, malt, and other brewer's supplies to the numerous breweries in the city. Many of the original German breweries were absorbed by larger breweries or had to close down during the Prohibition years during the 1920s, resulting in the loss of many German beer making traditions.

It is difficult to overestimate the importance of railroads to the industrial development of St. Paul. While business and residential settlement patterns had previously been dictated by proximity to the only reliable transportation corridor — the Mississippi River — the railroads were constructed with little regard for river transportation. As a result, new industrial areas were able to develop in St. Paul, including the city's East Side.

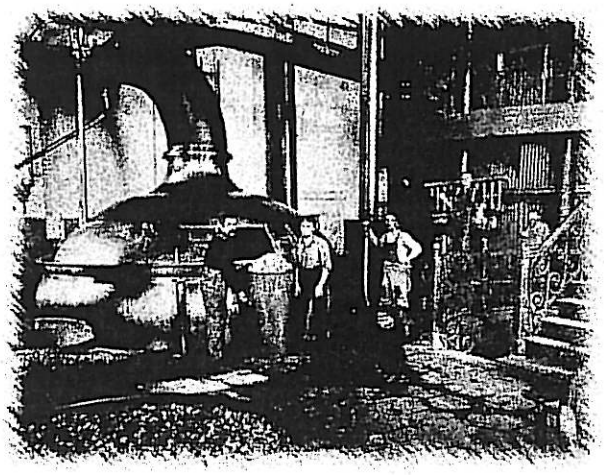
By the mid-1870s, manufacturing plants were springing up along the East Side railroad corridor. Companies such as St. Paul Harvester Works (1872) and the St. Paul Plow Works (1876) employed hundreds of men. In downtown, nearly 40 types of manufacturing occurred, employing over 3,000 workers. By the early twentieth century, the East Side's industrial area contained some 30 manufacturing plants, including 3M and Hamm's Brewery, and employed nearly 7,000 men. The rise of companies like Hamm's and 3M were indicators of national trends and signaled the decline of the East Side's railroad/industrial corridor. By the mid-twentieth century, smaller manufacturers had difficulty competing with larger, national firms, Minnesota's extractive industries were giving way to high-technology manufacturing, such as the Ford Motor Company assembly plant, and the railroads suffered from competition for freight with the trucking industry.

2.4.3 Interpretive Sites

Ayd Mill. Constructed in 1860s, as the number of flour mills was increasing in Minnesota, the Ayd Mill was the first and only grain mill to operate in Reserve Township (originally located west of Dale Avenue and south of Marshall Avenue and annexed incrementally by St. Paul). John Ayd operated the mill from 1860 to 1866, processing an average of 22 sacks of corn per day. Ayd's son Robert sold the mill to Charles and Maria Kramerath in 1866 and, in 1874, Kramerath took out a mortgage to improve the mill. He was unable to pay his debts and, following his death in 1878, Maria sold a portion of their land to the Short Line Railway. The construction of the line cut the water supply to the mill and the mill was allowed to fall into ruin.

Hamm's Brewery. The Hamm's Brewery was once a major employer of immigrants in St. Paul. Established by Theodore Hamm in 1864, the brewery expanded its plant from a single city lot to four acres of buildings over the next twenty years, and by 1886 produced over 40,000 barrels. The brewery continued to grow and prosper until Prohibition, which it survived by producing industrial alcohol and soft drinks. Throughout the 1950s and 1960s, Hamm's acquired new breweries across the nation and

became the seventh largest producer of beer in the United States until it was purchased by Olympia in 1974.

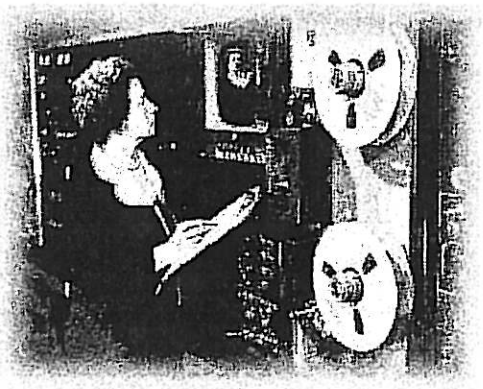


Schmidt Brewery. The former Schmidt Brewery, currently operated by the Minnesota Brewing Company, illustrates the agricultural processing industries that developed in St. Paul. Founded as the Stahlman Brewery in 1855, the plant was acquired by Jacob Schmidt in the 1890s, who rebuilt the plant to resemble a Bavarian castle with crenellated towers and arched windows. Other portions of the brewery are in the Art Moderne style and illustrate the post-Prohibition expansion of the brewery during the 1930s.

Grain Elevator/Farmer's Union Terminal. Constructed in the mid-1920s, the grain terminal was constructed by the City of St. Paul adjacent to the Farmer's Union Terminal on the Upper Landing. The grain terminal was a fully-equipped facility used in the transfer of grain products from train cars or on-site grain elevators to river barges.

Ford Plant. After building Model Ts in a warehouse in downtown Minneapolis from 1912 to 1915, the Ford Motor Company moved to a large ten-story building. By the mid 1920s, the company constructed a new plant in St. Paul at the Lock and Dam No. 1 to utilize the water power. The first Model T cars and Model TT trucks rolled of the new assembly line in 1925. The new plant's success continued until the Great Depression slowed production after 1930 and idled the plant for 2 years, from 1933-1935. Aside from a three-year stint during World War II producing armored cars and aircraft engine parts, the Ford Motor Company St. Paul assembly plant has been an important industrial and employment leader in the city.

3M Plant. Located at Bush and Forest avenues, the 3M plant is considered an important historic landmark as the site on which 3M rose to national and international importance as an early leader in industrial research and development as well as quality control. The plant was established in 1910 at the Bush and Forest corner, but expanded during the 1930s and 1940s to the south of Bush Avenue and the west of Mendota Street.



2.5 Theme – Residential Patterns

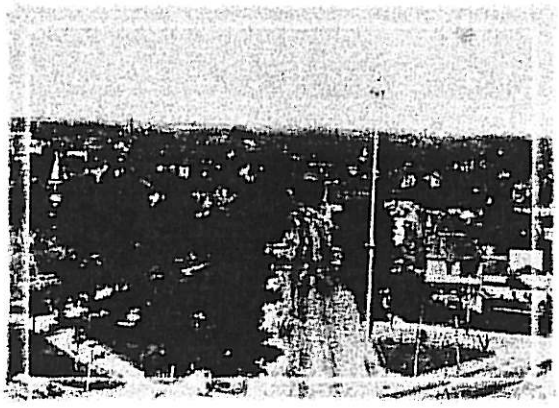
2.5.1 Overview

St. Paul's residential patterns were in many ways influenced by the economic and ethnic background of its settlers. Recent immigrants often felt the need to settle near their own kind or near the industrial jobs offered in downtown, creating distinctive residential communities. More wealthy residents of St. Paul often established their homes along the high bluffs lining the Mississippi River, away from the noise and congestion of the industrial downtown area. The Grand Round trail passes several unique residential areas that illustrate the patterns of settlement in St. Paul.

2.5.2 Discussion

Although Fort Snelling had been established in the early 1820s, settlement in the area around present-day St. Paul was not condoned by the U.S. government until after the signing of the Treaty of 1837. Taking advantage of the transportation afforded by the Mississippi River, early settlement concentrated in what is now the downtown area, because of the relatively level terraces that served as steamboat landings.

During the Territorial years, before it began to spread out into various residential areas, St. Paul was one large neighborhood. By about 1860, St. Paul proper covered an area of only about five square miles. Since mass transportation did not yet exist and horses were too expensive for most people to own, travel was mainly on foot. Therefore, most buildings were tightly clustered around downtown. The wealthy were able to build on the high ground of Summit Hill (west), Capitol Hill (north), Prospect Terrace (south), and Dayton's Bluff (east). St. Paul's naturally hilly topography increased the remoteness of the "outlying" neighborhoods. Even most of the rich were still living relatively close to downtown, mainly in Irvine Park and the Lafayette Park area of Lowertown. As railroads began to devour large chunks of downtown and Lowertown, wealthy citizens migrated to the outlying areas. Working class families needed to remain close to the railroad-based jobs, settling in the North End, Frogtown, the East Side, the West Side, and the West Seventh Street areas.



In general, St. Paul development patterns followed national norms. Before the Civil War, developers eyed the relatively flat lands west of Dale Street. The Panic of 1857, however, slowed early residential expansion. Large-scale development of the areas

surrounding the city center would await advances in inexpensive mass transportation in the 1880s.

The development of the Reserve Township area, located south of Marshall Avenue and west of Dale Avenue, was dictated by its proximity to the rapidly growing urban center of St. Paul. In the final decades of the nineteenth century, more and more farmers and early settlers began subdividing their properties for suburban residential development. The market for new homes was being driven both by newcomers and by long-time residents, who were at last able to leave less desirable areas in the city. By 1887, all of the former reserve area east of the Mississippi River had been annexed by the City of St. Paul, and residential development began in earnest, though some neighborhoods would not be completely developed until after World War II. More common than outside developers was the phenomenon of farmers developing their own land. Residential development began on the east side of the township, near Victoria and Summit avenues, and progressed westward to Lexington and then Snelling avenues, and finally spread southward. By 1891, the "suburbs" of Hamline, Macalester Park, Merriam Park, and St. Anthony Park had firmly established neighborhood identities within the city of St. Paul. The neighborhoods primarily dated to the last decades of the nineteenth century, as illustrated through the Queen Anne and Neo-Classical-style homes that line the streets.

Prior to the Civil War, there were two areas in St. Paul's East Side which were settled by two distinctive groups. The Williams Hill area, which is west of Payne Avenue and south of Minnehaha Avenue, was considered a scenic area and became the site of many fine houses. From the 1850s to the early 1880s, this area was the home to many of St. Paul's elite. As the railroads surrounded the neighborhood in the 1870s and expanded their holdings in the Trout Brook Valley in the 1880s, the area came to be known as Railroad Island and the demographics changed from upper middle class to working class.

The other portion of St. Paul's East Side, which was settled prior to the Civil War, was the Phalen Creek Valley. From the 1850s through the 1870s, impoverished Swedish immigrants began to settle in the old claim shanties in the valley, and the area came to be known as Swede Hollow. Moving out by the 1880s, the Swedes settled around Minnehaha and Payne Avenue and mainly Italian and Irish immigrants moved into the hollow. Fueled by the railroads and the industrial/manufacturing corridor that developed in the area, a building boom occurred during the 1880s. Railroad Island as well as the area east of Payne and south of the railroad corridor contained a mix of Germans, Irish, Anglos, native-barn Americans, and, to a lesser extent, Poles and Norwegians.

By the early twentieth century, much of St. Paul had been platted and subdivided, but many of the lots remained undeveloped. Those open residential were filled in during the 1910s and 1920s with nationally popular housing styles, such as Prairie, Craftsman, Tudor, and Colonial Revival. In additional, apartment complexes and new commercial strips sprang up, primarily along the streetcar lines and major cross streets.

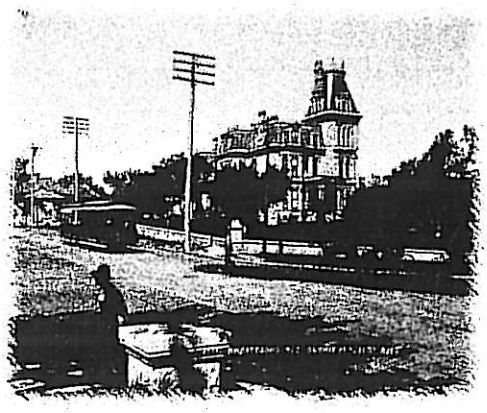
The Twin Cities became home to one of the nation's outstanding streetcar systems; by 1920, there were lines serving 80 square miles of neighborhoods in the urban areas and branches reaching out to Lake Minnetonka, White Bear Lake, and Stillwater. The placement of new residential neighborhoods, such as St. Anthony Park, was almost totally dependent on availability of mass transportation in the pre-automobile era. Access to the downtown area was essential for suburban residents, but the streetcar lines also encouraged development of offices and shops in the neighborhoods themselves. The streetcar era in St. Paul lasted until the 1950s, when buses supplanted them as a means of public transportation, and automobile ownership had become nearly universal.

2.5.3 Interpretive Sites

Irvine Park. Developed during the mid- to late-nineteenth century, the Irvine Park residential area is notable for its examples of early houses designed as a neighborhood for St. Paul's well-to-do in a range of Victorian architectural styles. In addition, the neighborhood was platted around a public square – a pattern evocative of the New England roots of many of the residents. During the early twentieth century many of the large houses were rented out as flats or boarding houses, giving Irvine Park area a working-class character, distinct from its nineteenth-century middle- and upper-class flavor.

St. Anthony Park. The St. Anthony Park residential area was platted in the 1880s as a suburb. Designed by prominent landscape architect H. W. S. Cleveland, this neighborhood illustrates the picturesque or naturalistic ideal in nineteenth century design. Intended as a break from the crowded hustle and bustle of downtown, St. Anthony Park has curvilinear streets, a small landscape park (Langford Park) and other green spaces. The community was connected to downtown via the Short Line Railroad and later by the streetcar system.

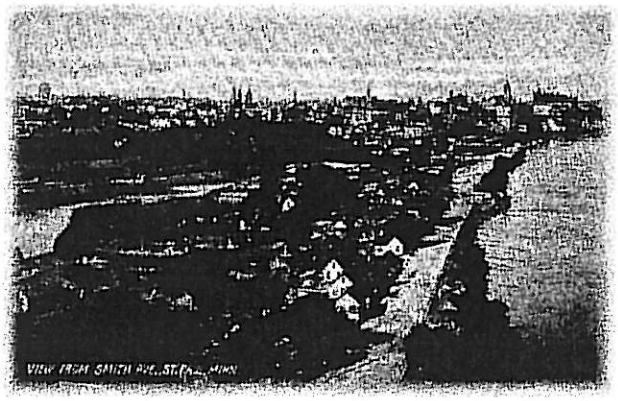
Historic Hill District. The geographic isolation of the Historic Hill neighborhood above the industrial- and business-oriented portions of St. Paul and the largely undeveloped, open spaces made the area a prime focus for residential development during the late nineteenth century. As transportation and access continued to improve during the late-nineteenth and early-twentieth centuries, more diversification in the ethnic, social, and economic status of the Historic Hill residents occurred.



Summit Avenue. One of the first major expansions off the Historic Hill area was West Summit Avenue. Developed mainly between 1885 and 1938, the West Summit Avenue

area is the largest unbroken avenue of Colonial Revival and Classical Revival-style architect-designed houses in the Twin Cities. The eastern end of Summit Avenue housed many wealthy and influential individuals, including F. Scott Fitzgerald, who wrote short stories and his first published novel, *This Side of Paradise,* at his parent's house at 559 Summit Avenue. Important not only for residential structures, the West Summit Avenue area also includes schools, colleges, and churches that served the residents of St. Paul.

Dayton's Bluff. Recognized early on for its picturesque setting and sweeping vistas of the Mississippi River valley, Dayton's Bluff attracted some of this city's earliest merchants, businessmen, and financiers. Many of the early settlers to the area were German-Americans, as well as old-stock Americans and Scotch-Irish. The area remained a relatively isolated, upper-class community until the 1880s, when bridges and viaducts connected the once remote bluff to the city. As the area became more middle-class, many of the original wealthy residents relocated to the Summit Avenue area, although many of the original German settlers remained in the Dayton's Bluff area.



Little Italy. In contrast to the lavish and permanent structures constructed in St. Paul's more affluent neighborhoods, Little Italy represented more of a working class, lower-income neighborhood. Occupied from the 1880s through the 1950s primarily by recent southern Italian immigrants, Little Italy was a dynamic and close-knit ethnic community.

East Side Workers' Housing. Fueled by the railroads and development of an industrial/manufacturing corridor, a building boom occurred on the East Side beginning in the 1880s. Further contributing to residential development was increased access to downtown via bridges over the Phalen Creek valley and various railroad tracks, and extension of streetcar service on East Seventh Street by the early 1890s. Block upon block of modest gable-roofed houses lined the industrial corridor to the north and south by the turn of the century, providing housing for the workers and their families.

2.6 Current St. Paul

2.6.1 Overview

It is recommended that this theme is essentially a compliment to the historical themes, and it should bring those themes up to date. For example, river transportation remains a vital industry, St. Paul is still a city of immigrants, and city parks are as popular as ever. The following is a synopsis of the current status of the historic trends discussed in the draft report.

2.6.2 St. Paul's Park System

Although the system was never completed exactly as Cleveland had planned, St. Paul's parks and parkways largely conform to the visions of Cleveland and other early park planners. Development of the Grand Round is a continuation of this legacy. Como Park is as popular as ever, and some of its well-known attractions, such as the Conservatory, have had extensive restoration work in recent years. A phenomenon that Cleveland surely would have embraced but could not have foreseen is the redevelopment and greening of the downtown riverfront, crowned by the renovation of Harriet Island Park.

2.6.3 Immigrant Communities

Older immigrant groups such as the Irish, Italians, and Jews assimilated during the twentieth century, and their old enclaves at Swede Hollow, Upper Levee, and West Side flats were razed during the 1950s. However, more recent immigrants continually add diversity to St. Paul's ethnic make up. While the immigrants are not as concentrated in ethnic enclaves as during the early twentieth century, there are areas in the city with distinctive ethnic affiliations. For example, many Hmong live in the Frogtown neighborhood, and an Asian market has developed along University Avenue roughly between Dale and Victoria avenues. On the city's West Side, there is a strong Hispanic community and a *mercado* has developed around Concord and Robert streets.

2.6.4 Paddlewheels and Steel Wheels

Just as the preferred mode of transportation shifted during the late nineteenth century from river boats to railroads, other shifts during the twentieth century have brought changes in transportation. The rise of cars and trucks led to a decline in railroading as well as to construction of I-94, I-35E, Shepard Road, Kellogg Boulevard,

and other thoroughfares. The once massive railyards in Lowertown are largely gone, and the Union Depot and rail-related warehouses have been converted to other uses. After years of contraction and consolidation, however, railroad companies rebounded during the 1980s and 1990s. Likewise, there has been resurgence in river transport. Initially spurred by creation of a nine-foot navigation channel in the Mississippi River by the U.S. Army Corps of Engineers during the 1930s and 1940s, the barging industry carries bulk items such as gravel, coal, and grain. In addition, due to efforts to improve water quality over the past 30 years, pleasure boating has rebounded on the Mississippi, as well.

2.6.5 Early Industry

Since World War II, St. Paul's industrial base has seen both change and consistency. Some older manufacturing operations have shut down, and the East Side Industrial Corridor in particular has suffered through plant closings and aging infrastructure. However, initiatives such as the Williams Hill redevelopment and the planned Phalen Boulevard are designed to revitalize the area. Brewing, a longtime staple of St. Paul manufacturing, has changed with the times. Although the former Hamm's Brewery has shut down, the old Schmidt Brewery is still in operation as the Landmark Brewery, and the expanded Summit Brewery taps into the microbrew market. The Ford Plant in Highland Park is still going strong, producing Ranger pickup trucks. While 3M has moved much of its operations to the Woodbury plant and other sites, the original facility on the East Side is still in use by the company. In addition newer, high-tech companies, such as Lawson Software, are taking up residence in the city, helping to create a diverse manufacturing base.

2.6.6 Residential Patterns

Like most American cities, St. Paul's population declined steadily during the 1950s through the 1980s as residents left for the suburbs and the housing stock aged. However, a new trend that began during the 1990s reversed the residential decline, and it continues to grow. New residents are settling in traditional neighborhoods alongside longtime residents. The older city neighborhoods are being revitalized through preservation and restoration of existing housing and by in-fill construction of new housing, while brownfields are being cleaned up and redeveloped for residential use with traditional urban designs.

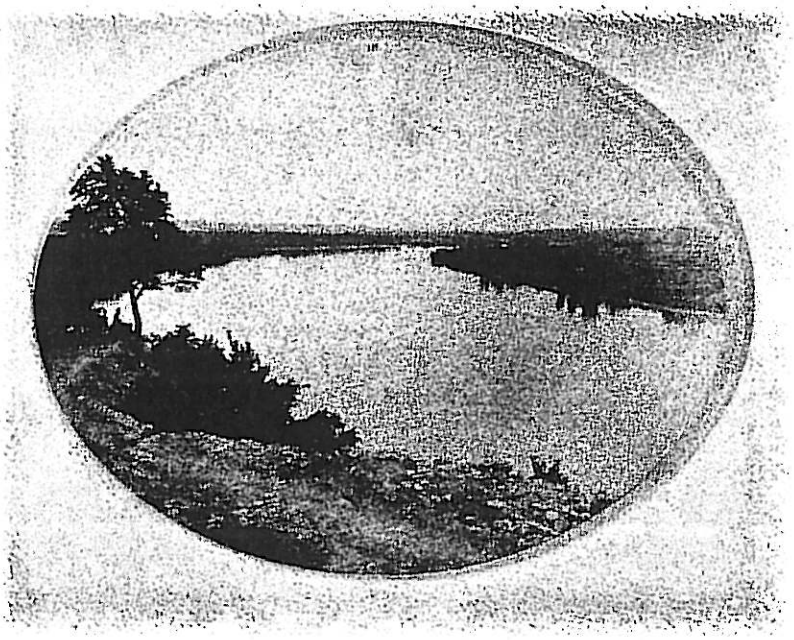
2.7 The Mississippi River and Natural Landscapes

2.7.1 Overview

The Mississippi River heavily influenced the natural history of St. Paul, from the geography of the river gorge and tributary valleys to the flora and fauna supported by the river. The river ecosystem, particularly the geography, in turn has strongly influenced historical trends in St. Paul. The siting of the city itself, the location of its parks and industrial operations, and the development of its residential patterns are all directly related to the river. Therefore, it is recommended that the Natural History theme to be developed by MNRRA should be the Mississippi River theme. The focus of interpretation should be the critical role that the river and its natural systems have played and continue to play in many aspects of the city's development.

2.7.2 Discussion

Much of the route of the Saint Paul Grand Round traverses areas with scenic vistas and primary natural landscapes along the Mississippi River and associated bluff areas. Many of these landscapes are associated with unique geologic occurrences and provide many opportunities for natural landscape interpretation along the Saint Paul Grand Round.



For the past 12,000 years, the Mississippi River has been the carving the scenic bluffs we see today. These bluffs are primarily soft, white sandstone (St. Peter Sandstone), which was at one time mined for glass production. This sandstone is capped by a hard, creamy limestone (Plateville Limestone). During the last period of glaciation, the Mississippi River was a relatively small tributary to Glacial

River Warren to the southwest (which is now the Minnesota River). As these rivers cut into the ancient rock, the differential hardness of the two stone resulted in the unique bluff features along the river. Glacial features such as Hidden Falls, Fountain Cave, Slot Canyon and Horseshoe Bend Terminal Moraine provide interpretive opportunities along the route of the Grand Round.

The Mississippi River is part of one of the most complex ecosystems in the world. It is a critical migration corridor for millions of birds and is home to a wide array of wildlife, fish and plants. The route of the Grand Round provides numerous opportunities for bird watching and interpretation of natural plant communities, including upland prairies and river valley forests.

The area of the Greening the Great River Project is also located along the route of the Saint Paul Grand Round. This five-year project is dedicated to restoring the original vegetation on both sides of the Mississippi River, from the High Bridge to Holman Field. By restoring native grasses, shrubs and trees along the riverfront, a natural wildlife corridor will be provided between Pig's Eye Lake, Lilydale-Harriet Island and Hidden Falls-Crosby Farm Regional Parks. This project will provide additional opportunities for interpretation of the natural landscape.

The upland areas along the route of the Grand Round also include numerous ravines, lakes, and tributary creeks of the Mississippi River. Interpretive opportunities along the Grand Round will provide the visitor will a better understanding of this unique ecosystem, as well as the physical features that have created the it.

3.0 EXISTING INTERPRETIVE MARKERS

3.1 Interpretation of American Indian Heritage Sites

There are a number of heritage sites related to the history of American Indian peoples along the Grand Round. However, it is important to note that no American Indian sites or significant places or histories should be interpreted without partnership and consultation with the appropriate tribes, of which there are eleven in Minnesota. The Dakota Nation has strong historical ties to this area, and there are opportunities for partnership with the Dakota communities. A list is provided below of whom to contact for potential partnering related to interpretation of American Indian sites or cultures on the Grand Round.

- Shakopee Mdewakanton Dakota Community is located south of the Twin Cities at 2330 Sioux Trail, NW, Prior Lake, MN 55372.
- Prairie Island Mdewakanton Dakota Community is located near Red Wing at 1158 Island Boulevard, Welch, MN 55089.
- Lower Sioux Community is located near Redwood Falls at RR 1, Box 308, Morton, MN 56270.
- Upper Sioux Community lands are in the western part of the site at P.O. Box 147, Granite Falls, MN 56241.

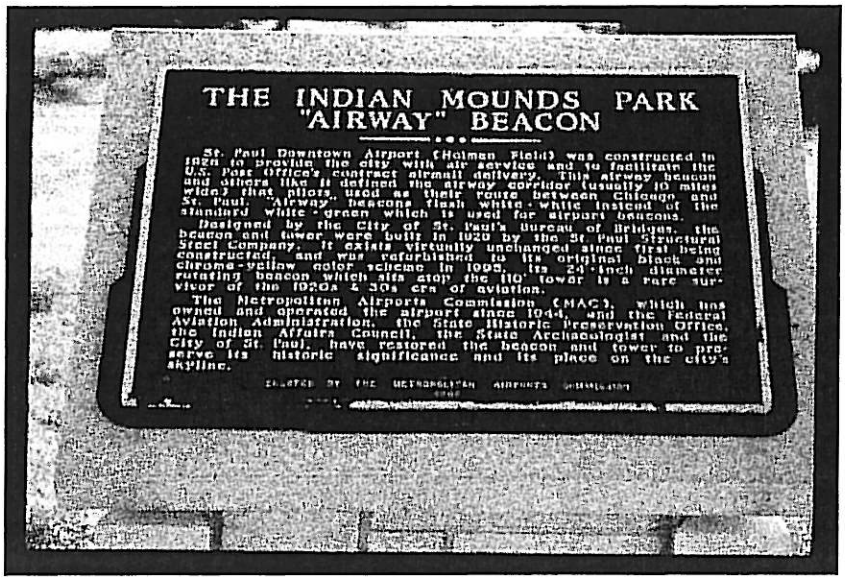
For further information, contact the Minnesota Indian Affairs Council or individual Tribal Councils or visit the Indian Affairs Council website at http://www.indians.state.mn.us/.

3.2 Existing Markers

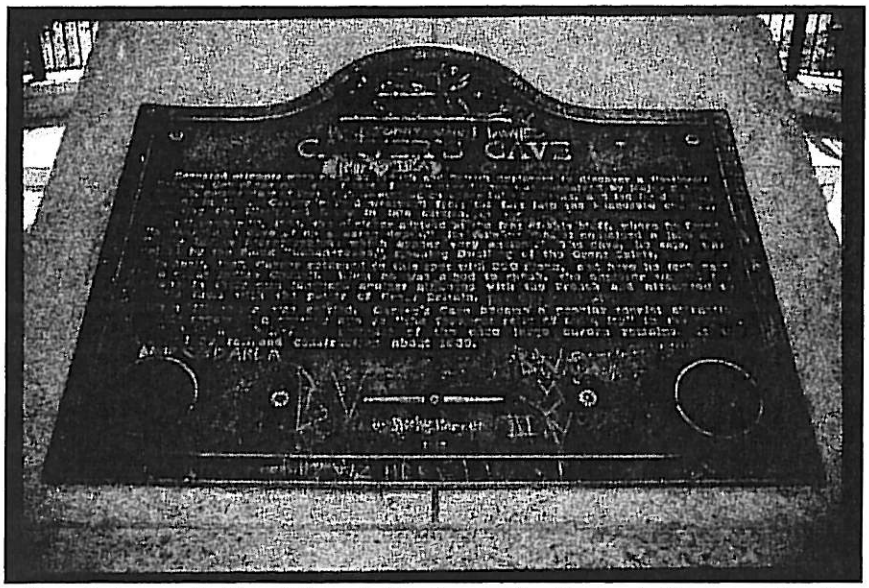
Six existing historical markers are located along the Grand Round Trail. These markers commemorate various aspects of St. Paul's history, including:

- St. Paul's Holman Field airport
- a steamboat landing (Lower Landing or Lambert's Landing)
- a hydro-electric turbine (Lock and Dam No. 1)
- an early settlement site in St. Paul (Fountain's Cave)
- an American Indian sacred cavern site (Carver's Cave)
- an American Indian burial mound group (Mounds Park).

Pictures of these markers are presented below with a brief caption describing their location and the theme to which they relate.



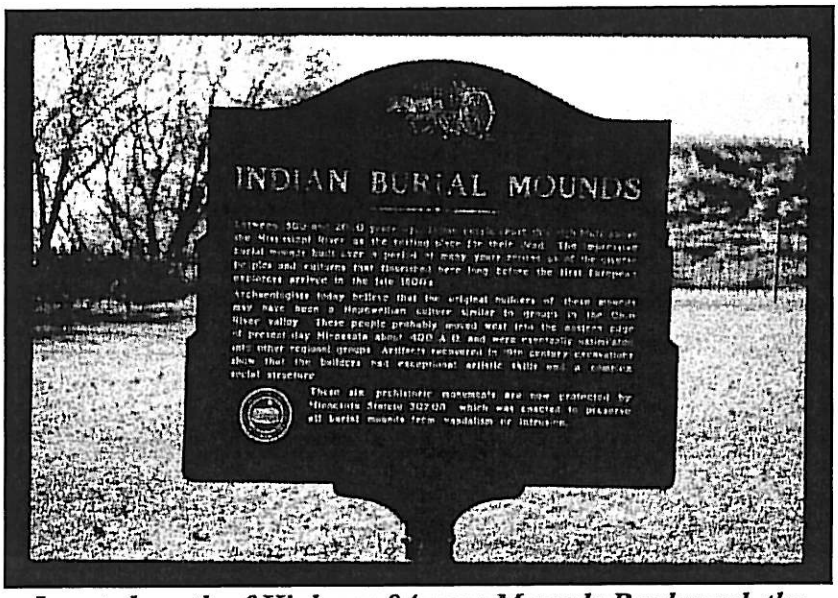
The Indian Mounds Park "Airway" Beacon marker is located by Indian Mounds Parkway just north of Highway 94 and relates to the transportation theme.



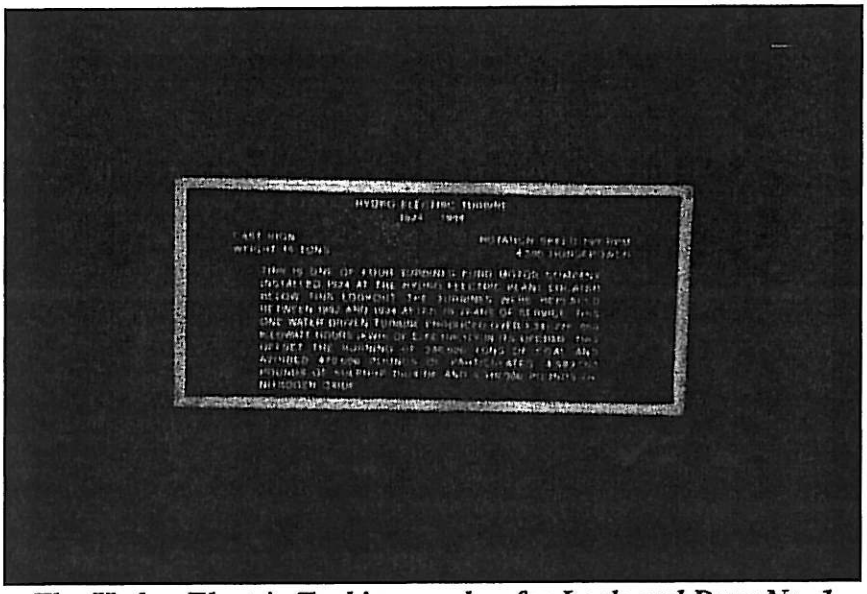
Located near Indian Mounds Parkway, the Carver's Cave marker is not related to any of the existing themes currently developed for the Grand Round project.

The Fountain Cave marker, located along Shepard Road above the Mississippi River bluff, commemorates early Euro-American settlement in the area and can be used to interpret the immigration theme.

The site of the Lower Landing is commemorated at the Lambert's Landing marker, located in downtown St. Paul in the Lower Landing area, which can be interpreted through the transportation theme.



Located north of Highway 94 near Mounds Boulevard, the Indian Burial Mounds marker is not related to any of the existing themes developed for the Grand Round project.



The Hydro-Electric Turbine marker for Lock and Dam No. 1 is located on the Mississippi River near Mississippi River Boulevard and is discussed under the transportation theme of this report.

4.0 RECOMMENDATIONS

4.1 Development of Interpretive Ideas

The information presented in this report serves as a historical baseline for future development of the interpretive potential of the Grand Round. To provide engaging and meaningful interpretation of the sites and stories along the corridor, a number of key steps should be taken at the next stage to ensure appropriate and effective development and implementation of the recommended themes. Each potential interpretive site should be studied and analyzed in relation to the following:

- Developing more "popular" text and graphics
- Other media potential
- Location of interpretive media
- Relationship of media to the site
- Who needs to be consulted regarding development of each site
- Preservation potential and needs of each site
- Relate history of parks and parkways to design elements in the current landscape, e.g. topography, landscaping, etc.

4.2 Plaques and Markers

One of the obvious media for interpretation of historical places is historic plaques and markers. A proposed concept for an interpretive marker or plaque is included in this first stage of the Grand Round study.

Many historic photographs archived at the Minnesota Historical Society or Ramsey County Historical Society could be used. However, people in the community have their own photos of family and friends that could be included in appropriate markers to make them more personal to a community.

In addition, these plaques and markers should include not only words and historic photographs, but also quotations from the community. The elders of a community often hold information known only by them. Recording interviews with longtime residents could be used for storytelling or put into written form for educational purposes. Excerpts from the oral histories could also be incorporated into artwork, plaques and markers. Interviewing the community's elders is also a way to bridge the gap between generations.

4.3 Public Art

Recommendations for interpreting the proposed themes begin with the notion that art is an expression of life. Every individual, group, community and culture has history, ideas, beliefs, and stories that can be illustrated though art. The recommendations presented here suggest ways in which the persons, events, buildings, and landscapes significant in each community's past can be interpreted to accurately and artistically depict the uniqueness and importance of the area to the larger St. Paul community. The outcome of the interpretation should be to give the communities through which the Grand Round passes a means by which to communicate to others what their neighborhood means to them. This communication can be accomplished by presenting the history and stories of a community in it own words and in images through a variety of media. It is essentially interpretation *of* the neighborhood *by* the neighborhood.

This can provide a means for public interpretation of the past and present. For example, murals painted by local artists with assistance from neighborhood children or sculptural pieces with inscriptions could be produced and placed throughout the neighborhood. Poems, quotations, and inscriptions could be added to ordinary objects such as lampposts, sidewalks, bus stops, benches, boulders, walls and other such objects.

4.4 Conclusions

Developing a shared sense of the past can be accomplished through a variety of media, as outlined above. Most important, however, is maintaining the sense of place – the actual locations where events took place speak louder than any media can. These types of interpretive efforts could help to bring the Grand Round "alive" and provide another reason to use and explore the historically significant trail.

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APPENDIX C

MISSISSIPPI RIVER BOULEVARD- 4.88 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	100	$20,000.00
Striping	lin ft	$0.50	25000	$12,500.00
Kiosks	each	$18,000.00	2	$36,000.00
Cultural markers	each	$1,250.00	3	$3,800.00
Lighting[2]	each	$3,000.00	5	$15,000.00
Benches	each	$1,500.00	2	$3,000.00
Trash receptacles	each	$1,000.00	2	$2,000.00
Bicycle racks[3]	each	$500.00	15	$7,500.00
Landscape plantings[4]	lump sum	$25,000.00	1	$25,000.00
Street widening (5 feet to accommodate bike lane)	lin ft	$25.00	10000	$250,000.00
Fencing	lin ft	$30.00	3000	$90,000.00
Drinking fountains	each	$5,000.00	1	$5,000.00
SUBTOTAL: CONSTRUCTION				**$469,800.00**
20% design and administration fee				$93,960.00
15% contingency				$70,470.00
TOTAL: IMPLEMENTED BASE DESIGN				**$634,230.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile

SHEPARD ROAD- 6.08 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	120	$24,000.00
Striping	lin ft	$0.50	31500	$15,800.00
Kiosks	each	$18,000.00	2	$36,000.00
Cultural markers	each	$1,250.00	3	$3,800.00
Lighting[2]	each	$3,000.00	30	$90,000.00
Benches	each	$1,500.00	6	$9,000.00
Trash receptacles	each	$1,000.00	6	$6,000.00
Bicycle racks[3]	each	$500.00	18	$9,000.00
Landscape plantings[4]	lump sum	$30,000.00	1	$30,000.00
Trail reconstruction	lin ft	$10.00	10000	$100,000.00
Fencing	lin ft	$30.00	2000	$60,000.00
Drinking fountains	each	$5,000.00	2	$10,000.00
SUBTOTAL: CONSTRUCTION				**$393,600.00**
20% design and administration fee				$78,720.00
15% contingency				$59,040.00
TOTAL: IMPLEMENTED BASE DESIGN				**$531,360.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile

WARNER ROAD- 2.56 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	50	$10,000.00
Striping	lin ft	$0.50	13500	$6,800.00
Kiosks	each	$18,000.00	1	$18,000.00
Cultural markers	each	$1,250.00	2	$2,500.00
Lighting[2]	each	$3,000.00	12	$36,000.00
Benches	each	$1,500.00	3	$4,500.00
Trash receptacles	each	$1,000.00	3	$3,000.00
Bicycle racks[3]	each	$500.00	10	$5,000.00
Landscape plantings[4]	lump sum	$12,500.00	1	$12,500.00
Street widening	lin ft	$0.00	0	$0.00
Fencing	lin ft	$30.00	5000	$150,000.00
Drinking fountains	each	$5,000.00	0	$0.00
SUBTOTAL: CONSTRUCTION				**$248,300.00**
20% design and administration fee				$49,660.00
15% contingency				$37,245.00
TOTAL: IMPLEMENTED BASE DESIGN				**$335,205.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile

JOHNSON PARKWAY- 2.16 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	40	$8,000.00
Striping	lin ft	$0.50	11400	$5,700.00
Kiosks	each	$18,000.00	0	$0.00
Cultural markers	each	$1,250.00	1	$1,300.00
Lighting[2]	each	$3,000.00	20	$60,000.00
Benches	each	$1,500.00	2	$3,000.00
Trash receptacles	each	$1,000.00	2	$2,000.00
Bicycle racks[3]	each	$500.00	6	$3,000.00
Landscape plantings[4]	lump sum	$12,500.00	1	$12,500.00
Street widening	lin ft	$0.00	0	$0.00
Fencing	lin ft	$30.00	0	$0.00
Drinking fountains	each	$5,000.00	0	$0.00
SUBTOTAL: CONSTRUCTION				**$95,500.00**
20% design and administration fee				$19,100.00
15% contingency				$14,325.00
TOTAL: IMPLEMENTED BASE DESIGN				**$128,925.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile

MOUNDS BOULEVARD- 1.28 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	25	$5,000.00
Striping	lin ft	$0.50	6500	$3,300.00
Kiosks	each	$18,000.00	1	$18,000.00
Cultural markers	each	$1,250.00	1	$1,300.00
Lighting[2]	each	$3,000.00	5	$15,000.00
Benches	each	$1,500.00	0	$0.00
Trash receptacles	each	$1,000.00	0	$0.00
Bicycle racks[3]	each	$500.00		$0.00
Landscape plantings[4]	lump sum	$7,500.00	1	$7,500.00
Street widening	lin ft	$0.00	0	$0.00
Fencing	lin ft	$30.00	0	$0.00
Drinking fountains	each	$5,000.00	0	$0.00
SUBTOTAL: CONSTRUCTION				**$50,100.00**
20% design and administration fee				$10,020.00
15% contingency				$7,515.00
TOTAL: IMPLEMENTED BASE DESIGN				**$67,635.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile

WHEELOCK PARKWAY- 5.36 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	110	$22,000.00
Striping	lin ft	$0.50	28000	$14,000.00
Kiosks	each	$18,000.00	1	$18,000.00
Cultural markers	each	$1,250.00	1	$1,300.00
Lighting[2]	each	$3,000.00	20	$60,000.00
Benches	each	$1,500.00	0	$0.00
Trash receptacles	each	$1,000.00	0	$0.00
Bicycle racks[3]	each	$500.00	15	$7,500.00
Landscape plantings[4]	lump sum	$27,500.00	1	$27,500.00
Street widening	lin ft	$0.00	0	$0.00
Fencing	lin ft	$30.00	0	$0.00
Drinking fountains	each	$5,000.00	0	$0.00
SUBTOTAL: CONSTRUCTION				**$150,300.00**
20% design and administration fee				$30,060.00
15% contingency				$22,545.00
TOTAL: IMPLEMENTED BASE DESIGN				**$202,905.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile

COMO PARK- 2.06 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	40	$8,000.00
Striping	lin ft	$0.50	10800	$5,400.00
Kiosks	each	$18,000.00	1	$18,000.00
Cultural markers	each	$1,250.00	1	$1,300.00
Lighting[2]	each	$3,000.00	10	$30,000.00
Benches	each	$1,500.00	0	$0.00
Trash receptacles	each	$1,000.00	0	$0.00
Bicycle racks[3]	each	$500.00	6	$3,000.00
Landscape plantings[4]	lump sum	$10,000.00	1	$10,000.00
Street widening	lin ft	$0.00	0	$0.00
Fencing	lin ft	$30.00	0	$0.00
Drinking fountains	each	$5,000.00	0	$0.00
SUBTOTAL: CONSTRUCTION				**$75,700.00**
20% design and administration fee				$15,140.00
15% contingency				$11,355.00
TOTAL: IMPLEMENTED BASE DESIGN				**$102,195.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile

COMO AVENUE- 1.60 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	30	$6,000.00
Striping	lin ft	$0.50	8500	$4,300.00
Kiosks	each	$18,000.00	0	$0.00
Cultural markers	each	$1,250.00	1	$1,300.00
Lighting[2]	each	$3,000.00	10	$30,000.00
Benches	each	$1,500.00	2	$3,000.00
Trash receptacles	each	$1,000.00	2	$2,000.00
Bicycle racks[3]	each	$500.00	5	$2,500.00
Landscape plantings[4]	lump sum	$7,500.00	1	$7,500.00
Street widening	lin ft	$0.00	0	$0.00
Fencing	lin ft	$30.00	0	$0.00
Drinking fountains	each	$5,000.00	0	$0.00
SUBTOTAL: CONSTRUCTION				**$56,600.00**
20% design and administration fee				$11,320.00
15% contingency				$8,490.00
TOTAL: IMPLEMENTED BASE DESIGN				**$76,410.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile

MIDWAY PARKWAY- 1.27 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	30	$6,000.00
Striping	lin ft	$0.50	6800	$3,400.00
Kiosks	each	$18,000.00	1	$18,000.00
Cultural markers	each	$1,250.00	1	$1,300.00
Lighting[2]	each	$3,000.00	0	$0.00
Benches	each	$1,500.00	0	$0.00
Trash receptacles	each	$1,000.00	0	$0.00
Bicycle racks[3]	each	$500.00	5	$2,500.00
Landscape plantings[4]	lump sum	$7,500.00	1	$7,500.00
Street widening	lin ft	$0.00	0	$0.00
Fencing	lin ft	$30.00	0	$0.00
Drinking fountains	each	$5,000.00	0	$0.00
SUBTOTAL: CONSTRUCTION				**$38,700.00**
20% design and administration fee				$7,740.00
15% contingency				$5,805.00
TOTAL: IMPLEMENTED BASE DESIGN				**$52,245.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile

RAYMOND AVENUE- 1.28 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	30	$6,000.00
Striping	lin ft	$0.50	6800	$3,400.00
Kiosks	each	$18,000.00	1	$18,000.00
Cultural markers	each	$1,250.00	1	$1,300.00
Lighting[2]	each	$3,000.00	15	$45,000.00
Benches	each	$1,500.00	2	$3,000.00
Trash receptacles	each	$1,000.00	2	$2,000.00
Bicycle racks[3]	each	$500.00	5	$2,500.00
Landscape plantings[4]	lump sum	$7,500.00	1	$7,500.00
Street widening	lin ft	$0.00	0	$0.00
Fencing	lin ft	$30.00	0	$0.00
Drinking fountains	each	$5,000.00	0	$0.00
SUBTOTAL: CONSTRUCTION				**$88,700.00**
20% design and administration fee				$17,740.00
15% contingency				$13,305.00
TOTAL: IMPLEMENTED BASE DESIGN				**$119,745.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile

PELHAM BOULEVARD- 1.24 MI

ELEMENT		Unit Price	Quantity	Cost
Signing[1]	each	$200.00	30	$6,000.00
Striping	lin ft	$0.50	6500	$3,300.00
Kiosks	each	$18,000.00	0	$0.00
Cultural markers	each	$1,250.00	1	$1,300.00
Lighting[2]	each	$3,000.00	10	$30,000.00
Benches	each	$1,500.00	2	$3,000.00
Trash receptacles	each	$1,000.00	1	$1,000.00
Bicycle racks[3]	each	$500.00	2	$1,000.00
Landscape plantings[4]	lump sum	$7,500.00	1	$7,500.00
Street widening	lin ft	$0.00	0	$0.00
Ornamental Fencing	lin ft	$30.00	0	$0.00
Drinking fountains	each	$5,000.00	1	$5,000.00
SUBTOTAL: CONSTRUCTION				**$58,100.00**
20% design and administration fee				$11,620.00
15% contingency				$8,715.00
TOTAL: IMPLEMENTED BASE DESIGN				**$78,435.00**

NOTES
All prices include installation
[1] 20 signs per mile
[2] Assumes 5 lights per mile. Approx. 1000' spacing
[3] Assumes 3 per mile
[4] $5,000 per mile