SAINT PAUL

A Small Area Plan

TROUT BROOK GREENWAY PLAN

A summary of this plan was adopted by the Saint Paul City Council as an addendum to the Saint Paul Comprehensive Plan on October 24, 2001

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Acknowledgments

The contributions and support of the following officials and organizations were instrumental in the creation of this plan, and are gratefully acknowledged:

Trout Brook – Lower Phalen Greenway Task Force

Michael Margulies, Chair, St. Paul Planning Commission
Kris Baeumler, Friends of Swede Hollow
Jill Danner, St. Paul Parks and Recreation
Marilyn Deneen, Capitol Region Watershed District
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Area Plan Summary

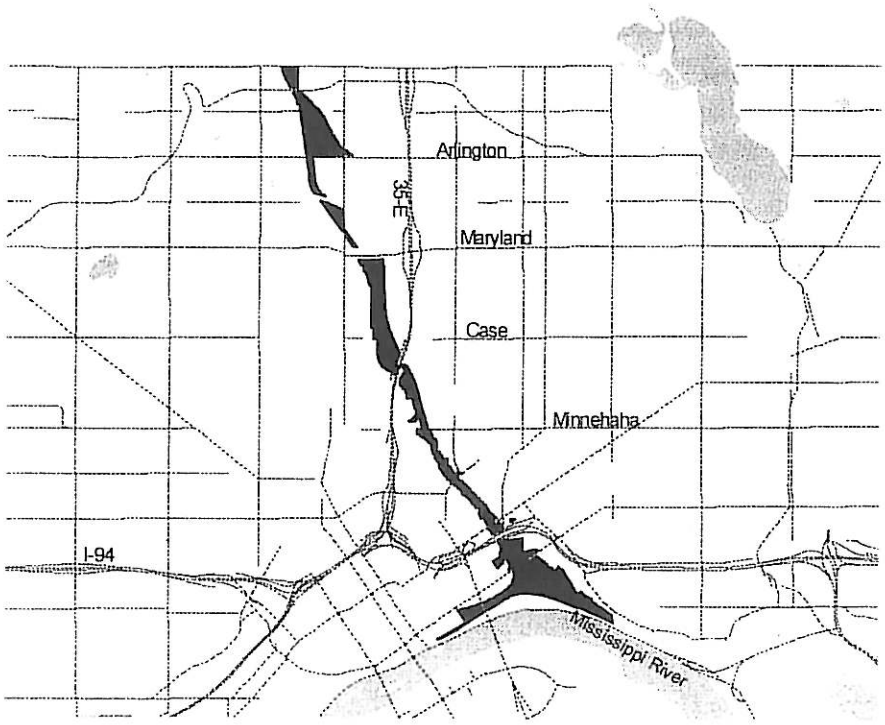
Trout Brook - Lower Phalen Greenway

Addendum to The Comprehensive Plan for Saint Paul

Recommended by the Parks & Recreation Commission - July 11, 2001
Recommended by the Planning Commission - October 5, 2001
Adopted by the City Council - October 24, 2001

*This summary appends to the Comprehensive Plan the vision and strategies of the **Trout Brook Greenway Plan** and the **Community Vision for Lower Phalen Creek**. Copies of the full-length plans are available for review at the Saint Paul Department of Planning and Economic Development and the office of the Dayton's Bluff District 4 Community Council.*

Location



Goal/Vision

Reclaim former railyards in the Trout Brook corridor (Trillium Site) and the Lower Phalen Creek area and restore habitat and ecological health of the corridor and floodplain. Restore a portion of Trout Brook and wetlands in the greenway corridor and the Lower Phalen Creek site. Create trail and natural community connections from McCarrons Lake to the Mississippi River. Provide a

natural amenity to adjacent neighborhoods and Lowertown.

Specific Recommendations and Implementation Steps

Trails

1) Northern segment: McCarrons Lake to Trillium Site. The Trout Brook County Trail connects McCarrons Lake to the Arlington-Jackson Pond. From the pond, the proposed trail follows the west side of the pond and crosses the Northern Pacific RR tracks at Arlington Avenue (an existing, at-grade connection). From here, a ramp will be needed to connect the trail with the CP Rail bridge over Arlington Avenue. The proposed trail continues on the CP Rail right-of-way which runs on higher land south of Arlington and provides clear views of the original path of Trout Brook, the existing landscape, and ridge areas to the east and west that form the watershed. The CP Rail right-of-way provides a direct link without interruption to the Trillium Site. The track has been abandoned through the Trillium Site.

2) Trillium segment: Trails on the Trillium Site. A loop trail is envisioned, consisting of an upper trail on higher land along the western side of the site and a lower trail on the eastern side of the site. The upper trail will link the Trout Brook Trail at the north with the Gateway Trail to the south. Both trails can be fully accessible. The lower trail will follow the route of the restored creek. Access to the site from the adjacent neighborhood is proposed at Rose Street.

3) Middle segment: Trillium Site to Lower Phalen Creek Site, with connections to Fourth Street and Lowertown. The trail south of the Trillium Site would follow the Gateway Trail extension straight south along the 35-E access road, to Pennsylvania Avenue. From this juncture, the trail connects with the Capitol Area to the west, or joins the trail planned for the north side of Phalen Blvd. to the east. From the trail along Phalen Blvd. a ramp would allow trail users to descend from the bridge over the railroad tracks (near Williams Hill) to ground level. From here, the Trout Brook Trail would follow the wide open area that parallels the railroad corridor traveling to the south and east. The trail would then pass over Fourth Street on an abandoned railroad bridge (one of four railroad bridges crossing Fourth Street) and loop down onto Fourth Street. From Fourth Street, trail users could reach Lowertown to the west, or link to the trails on the Lower Phalen Creek Site to the east.

4) Southern segment: Lower Phalen Creek Site to Mississippi River, with connection to Swede Hollow Park and the Bruce Vento Regional Trail. From Fourth Street, the proposed trail will connect to Swede Hollow Park and the Bruce Vento Regional Trail, as well as to the Mississippi River via the Lower Phalen Creek site if possible. To reach Swede Hollow Park, the trail will loop over Fourth Street on an abandoned railroad bridge (not the same bridge used by the Trout Brook Trail) and pass under the I-94 bridges on land owned by Ramsey County Rail Authority, connecting to Swede Hollow Park and the parking lot on 7th Street. To reach the Mississippi River, the trail will pass under Kellogg Bridge and run along an existing gravel road toward Warner Road. To cross Warner Road and railroad tracks, a bridge is proposed. The bridge would descend on the river side of Warner Road onto the road embankment and would intersect with the Lower Landing Park trail at the circular observation deck.

Water Resources

5) Restore a portion of Trout Brook and wetlands on the Trillium site. Water from the Arlington-Jackson pond will be piped to the north end of the Trillium Site, via a new 15" pipe that follows the existing storm sewer easement. The water will "daylight" in a small wetland, then flow as the restored Trout Brook through a series of small pools and riffles to the Sims-Agate Pond at the south end of the site. Surface water from the neighborhood to the west of the Trillium site will outlet into a series of wetlands at the south end of the Trillium Site, then flow into Sims-Agate pond which outlets into the storm sewer system.

6) Restore springs emerging from the base of the Mounds Park bluffs into a riparian wetland habitat. This recommendation is contingent on the results of a Restoration and Remediation Plan addressing contamination of the Lower Phalen Creek site.

7) Channel a remnant of Trout Brook at Fourth Street. Build a channel to collect water seeping from the railroad bridges on the north side of Fourth street. From the channel a trench or pipe can carry the water under the roadway and allow it to cascade into the canal on the south side of Fourth Street.

Habitat and Natural Communities

8) Planting throughout the corridor should emphasize species that provide food, cover, nesting habitat, and other needs for birds, migratory birds especially, and other species that use the corridor. Restoration is proposed to include prairie, woodland, and wetland plant communities. Restoration of natural communities should represent native vegetation, consider the long-term ownership and maintenance available, provide for a variety of educational opportunities, complement the activities proposed for the site, and be compatible with the soil and moisture conditions on the site.

Learning Opportunities

9) Environmental learning opportunities on the Trillium Site. Learning opportunities on this site include wetland and creek ecology, water quality, and water flow; plant community restoration and progress; bird watching along the upper trail; interpretation of the geologic history of the watershed; and interpretation of the human history of the area.

10) Environmental and historical learning opportunities on the Lower Phalen Creek Site. Learning opportunities on this site include interpretation of bird migration, bluff geology, cave formation (Carver's Cave, Montana Bill's Cave), natural springs, watershed function, drainage to the river, the history of the Mississippi River floodplain, history of Phalen Creek, stone-lined canal on Fourth Street, and railroad bridges, including the historic East Seventh Street stone arch bridge.

City Action

To encourage implementation of this vision, the City of Saint Paul should endeavor to include in its budget and program priorities the following activities. More detail about each proposed action

is included in the *Trout Brook Greenway Plan* or the *Community Vision for Lower Phalen Creek* and should be reviewed by the appropriate City staff.

1) Acquisition of Land and Easements identified in the *Trout Brook Greenway Plan* and *Community Vision for Lower Phalen Creek.*

2) Complete a current topographic survey (1 or 2 foot contours) of the entire corridor.

3) Complete Phase II soils and contaminants analysis at Trillium Site for proposed land use.

4) Complete engineering analysis for restoration of water features and development of trail components.

5) Discussions with Railroad companies regarding trail options south of the Trillium Site, and restoration of plant communities in railroad right-of-way.

6) Coordinate development of plans with agencies and abutting landowners, and obtain necessary permits.

7) Together with Lower Phalen Creek Project Steering Committee

   a) prepare Master Plan amendment to the Bruce Vento Regional Trail Plan for City and Metropolitan Council approval,

   b) determine costs of Restoration & Remediation Plan and Natural Resource Management Plan for Lower Phalen Creek site, and

   c) prepare Restoration Plan.

8) Seek funding for completion of infrastructure and amenity investments needed to implement the *Trout Brook Greenway Plan* and *Community Vision for Lower Phalen Creek.*

Parks & Recreation Commission Findings

The Parks & Recreation Commission concurs generally with the vision and recommendations of the *Trout Brook Greenway Plan* and *Community Vision for Lower Phalen Creek* and endorses this Area Plan Summary as the guide for future park improvement work in the Trout Brook - Lower Phalen Greenway.

Planning Commission Findings

The Planning Commission finds the Area Plan Summary for the Trout Brook - Lower Phalen Greenway consistent with the Saint Paul Comprehensive Plan and recommends the adoption of the Area Plan Summary as an addendum to the Comprehensive Plan. The Planning Commission further finds that a connection from the Trout Brook - Lower Phalen Greenway to the Mississippi River is important and should be pursued. Future design stages for implementing the greenway should also consider restoring an additional segment of open channel in the Greenway corridor between the new Phalen Blvd. and Fourth Street.

Planning Process

The *Community Vision for Lower Phalen Creek* is the result of a community planning process initiated by the Friends of Swede Hollow, that grew out of efforts to improve Swede Hollow Park and the Lower Phalen Creek corridor. Between 1996 and 2001 more than 20 organizations participated in creating the *Community Vision for Lower Phalen Creek*, with funding from McKnight Foundation and Lowertown Redevelopment Corporation.

The *Trout Brook Greenway Plan* was prepared with the assistance of a planning grant from DNR Metro Greenways. A Task Force was convened by the St. Paul Planning Commission to assist in

the preparation of the Plan between November, 2000 and May, 2001. A Technical Advisory Committee also advised the preparation of the Plan.

A 40 Acre Study for the entire Greenway was initiated by the Planning Commission in September, 2000. The 40 Acre Study must be completed by September, 2003.

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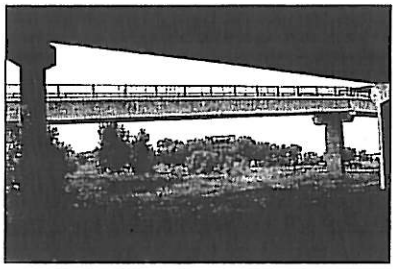
Executive Summary

Arlington Jackson Pond

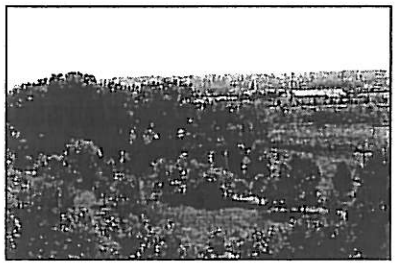
The Trout Brook-Lower Phalen Greenway begins at McCarrons Lake, near St. Paul's northern boundary, and generally follows the historic path of Trout Brook to the Mississippi River. The Greenway Corridor is approximately 5 miles in length, and includes approximately 182 acres. Within St. Paul, the Greenway connects three major open space sites using railroad right-of-way— the Arlington Jackson Pond, the Trillium Site, and the Lower Phalen Creek Valley area, just east of downtown St. Paul.

The Corridor Plan includes several elements:



Trillium Site

- It identifies potential trail and native plant community connections through the Trout Brook-Lower Phalen Corridor
- It includes a concept plan for the Trillium site, including options for restoring portions of Trout Brook
- It includes options for connections under the proposed I-35E/Cayuga interchange
- It includes trail connections to the Lower Phalen Creek Valley area
- It includes recommendations for management of land and water resources and restoration of native plant communities within the corridor, the Trillium site, and railroad rights-of-way
- It recommends implementation measures, such as public acquisition and easements, infrastructure investments, and other infrastructure needs for plan implementation.



Lower Phalen Creek Area – BNSF-Dayton's Bluff Yard Site

The plan identifies opportunities to recreate significant habitat and movement connections within a highly fragmented urban landscape. One of the most significant is the opportunity to restore a portion of Trout Brook and wetlands within the corridor. Such opportunities are rare within older cities like St. Paul. The restoration of the brook and wetlands will serve as a centerpiece to the environmental education opportunities proposed for the Corridor.

Second, the plan identifies opportunities to create trail and natural community connections from McCarrons Lake and areas to the north and west to the Mississippi River. The Trout Brook Corridor Trail will have regional significance, creating connections from downtown St. Paul to suburban communities to the north and west. This trail will compliment and link with the Gateway and Bruce Vento Regional Trails to the east. The Trillium Site will provide the linkage between these two major routes, and the proposed trails in the Lower Phalen Creek area will complete the connection to the Mississippi River.

Third, the plan identifies habitat linkages that may be restored throughout the corridor. It suggests the restoration of native prairie, woodland, and wetland communities that will provide food, cover and other habitat needs for migrating birds and other species that use the corridor, traveling to and from the Mississippi River.

The implementation of this plan will require significant resources, time, and the cooperation of many organizations. The surrounding neighborhoods, many City departments, local businesses, Minnesota DNR and DOT, and others have already made significant contributions to the creation of this Master Plan. Its realization will bring new opportunities, learning, and joy to residents of the City and the Region for many generations.

I. Trout Brook Greenway Planning Process

In its 1997 "Metro Greenprint" report, the Department of Natural Resources (DNR) identified the Trout Brook reach as an area with high potential for protection and restoration of natural resources. The Trout Brook – Lower Phalen Greenway was incorporated into the Saint Paul Land Use Plan in 1999.

In early 2000, the City applied for a planning grant from the DNR to prepare a master plan for the proposed greenway. Letters of support for this effort were received from eighteen community groups and neighboring interests. In March the City received a planning grant from the DNR, and subsequently hired the consulting firm of Bonestroo, Rosene, Anderlik & Associates to produce the Greenway Master Plan over the ensuing year.

In September of 2000, the St. Paul Planning Commission initiated a Small Area Plan and 40 Acre Zoning Study for the Trout Brook – Lower Phalen Greenway. In initiating the Small Area Plan, the Planning Commission established a Task Force to assist in developing the Plan, representing affected parties and community interests. Eleven groups sent a delegate to participate in the Task Force : Capitol Region Watershed District, Tri Area Block Club, District 6 Planning Council, Friends of Swede Hollow, Dayton's Bluff District 4 Community Council, Payne Phalen District 5 Planning Council, Diamond Products (formerly Gillette Corporation), Lowertown Depot, Ramsey County Parks, Saint Paul Parks & Recreation Commission, and DNR Metro Greenways Division. In addition to the Task Force, a Technical Advisory Committee advised this work.

The *Trout Brook Greenway Plan* addresses the greenway corridor between Saint Paul's northern boundary and Fourth Street. The area from Fourth Street to the Mississippi River is addressed in a separate plan, the *Community Vision for Lower Phalen Creek*. The two plans together represent the vision for the Trout Brook – Lower Phalen Greenway. A Summary of the two plans will be adopted as an addendum to the Saint Paul Comprehensive Plan.

II. Existing Conditions in the Trout Brook Greenway Corridor

□ Trout Brook: the Organizing Element for the Corridor

Only a few fragments of open creek (above, near Wheelock Parkway) remain within the corridor.

The Trout Brook Corridor has a long and eventful history. The Trout Brook Valley was the route of the Mississippi River before the most recent glacial era. This preglacial river sculpted the ridge and valley topography that shape the north end of St. Paul, and still define the Trout Brook subwatershed. Trout Brook once flowed at the heart of this valley.

The historic route of the creek began at the south end of McCarrons Lake, flowing for about five miles toward the southeast, where it flowed into the Mississippi River. The creek travelled from McCarrons Lake to the east, then south along the existing railroad tracks, through the Arlington-Jackson Pond and wetlands area, then to the southeast, then east of the BNSF railroad tracks that border the Trillium Site, then to the east of Williams Hill, and southeast again near Lowertown. where it joined with Phalen Creek. (A map of the historic route of Trout Brook and Phalen Creek is shown on Figure 1.)

At the same time, Phalen Creek flowed from Lake Phalen to the south and then west and south, joining Trout Brook near the Lowertown area in St. Paul. The combined creeks flowed together into a wetland estuary just below the current Indian Mounds Park. Native Americans used this large wetland area as a gathering and trading place, and followed the routes of Trout Brook and Phalen Creek in their travels to the North.

The landscape has changed greatly since European settlers began staking claims in St. Paul in the early 1800's. Early in the City's history, railroads altered the course of the creeks to build tracks from the river to the north. Native plant communities were altered and lost as well, as urban development spread north in the late 19th century. Early residential neighborhoods around Lafayette Park (located near Lafayette and Grove Street) later became industrial and commercial areas that followed the tracks north to Maryland Avenue. Trout Brook was gradually buried in storm sewer pipes as homes, businesses, railroads and freeways covered the original landscape. Today, only a few fragments of open creek and degraded natural communities remain:

- A remnant of Trout Brook remains between McCarron's Lake and Arlington Jackson Pond.

- A second remnant of creek/storm sewer also surfaces east of the Diamond Products (formerly Gillette Company) Building in Lowertown, in a stone-lined canal along Fourth Street.

□ Trout Brook Corridor History

Trout Brook is the most notable historic element of the corridor, which follows the approximate route of this stream. Trout Brook and Phalen Creek are associated with Native American presence and use of the area before settlement by Europeans. The two creeks met in a large marsh area below Dayton's Bluff and east of downtown. The area was a gathering, hunting and fishing area for Native Americans. Between 1730 and 1840, a small Dakota Indian trading village called Kaposia was located in this area (the village was then relocated to the South St. Paul area).

Historians report that the Phalen Creek/Trout Brook estuary was a cove in high water, with boats able to penetrate to what is now Third Street. During low water the area was a dense marsh, traverse by the two creeks. In the 1860's the railroads began to build trestles through the marshy Trout Brook/Phalen Creek estuary, and out onto the sandbars that paralleled the river shoreline. Later, the area was filled, and railroad grades and roads built on this fill.

Creek corridors offered the easiest (lowest grade) routes for railroads to travel from the Lower Levee area on the Mississippi River to the north and west. Railroad development through the Trout Brook corridor and the Phalen Creek corridor began in the 1860's. This corridor still includes some of the busiest railroad tracks in the Twin Cities area, and historic tunnels that are reminders of the challenges of early railroad construction in the corridor.

The Trillium Site has historic associations with a group of African-American Pullman porters, from the era when it was a coach yard for the Northern Pacific Railroad. Railroad use of the site began around 1891.

The railroad tunnels in the Westminster Junction area are historic structures, over 100 years old. Current plans for re-aligning 35-E will reduce the view of these tunnels. The City has agreed to create a historic display in the site area as mitigation for the reduced view of this historic resource. Railroad company representatives have noted that the costs of maintaining these historic tunnel structures are high. The western tunnel carries significant ground water in a stream on either side of the track, requiring ongoing maintenance.

The area around Lafayette and University was once a residential neighborhood much like the Irvine Park area, and was called Lafayette Park. Henry Sibley and other significant figures in Minnesota history had homes in this area. Trout Brook ran at the back of many of these homes, which were built in among the groves of oaks that covered the area. Early photos of the neighborhood

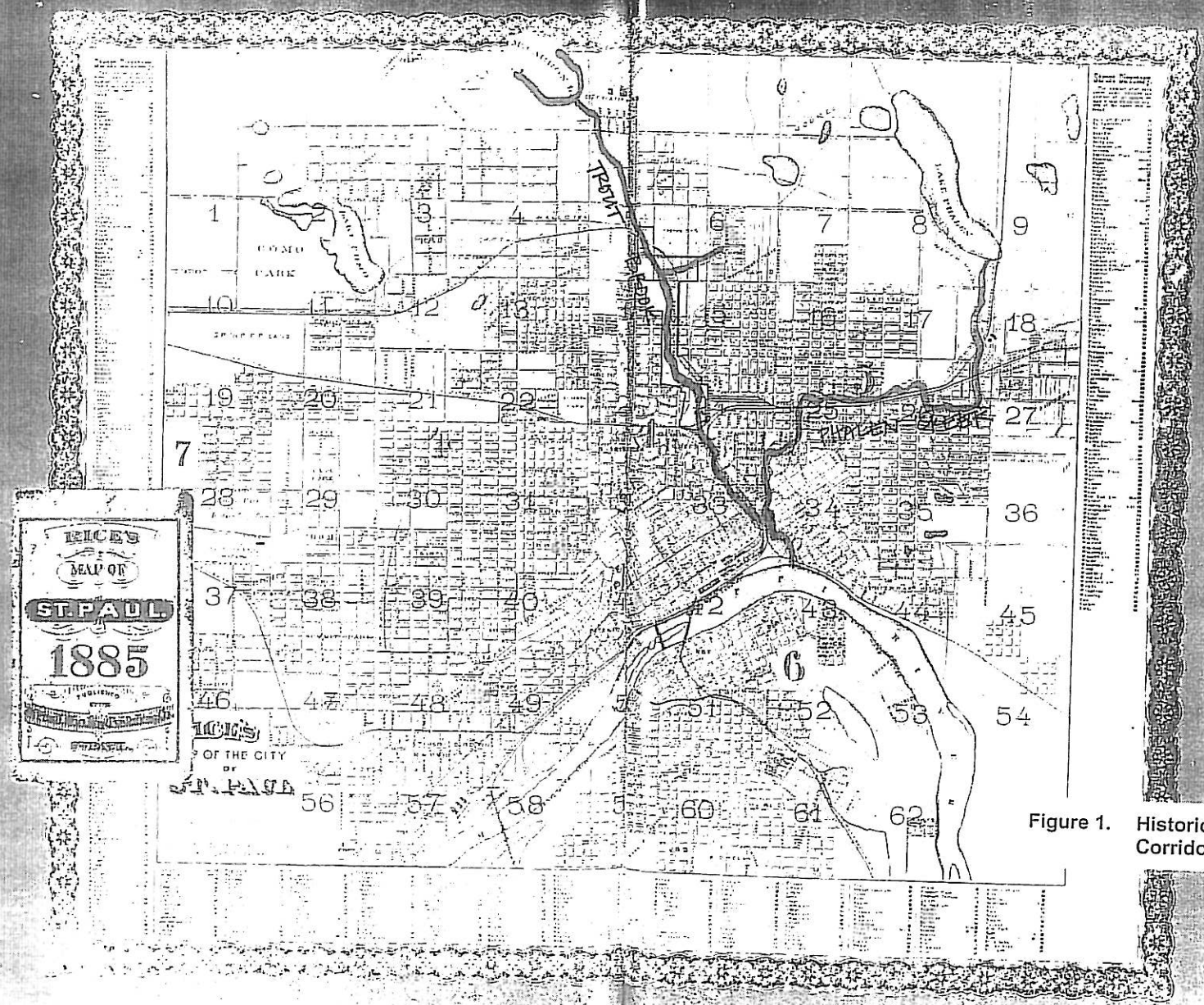
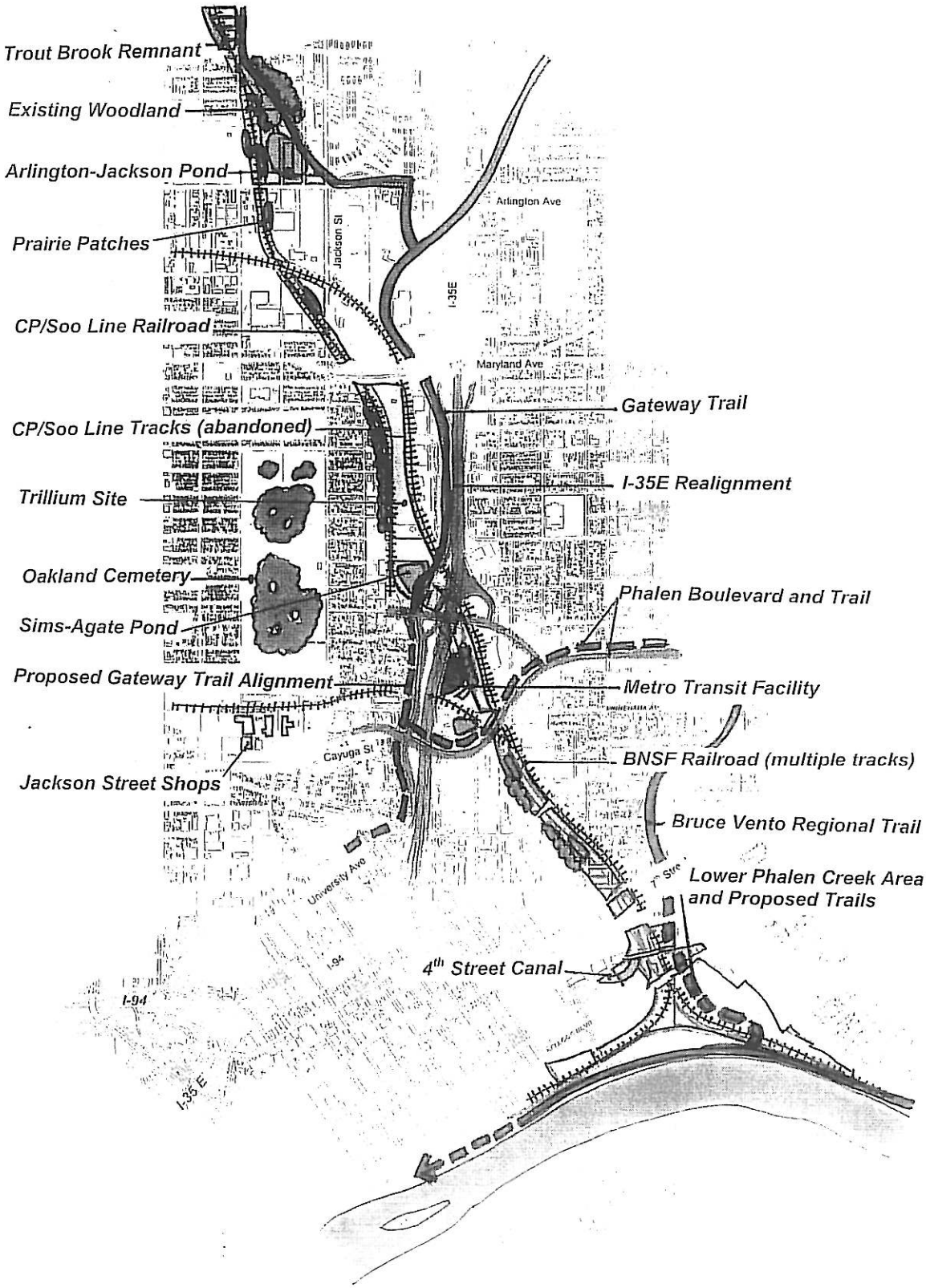


Figure 1. Historic Creek Corridors

show the character of Trout Brook, as it flowed through the Lafayette Park neighborhood (see cover photo), and also suggest a landscape of oak savanna, oak openings, and prairie grasses surrounding the creek.



City of St. Paul

Trout Brook Greenway

Existing Site Features
Figure 2
March, 2001

1500 0 1500 Feet

Nov., 2000

Data supplied by City of St. Paul

□ Water Resources in the Corridor

Existing Creek Flows

McCarrons Lake. The open portion of Trout Brook south of McCarrons Lake is maintained in part by outflow from McCarrons Lake, which occurs during all but the driest portions of the year. A watershed area of over 1,000 acres contributes water to McCarrons Lake. Much of this flow is filtered through wetlands before it reaches the lake, and outflow from the lake is of good quality. This outflow is a potential dependable source of water for creating a new Trout Brook downstream.

St. Paul Regional Water Services. The existing brook also receives discharges from St. Paul Regional Water Services. The Water Services discharges water into the brook that is a byproduct of its processing activities. The Water Services has an approved state permit to discharge up to 2 million gallons per day of this water into the brook. It currently discharges up to 1 million gallons per day, on an intermittent basis.

The Water Services plans to discharge up to 1 million gallons per day more often in the future, as it works to improve the taste of city water. The processing system will be changed during 2001, and engineers at the Water Services have indicated that they may be discharging 800,000-1,000,000 gallons of water almost daily when the changes are completed. A water treatment plant is being added, so that the discharge water meets Minnesota Pollution Control Agency permit standards before it enters the creek. The water is metered slowly from Water Services ponds to the creek channel. Water Services staff estimate that the average discharge will be at a rate of approximately 1.2 cfs (cubic feet of flow per second). This is a good base flow for a small creek, and is comparable to the flows typically seen on the created creeks in Swede Hollow and Battle Creek Park in St. Paul. The Water Services flows could augment the flows from McCarrons Lake to recreate Trout Brook downstream.

The existing flows from McCarrons Lake and the Water Utility flow into the Arlington-Jackson Pond and adjacent wetlands. Stormwater from surrounding neighborhoods also enters the Arlington-Jackson pond complex. From here, the storm water and flows from the brook enter the Trout Brook Storm Sewer through a structure at the south end of the wetlands. The addition of storm water to the flows from McCarrons Lake and the Water Utility reduces the quality of water entering the storm sewer, and increases the "flashiness" of the flows, in comparison to the flow in the brook immediately above the Arlington-Jackson Pond.

Trout Brook Storm Sewer

For the majority of its route, Trout Brook is now contained in the Trout Brook storm sewer. Storm water from the corridor and surrounding are carried by this large storm sewer. The Arlington-Jackson Pond and Sims-Agate Pond within the corridor receive storm water flows from surrounding neighborhoods, and discharge these flows into the Trout Brook storm sewer.

The Trout Brook storm sewer was constructed between the 1880's and 1950's. It was once a combined sanitary and storm sewer. In 1988, the Trout Brook Interceptor was constructed to carry only sanitary sewage to the Metropolitan Council's treatment plant south of Downtown St. Paul, and the sewers were separated. Since that time, repairs and improvements have also been completed to portions of the Trout Brook Storm Sewer. The storm sewer currently carries storm water runoff from a 4,300 acre watershed. The sanitary sewer runs roughly parallel to the storm sewer (see Figure 5). The Metropolitan Council has asked the Capitol Region Watershed District to take over the ownership and management of the storm sewer. The two organizations are currently discussing future ownership of the storm sewer.

□ Plant and Animal Communities in the Corridor

The native plant communities in the corridor have been eliminated by construction activities and urban land uses over the past 100 years. The existing trees and shrubs in the corridor are second growth, "volunteer" species, typically found on disturbed sites. Existing plant communities include a high proportion of invasive exotic species, such as spotted knapweed, Chinese elm, and reed canary grass. Remaining native community remnants are degraded and highly fragmented along the corridor. The ground layer throughout the corridor is dominated by annual weed and exotic species. The fragmentation of plant communities and invasion by exotic species have reduced the value of plant communities along the corridor for providing wildlife habitat.

The Final Environmental Impact Statement for the proposed Phalen Boulevard (1999) notes a small area of mature willows and cottonwoods remain in the Westminster Junction area, south of the Trillium Site. Similar groups of wetland plants exist in small pockets throughout the former stream corridor, on the Lower Phalen Creek site, and on peat soils and wetlands on the Trillium site and near the Arlington Jackson Pond. The western edge of the Trillium Site is bordered by mature trees of a variety of species, including red oaks, maples, and cottonwoods. The trees help to provide a buffer between adjacent residential areas and the railroads and freeway.

The large wetland at the south end of the Trillium site (Sims-Agate Pond) is a stormwater pond constructed in 1989. The pond will be moved to the north and west as a part of the realignment of I-35E and construction of an interchange at Cayuga Street. The Minnesota DOT will need to construct up to one acre of additional stormwater treatment facilities in this area as a part of the proposed highway construction. Vegetation around the pond is dominated by cattails, reed canary grass, and a variety of shrub species.

Big Bluestem,a native prairie grass, remains along some portions of railroad right-of-way in the corridor.

Some patches of native prairie grasses and forbs (flowering plants) exist along the CP/Soo Line Railroad tracks between the Arlington-Jackson Pond and the Trillium site, and within the site itself. Additional patches of prairie vegetation remain in isolated areas along the railroad tracks south of the Trillium site. Prairie species identified in fall, 2000, include Big bluestem (Andropogon gerardi), Little bluestem (Schizachyrium scoparium), Rigid goldenrod (Solidago rigida), and Blue vervain (Verbena hastata).

Wildlife in the corridor area are those that migrate through or have adapted to the urban conditions of the corridor. The corridor is included in the Mississippi flyway, a major migratory corridor for many bird species. Documented bird species in the area include many songbird species (such as chickadees, cardinals, song sparrows), waterfowl (herons, egrets, mallards and other ducks), and raptors (Red-tail hawks and Peregrine falcons). Other wildlife species documented in the corridor include cottontails, whitetail deer, woodchucks, squirrels, deermice, and western painted turtles.

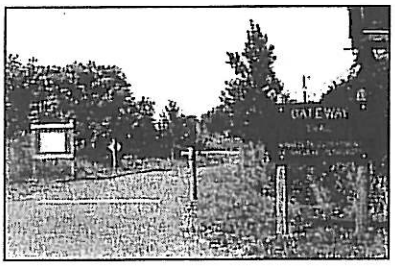
Marshner's map of the Original Vegetation of Minnesota (1935) indicates that the Trout Brook watershed area was dominated by Big Woods and Oak Openings plant communities at the time of settlement. Big Woods forests include Bur, White, Red and Black oaks, Elm, Basswood, Ash, Maple, Hornbeam (Ironweed), Aspen, Birch, Wild cherry, and some White pine, with a variety of shrubs, wildflowers, ferns, and other ground species. Oak Openings and Barrens include scattered groves of oaks (mainly Bur oaks), with shrub thickets (hazel and other species), in a matrix of prairie grasses and flowers. Species lists for these plant communities may be found in the DNR's *Minnesota's St. Croix River Valley and Anoka Sandplain: Guide to Native Habitats* (1995).

□ Existing and Proposed Trails

The proposed Trout Brook Trail and Trillium Site are located at a key crossroads for trails serving the eastern Metropolitan Area. (See Figure 2.) When completed, the Trout Brook Trail will connect the Trout Brook County Trail at McCarron's Lake to the Lower Phalen Creek area and the Mississippi River. The corridor will provide a connection of regional significance from the Mississippi River and downtown St. Paul to the north and west, much as the Gateway Trail provides this connection to the north and east .

The Trout Brook Trail will intersect the Gateway Trail at the south end of the Trillium site, near Cayuga Street. This intersection will link these two major trail corridors. From this intersection, the Trout Brook Trail is proposed to continue to the south, to link with the Phalen Boulevard Trail and trails planned for the BNSF-Dayton's Bluff Yard Site.

A summary of the existing and proposed trails in the study area follows, with a description of issues related to these trails and the Trout Brook Corridor. The existing and proposed trails in the corridor area are shown on the Corridor Plan (Figure 2). Existing pedestrian and bike trails in the corridor area include the following:



Gateway Trail at Cayuga Street.

- Trout Brook County Trail--runs from McCarrons Lake, through the St. Paul Water Utility Campus, to the southeast along Trout Brook remnant, to the intersection of Arlington & Jackson Streets. The trail continues along the south side of Arlington Street and through a commercial/industrial area along L'Orient, where it connects with the Gateway Trail.
- The Gateway Trail--runs to the east of the corridor, from Arlington Street, through a commercial/industrial area, then to the east side of the Trillium Site and BNSF railroad tracks, to a trailhead at Cayuga Street near I-35E.
- The Bruce Vento Regional Trail—runs from Beam Avenue in Maplewood, past Lake Phalen, through Swede Hollow,to a trailhead at the intersection of East Seventh Street and Payne Avenue.

Proposed trails that will expand the trail facilities in the area include the following:

- Phalen Boulevard Trail—will run along the north side of the new Phalen Boulevard and link with the Gateway Trail and Bruce Vento RegionalTrail
- Lower Phalen Creek Trails –a complex of trails planned for the BNSF-Dayton's Bluff Yard site that are proposed to connect the Lower Phalen Creek area with Lowertown, the Bruce Vento Regional Trail, and trails along the Mississippi River.

Gateway Trail Issues

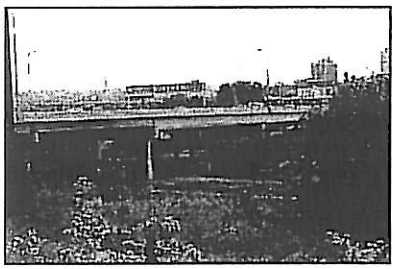
The realignment of I-35E and construction of Phalen Boulevard will change some of the existing trail alignments (see Figure 2.) The existing location of the Gateway Trail will be moved to the north and west along with the stormwater pond, and it's bridge over the railroad tracks rebuilt. The trail will continue to the south along the west side of the new I-35E to Pennsylvania, and from there make a link to the Capitol Area north of Downtown to the west, and link with the Phalen Boulevard trail to the east.

Minnesota DNR staff noted that at the time that the Gateway Trail was constructed, the agency looked at options for aligning the trail through the Trillium Site, rather than to the east of the BNSF tracks, along the freeway. However, this alignment was not feasible, due to land uses north of the Trillium site. This option was reviewed by agency staff again during development of this Corridor Plan, and was again found to be infeasible. Agency staff indicated that they do not view the proposed trail through the Trillium site as a duplication of the Gateway Trail, but rather as complimentary, providing a route to the north and west, that provides links to the Gateway Trail and its route to the east.

Community Vision for Lower Phalen Creek

The Community Vision for Lower Phalen Creek (2001) suggests that this area be developed as a bird and wildflower sanctuary. The plan proposes restoration of wetlands, woodlands, and prairies, and has identified trail linkages from this site to the Bruce Vento Regional Trail, Mounds Bluff, and the Mississippi River. The plan also notes that this site may link to trails and plant communities in the Trout Brook Greenway Corridor at Fourth Street, near some historic railroad bridges and the open creek/canal. The combined trail will then link to Lowertown along Fourth Street. The *Community Vision* provides detailed descriptions of the trails, natural community restoration, and other elements proposed in this area. The trail and natural community elements of the Trout Brook Greenway Plan have been coordinated with the elements proposed for the Lower Phalen Creek area, so that the two plans are compatible.

Existing Infrastructure and Corridor Fragmentation



Existing and proposed infrastructure in the corridor make greenway connections a challenge.

The Trout Brook Corridor is located at a key crossroads for existing and proposed trails in the St. Paul area. The major railway and freeway routes that bisect the corridor, as well as existing buildings such as the new Metropolitan Council Transit facility, limit the locations where connections are feasible, and will require the use of bridges or tunnels to create safe connections in some areas. The Corridor Plan describes proposals to deal with this issue in the Corridor and notes locations where ramps, bridges, or other infrastructure are needed to cross railroads or create linkages through the Corridor.

□ Trillium Site

Existing Conditions

The Tri-Area Block Club and District 6 Community have proposed that the Trillium Site be developed as an environmental learning area

within the Trout Brook Corridor. The Trillium Site was owned by the Northern Pacific Railroad (now Burlington Northern-Santa Fe or BNSF) for many years, and used as a yard for servicing Pullman coaches. Railroad tracks and facilities once covered the site; most of these have been removed. The remaining tracks to the east of the site are among the busiest railroad tracks in the region.

Past land uses have altered the soils and vegetation on the site. The upper 2-3 feet of soils are generally fill, with brown and black silty sand, clayey silt and fine sand, with traces of gravel and asphalt debris. Below this layer, are glacial outwash soils of brown and grey sand, silty sand, sandy silts, and sandy clays. At the south end of the site, black organic silt and peat soils begin at about 4' below the surface. The south area was historically a marsh, that has received some fill. Shallow ground water in the area has a gradient to the southwest. It varies from 6 to 28 feet below the soil surface.

Some existing soil contamination has been noted on the site, associated with railroad uses. A 1990 Phase II analysis identified some areas of petroleum and polynuclear aromatic hydrocarbon (PAH) contamination in the soils on the site. Heavy metals are present, but apparently below toxic levels in soil and groundwater. There is some potential that other areas of petroleum contamination may exist on the site, based on past land use. Rubble piles on the site may also contain materials that are subject to regulation if disturbed, although no problems have been identified by investigations to date.

If contaminated soils will be disturbed by redevelopment of the site, required remediation may include removal of contaminated soil, or capping and seeding the site and monitoring ground water for a specified time period. Requirements will depend on the soil contamination identified and proposed land uses. A 1990 estimate suggested that approximately 2500 cubic yards of soils may need to be removed for industrial land uses proposed at that time, at a cost of $187,500. This report did not consider requirements for soil remediation if the site is developed as an environmental learning center or open space.

The site is currently owned by Frattalone Excavating. Frattalone proposed operating the site as a storage facility. The proposal was denied by the city based on finding that it was not consistent with the City's comprehensive plan and development plans for this area, and may aversely affect unique or significant resources and neighboring properties. The State of Minnesota authorized $900,000 for the City to use to purchase the Trillium Site in 1999. The St. Paul Port Authority is currently working with a variety of organizations to complete purchase of the Trillium Site.

Adjacent land uses

Two private businesses, Modernistic, Inc. and Tilsner, Inc. are located on the western boundary of the Trillium site. Both have expressed

some interest in future expansion, though no definite needs or area for expansion have been determined at this time. The City supports the potential expansion of these two businesses, into the greenway area if necessary. The remaining western boundary of the site borders residential areas. Residents currently access the Trillium Site for walks and other recreation from this side.

The Canadian Pacific Railroad tracks along the western border the site have been abandoned. The former railroad property is owned by Frattalone Excavating.

The eastern border of the site includes the easement for the Trout Brook Sanitary Sewer and existing Burlington Northern-Santa Fe (BNSF) Railroad tracks. Further east of the tracks are the easement for the Trout Brook storm sewer, and several large warehouses. The Gateway Trail and Interstate 35E are further to the east. The Trillium Site is accessible from the Gateway Trail only at the south end of the site, as there is no other existing crossing through the warehouse properties and across the busy railroad tracks north of the Gateway Trail bridge.

The Trillium Site is accessible from the north from Norpac Road, and the CP Rail right-of-way under the Maryland Avenue bridges. The Trout Brook Interceptor and storm sewer easements extend under Interstate 35E along the railroad tracks, and connect the Trillium site with the corridor area to the south. This connection is currently unpaved and does not provide good access for pedestrian or bicycle traffic. All access to the site is currently informal, and has little visibility from major streets or existing trails.

III. Trout Brook Corridor Plan

The plan for the Trout Brook Corridor is shown in Figure 3. From north to south, the plan includes the following elements:

- Corridor from McCarron's Lake to Trillium Site
- Trillium Site
- Trillium Site to Lower Phalen Creek Area

□ Corridor Connections from McCarron's Lake to the Trillium Site

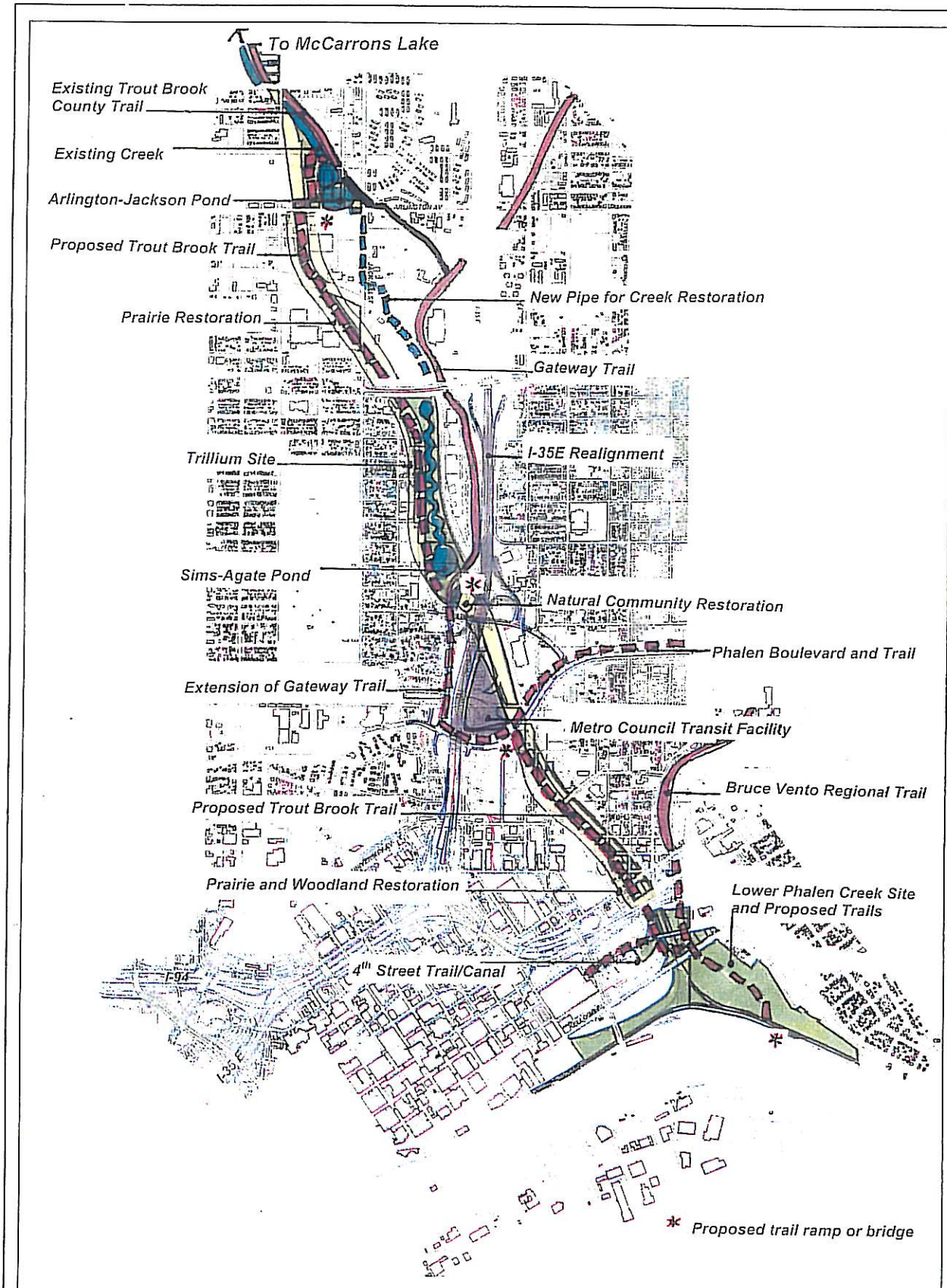
Trails proposed in this corridor link the existing Trout Brook County Trail to the Trillium Site along the CP/Soo Line Railroad right-of-way. At the north end of the corridor, the Trout Brook County Trail connects McCarrons Lake to the Arlington-Jackson Pond. (Additional connections exist or are proposed for trails from McCarrons Lake to the north and west in Roseville.) From the pond, the trail is proposed to follow the west side of the pond and cross the Northern Pacific RR tracks at Arlington Avenue (an existing, at-grade connection). From here, a ramp will be needed to connect the trail with the CP/Soo Line Rail bridge over Arlington Avenue. (Alternatively, a ramp or bridge could cross both the BNSF and CP/Soo Line tracks, to connect the Trout Brook Trail with the CP/Soo Line right-of-way.)

The CP Rail/Soo Line right-of-way south of Arlington is an ideal trail route. It exists high above the surrounding landscape, providing clear views of the original path of Trout Brook, the existing landscape, and ridge areas to the east and west that form the watershed. The track is in poor condition, and provides limited service to only one business located on a siding south of Arlington. The City should work with this business and the railroad to find alternatives to the rail service, and then consider acquisition of this right-of-way.

The CP Rail/Soo Line right-of-way provides a direct link without interruption to the Trillium Site. The track has been abandoned through the Trillium Site.

The quality of natural communities and the existing creek should be restored in this part of the Corridor. Several types of plant communities may be improved or restored within this portion of the corridor:

- The existing woodland along the creek should be restored to better health. Recommended actions include removal of buckthorn and other exotics, cleanup of trash and debris in the woods and along the creek, and planting native shrubs and



City of St. Paul

CORRIDOR PLAN

Trout Brook Greenway

Figure 3

1500 0 1500 Feet

N W E S

Nov., 2000

Bonestroo Rosene Anderlik & Associates
Engineers & Architects

ground species along the creek banks and in the woods. This area currently provides habitat for many birds such as wood ducks, pheasants, and songbirds.

- Prairie grasses and a few native prairie forbs are visible along the CP Rail/Soo Line track near the St. Paul Water Utility, west of the Arlington-Jackson Pond, and along the whole length of the right-of-way between the pond and the Trillium Site. These areas could be improved through prescribed burns and interseeding with prairie species, as a trail is developed in this area.
- The wetland communities around the Arlington-Jackson pond have been heavily invaded by buckthorn and reed canary grass. These communities could be improved through prescribed burns or mowing at key times of the year, and interseeding or planting with native wetland plants. The upland areas around the pond could be restored as prairie or oak openings.

□ Concept Plan for the Trillium Site

Figure 4 shows the Concept Plan for the Trillium Site. Elements of the plan are described in the sections that follow:

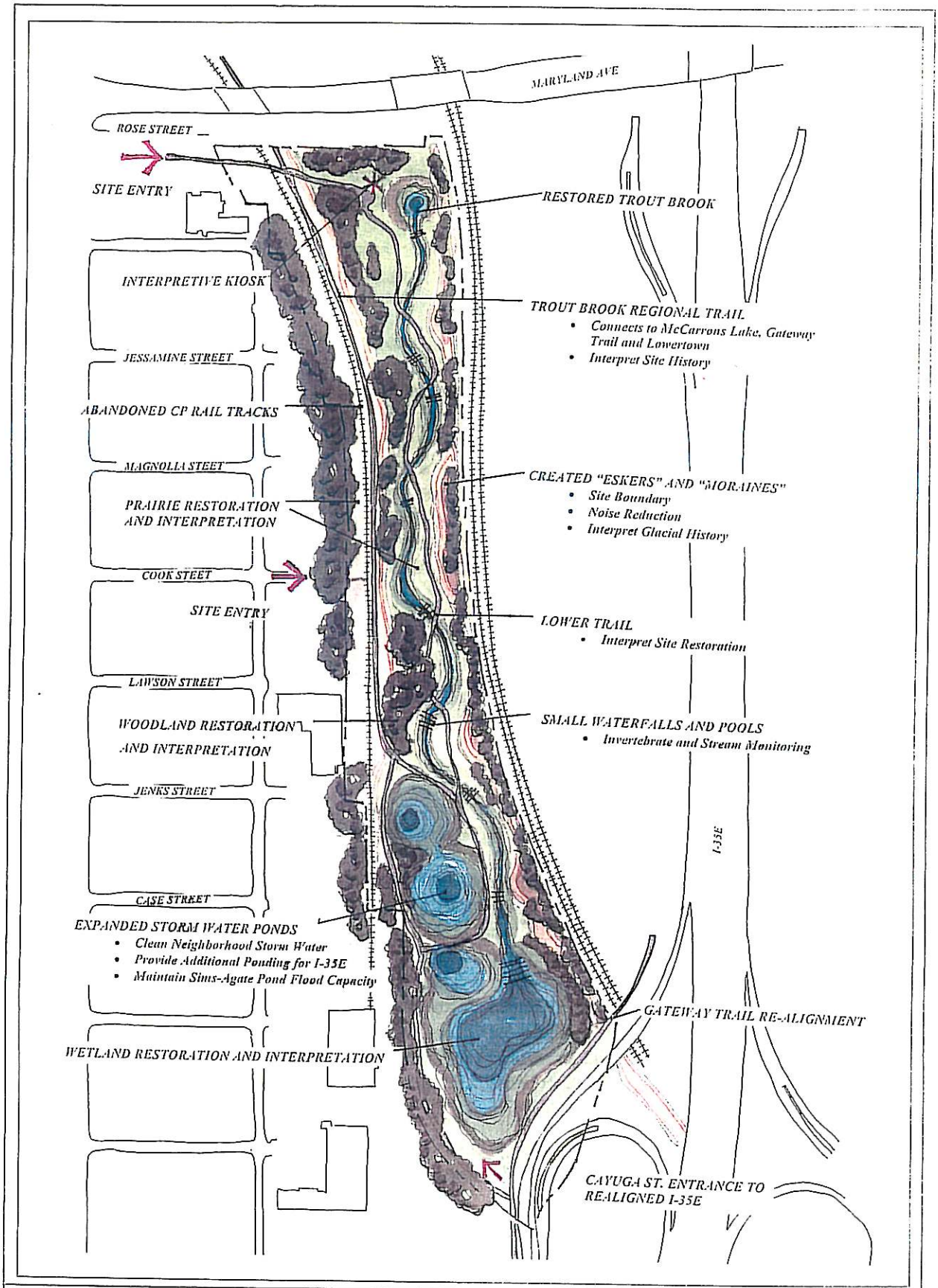
Water Features

Analysis of the existing storm water system near the corridor suggests that it is feasible to use gravity flows to recreate a portion of Trout Brook and wetlands on the Trillium Site. This analysis is based on existing topographic and infrastructure information available from the City of St. Paul. Additional information, such as current topography, will be needed to confirm the analysis and develop final site plans.

Figure 5 illustrates options for restoration of water features on the Trillium Site. The upper portion of the figure is a plan view of the site, and the lower portion is a cross-sectional view. The blue line shows the location of the Trout Brook Trunk Storm sewer. Water from the Arlington-Jackson Pond enters the storm sewer through a structure at the south end of the pond. Storm water from neighborhoods to the north and west of the Trillium Site also enters the storm sewer through local pipes. The green line shows the location of the Trout Brook Sanitary Sewer Interceptor. The dashed black line on the cross-sectional view indicates the existing ground surface.

Creek Restoration

Figure 5 illustrates an option for creating an open creek on the Trillium site. Some of the water from the Arlington-Jackson pond will be diverted to a new pipe through the structure at the south end of the pond. The new pipe could follow the existing storm sewer easement to the south and east and be "daylighted" at the north end of the Trillium Site. Approximately 2-3 cfs of water, including water from the



City of St. Paul

TRILLIUM SITE CONCEPT PLAN

Figure 4

March, 2001

St. Paul Water Services and McCarron's Lake outflows can be diverted to the site along this route. A 15-inch pipe is proposed to carry this amount of flow. The gradeline of the pipe is estimated to be 0.14% through this area.

The water will "daylight" at the north end of the Trillium Site, probably in a small wetland. From here, the water will flow in a series of pools and riffles to the Sims-Agate Pond. The creek will be "daylighted" about four feet below the existing ground level at the north end of the site, to allow sufficient grade for gravity flow from the Arlington-Jackson Pond.

The creek will drop approximately 23 feet as it travels from the north end of the site to the normal surface level of the Sims-Agate Pond. This will allow for several small waterfalls or cascades as it travels through the site, and a larger cascade as it enters the pond. The creek should be created to have a natural meander pattern, based on the creek flow and site gradient. A wide buffer of native vegetation should be added along the entire length of the creek channel, to prevent erosion, provide shade, and improve creek habitat. The proposed trail on the site may cross the creek in several locations to provide views, while maintaining the integrity of the vegtated buffer along the creek.

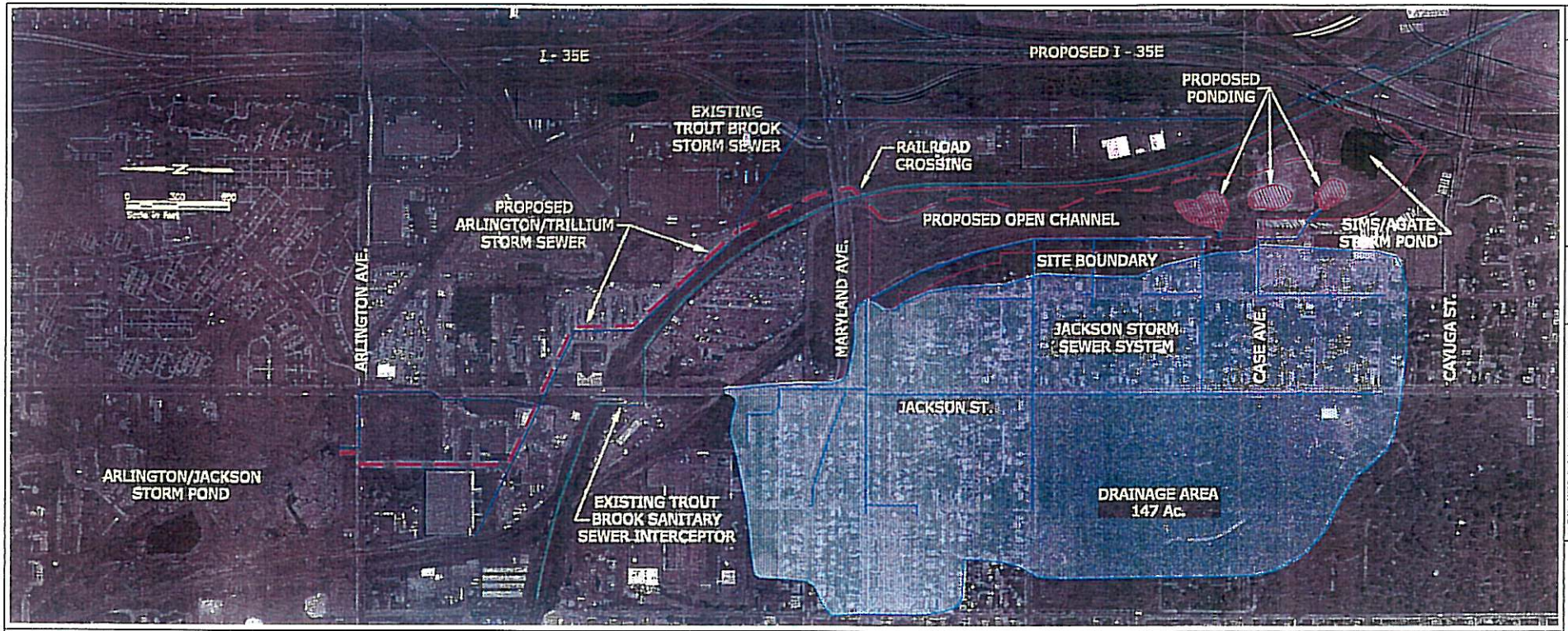
If the planned pattern of discharges from the St. Paul Water Utility and current flows from McCarron's Lake remain in place, there should be a relatively constant flow of 1-2 cfs of water in the creek channel from spring through fall.

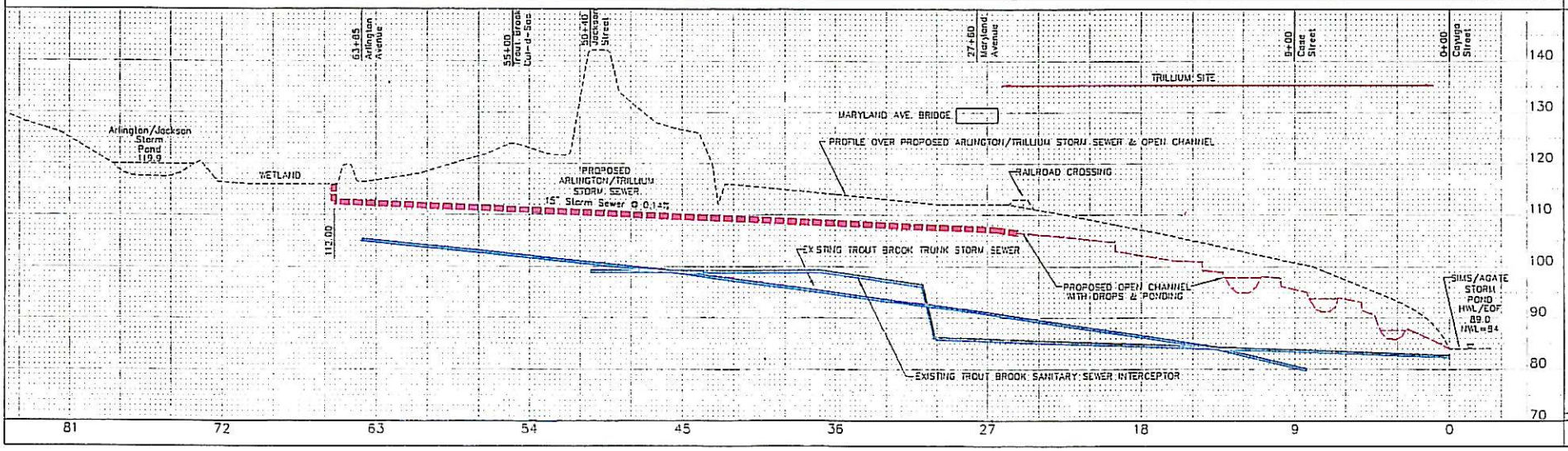
Storm Water Ponding

New wetlands may also be created at the south end of the Trillium Site by tapping neighborhood stormwater flows from the west. Figure 5 illustrates this option. The shaded area indicates the 147-acre watershed that flows through existing storm water pipes to the Sims-Agate Pond and Trout Brook Storm Sewer. Blue lines indicate the storm water pipes from the neighborhood to the west. The flow may be captured as it flows through the Trillium Site, and used to create a series of ponds at the south end of the site. It is estimated that ponds averaging 4 feet deep with gradual side slopes would need to be approximately 3-4 acres in total size to clean storm water from this watershed area to meet NURP (National Urban Runoff Program) standards.

These ponds would remove sediments, nutrients such as phosphorus, and other pollutants from neighborhood storm water runoff before it enters the Trout Brook Storm Sewer and flows to the Mississippi River.

New ponds created on the site may help to satisfy water quality goals for the City, Watershed District, and Minnesota Department of Transportation (MnDOT). MnDOT needs to provide additional ponding near I-35E as a part of its realignment of this portion of the freeway. The City of St. Paul and MnDOT are determining needs for





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CITY OF ST. PAUL
TROUT BROOK GREENWAY
STORM WATER PONDING OPTION

Figure 5

211-00-162

2 2

replacing Sims-Agate pond and for additional ponding on the site as the alignment of I-35E is changed.

This plan presents concepts for increasing and reconfiguring the ponds on the site to replace the Sims-Agate pond, meet the increased needs for I-35E, and provide more water quality treatment for stormwater from residential neighborhoods to the west of the Trillium Site. The concept uses a chain of ponds of varying depths at the south end of the site to replace the Sims-Agate pond and provide for additional water quality benefits by cleaning neighborhood storm water and storm water runoff from I-35E.

Analysis completed for this plan also identified an option to tap the neighborhood storm water system at the north end of the site, to create a pond or supplement creek flows in this location. A watershed area of approximately 35 acres could provide stormwater flows to the north portion of the site. This options is illustrated on Figure 9 in the Appendix. The Trout Brook-Lower Phalen Task Force selected the option shown on Figure 5, with ponds at the south end of the site, for these reasons:

- The preferred option separates storm water flows from creek flows, and avoids compromising the quality and consistency of creek flows.
- The preferred option locates ponds on the south end of the site, where soils are more suited to wetland creation.

The Trout Brook-Lower Phalen Project Task Force indicated that its first priority for restoring water to the Trillium Site is the restoration of the creek.

Changes to Sims-Agate Pond

The proposed changes in alignment of Interstate 35-E and creation of a new interchange at Cayuga Street will require that the existing storm water pond be moved to the north and west. The Trilium Site Concept Plan shows the new location of the pond, and the addition of storm water ponds to filter storm water from the neighborhood and I-35E.

Boundary Elements

Berms have been included along the east boundary of the Trillium site. These landforms will create a strong of boundary, and could be designed to resemble eskers, moraines, or ridge landforms that help to interpret the geologic history of the watershed. The "eskers" will also help to provide a screen from the freeway and heavy railroad traffic. The berms could be created to be 5 to 10 feet in height, with gradual side slopes, 1:5 or flatter, to allow some walking access. The berms should be vegetated. Short grass prairie, clumps of oaks, or shrubs native to oak savanna and oak

openings plant communities may be best adapted to the drier conditions of the "eskers".

A fence should also be included along the eastern boundary of the site, to create safe separation from the busy railroad tracks. The BNSF Railroad recommends a cyclone-type fence, at least 6 feet in height. The fence should be located at least 30 feet from the center line of the track, or along the right-of-way line. Features added along the eastern boundary also need to be designed and located to maintain clear access for the sanitary sewer along this boundary of the site.

Restoration of Natural Communities on the Trillium Site

A variety of natural communities that were present in the watershed at settlement may be restored on the Trillium Site. Nearly all native vegetation on the Trillium Site has been highly degraded or eliminated by past land uses. The soils on the site have also been altered and compacted by railroads and roads. Fill has been added throughout the site, and some areas are known to have contaminated soils. The site presents many challenges for plant community restoration.

Restoration on the site should take several factors into consideration:

- Communities selected for restoration should be selected from among those present in the watershed at the time of European settlement;
- The communities selected for restoration should be fit to the soil and moisture conditions on the site;
- The communities selected should complement the activities proposed for the site, and address neighborhood and city goals for buffering freeway noise and creating a visible "gateway" for the city;
- The plant communities selected should consider the long-term ownership of the site, and maintenance resources available;
- The plant communities selected should focus on providing food, cover, nesting areas, and other habitat needs of birds that live in and migrate through the corridor. While these communities may also provide for habitat needs of other species, the plantings should not be designed to attract large mammals to the corridor or Trillium Site, given the heavy rail and roadway traffic through the corridor.

The Master Plan recommends the following plant communities be restored on the site:

Short/dry prairie along the upper and lower trails, in the relatively open portions of site shown on master plan;

Wetland communities including emergent wetlands, wet prairie, and sedge meadows around the northern wetland and along the creek channel;

Wetland communities including emergent wetlands, wet prairie, and shrub wetlands around the southern wetland;

Oak openings with prairie understory on the created "eskers" that border the east side of the site, and on the "bluff" between the upper and lower trails;

Oak Woodland or Big Woods on south half of site. Plant communities should be chosen here based on further soils analysis. The existing woodland along the western border of the site should be restored by removal of exotic species, and planting of native shrubs and understory species appropriate to a dry oak woodland.

Past land uses and current soil conditions on the site will make restoration challenging. Restoration activities on this site will require careful preparation, monitoring, and adjustments in management based on experience on this site and similar sites. Restoration should consider at least the following:

- Elimination (or at least control) of exotic species on the site, through use of prescribed burns, cutting and removal, and selective use of appropriate herbicides.
- Scarification or other methods to loosen and aerate soils
- Addition of organic matter and/or soil microbes
- Addition of top soil if needed in some areas
- Experimentation with seed mixes and monitoring to determine success of various species. The site may require an early seeding of "pioneer" native seed types, followed by successive seeding or planting of more diverse species later.

Trails on the Trillium Site

Trails on the Trillium Site will provide a variety of experiences. The Master Plan suggests a long loop trail that includes both the upper and lower portions of the Trillium site. Trails are intended for passive recreation, such as walking and cross-country skiing, and would be closed to motorized uses.

The Trout Brook Trail enters the site from the north along the CP Rail right-of-way near Norpac Road. The Trillium Site may also be entered from the neighborhood, at Rose Street, just south of Maryland Avenue. From the south, trail users may enter the site from the Gateway Trail, near the Sims-Agate Pond. A second entry from the neighborhood is proposed at Cook Street.

Upper trail. The upper trail should be a paved (bituminous) trail that links to the Trout Brook Trail at the north, and Gateway Trail at the south end of the Trillium site. The trail follows the old CP Rail tracks, and has excellent views down onto the Trillium site and its creek, as well as skyline views of Downtown St. Paul. In the event that the businesses on the western edge of the Trillium Site (Tilsner and Modernistic) needed to expand into ghe greenway area, the upper trail could be moved toward the east to accommodate this expansion. The trail is buffered from homes to the west by the existing woodland. The trail has little grade, and can be fully-accessible. This trail will offer opportunities to interpret the history of the site, from the glacial eras through the changes brought by humans in the 20th Century.

Lower trail. The proposed lower trail follows the route of the restored creek. The trail could cross the creek several times, near the waterfalls, and include a boardwalk or bridge between the wetlands at the south end of the site. The trail should be used to interpret the restoration activities on the site.

The characteristics of the trail should differentiate it from the upper trail. The trail should provide for a more leisurely experience than the upper trail, allowing users to appreciate the creek and restored plant communities. The City should explore a variety of options for trail materials, including a bituminous surface, but ensure that the location of the trail does not impact the creek. A buffer of native vegetation should be maintained to filter runoff and prevent erosion from the trail and trail use. Several esignated areas should be provided for viewing the creek, to discourage trampling of buffer vegetation along the remainder of the shoreline of the creek.

Site Access

Many users will access the site from the Gateway Trail at the south, or from the proposed Trout Brook Trail at the north, along the CP/Soo Line rail grade.

The concept plan also proposes an access to the Trillium Site at Rose Street. The grade at this location will allow for relatively easy development of a handicap-accessible connection to the upper trail on the site. The City may explore possibilities to add a limited amount of parking at this location along Rose Street. Accessible entries (grade of five percent or less) from streets to the south will be more difficult to develop, due to steep slopes on the west side of the Trillium Site.

An entry toward the south end of the site should also be considered. Representatives of Modernistic, Inc., noted that pedestrian access at Jenks Street should not be encouraged, as trucks frequently use this street. The southwest end of the Trillium site is also the area most likely to be converted back to industrial use, in the event that Modernistic or Tilsner need to expand. For this reason, neighborhood access to the Trillium Site should occur toward the middle of the site , at the east end of Cook Street. Both the Rose Street and Cook

Street entries should be designed to provide access for Public Works vehicles that provide maintenance for the creek and ponds on the site.

Signs should be added on Jackson Street and Cayuga Street to direct the public to the Trillium Site, and identify access points.

Education and Interpretation

Each element of proposed in the plan will provide opportunities for education and interpretation, to create a unique urban environmental learning center. The Trillium site should have a variety of education and interpretation features built into the site. These could include kiosks, signs, and stations for monitoring restoration activities, such as the following:

- Stations for monitoring wetland and creek water quality and flow
- Signs that interpret the creek/wetland restoration and its connection to neighborhood water sources
- Stations (near pools and riffles) for monitoring invertebrates, amphibians, and other elements of creek biology
- Signage that describes plant community restorations
- Stations for monitoring plant community restorations
- Bird watching stations along the "bluff" and upper trail
- Signs that interpret the geologic history of the watershed and effects of stream erosion. These could be placed along the "eskers" or "ridge" proposed for the eastern boundary, and along the creek
- Signs or kiosks that interpret the human history of the site, such as influences of Native Americans in the watershed, railroad history, effects of urbanization on creeks and surface waters, and other aspects of neighborhood and local history.
- An interpretive kiosk, with site maps and general information, could be added near the site entry.

The Corridor South of the Trillium Site to Lower Phalen Creek Site

Trail Connections

The Corridor Plan analysis considered several options for trails and habitat connections that could complete the corridor linkage from the Trillium Site to the Lower Phalen Creek area.

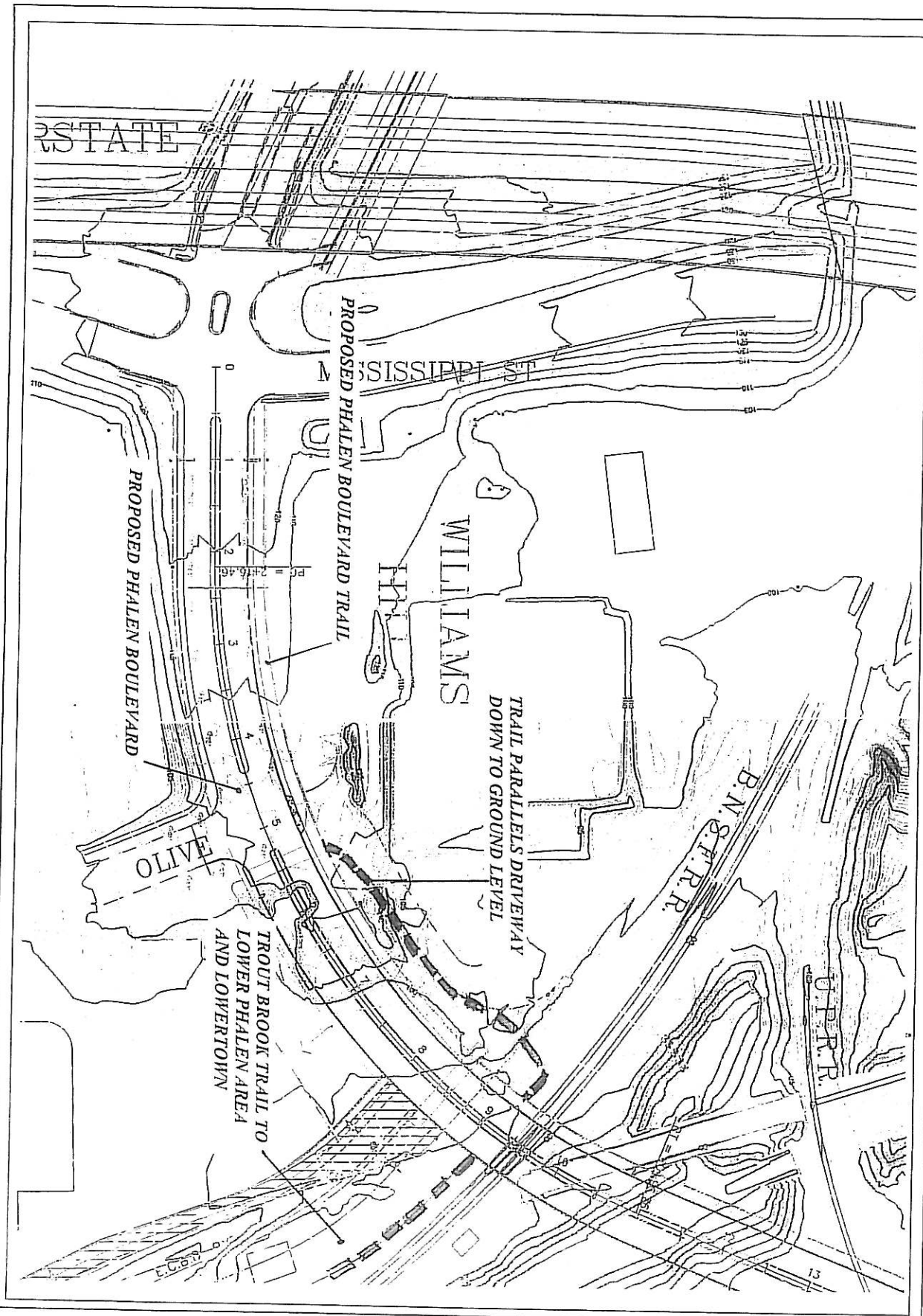
Trout Brook Trail South of the Trillium Site. The recommended trail alignment is shown on Figure 3. The realignment of the Gateway Trail and Interstate 35-E will help to further the connections from the Trillium Site and Trout Brook Trail to Downtown St. Paul and the Mississippi River. The trail south of the Trillium Site would follow the Gateway Trail extension straight to the south along the 35-E access road, to Pennsylvania Avenue. From this location, the trail would connect with the Capitol Area to the west, or join the proposed trail that will run along the north side of Phalen Boulevard to Swede Hollow.

From Phalen Boulevard, the trail may follow a proposed driveway or ramp to carry trail users to ground level. (Phalen Boulevard rises to bridge the railroad tracks in this area.) From here, the Trout Brook Trail may follow the wide open area that parallels the railroad corridor to the south and east. This corridor is east of the Minnesota DNR and MPCA buildings, and currently includes wooded hillsides and grassy areas, and a gravel road. Some grading may be required along this route, to allow for grades that meet ADA standards. At Fourth Street, the Trout Brook Trail can link to the trails on the BNSF-Dayton's Bluff Yard Site in the Lower Phalen Creek Area or follow Fourth Street to reach Lowertown.

A trail that borders the BNSF Railroad tracks through this portion of the corridor will require the same safety features as the trail near the Trillium Site: a cyclone-type fence, at least 6 feet in height, set back 30 feet from the centerline of the railroad tracks, or along the right-of-way boundary. BNSF staff have indicated that the railroad is not interested in granting easments in its right-of-way or selling land for a trail at this time.

The Capitol Region Watershed District suggested that if the District assumes ownership of the Trout Brook Interceptor through this corridor, the easement for the interceptor may offer a potential route for the Trout Brook Trail.

Trail and Road Improvements at Fourth Street. Three railroad bridges currently cross Fourth Street, in the area between the proposed routes of the Trout Brook Trail and Lower Phalen Creek Trails. An open remnant of Trout Brook is also visible and audible in this area, in a stone canal approximately five feet below the level of the street. The stone work of the railroad bridges and canal, and the sound and



City of St. Paul

Trout Brook Greenway

Proposed Trout Brook Trail
Phalen Boulevard to South

Figure 6

1500 0 1500 Feet

Nov., 2000

Bonestroo Rosene Anderlik & Associates

visibility of water could be come attractive features along the trails, which will join in this area.

The Trout Brook Trail enters this area from the north, along the west side of the railroad tracks. There are several sets of busy tracks in this area, preventing a trail crossing to the Lower Swede Hollow Area trails above 4th Street. The Trout Brook Trail will cross 4th Street on an abandoned rail bridge, and follow the existing gentle slope to the west to join 4th Street. From here, trail users may continue to Lowertown to the west, or turn east and access the trails in the Lower Phalen Area or the Bruce Vento Regional Trail.

Currently, a steady flow of ground water seeps from the railroad bridges on the north side of Fourth Street, and crosses the road to cascade into the canal. The water creates severe ice problems and erodes the bituminous roadway, and will create the same problems in the future on any trail planned for the area. Figure 7 suggests an option to create a channel to collect the water on the north side of the road. From the channel, a trench or pipe can carry the water safely under the roadway, and allow it to cascade into the canal. A trail is proposed on the south side of 4th Street, to connect the Trout Brook and Lower Phalen area trails.

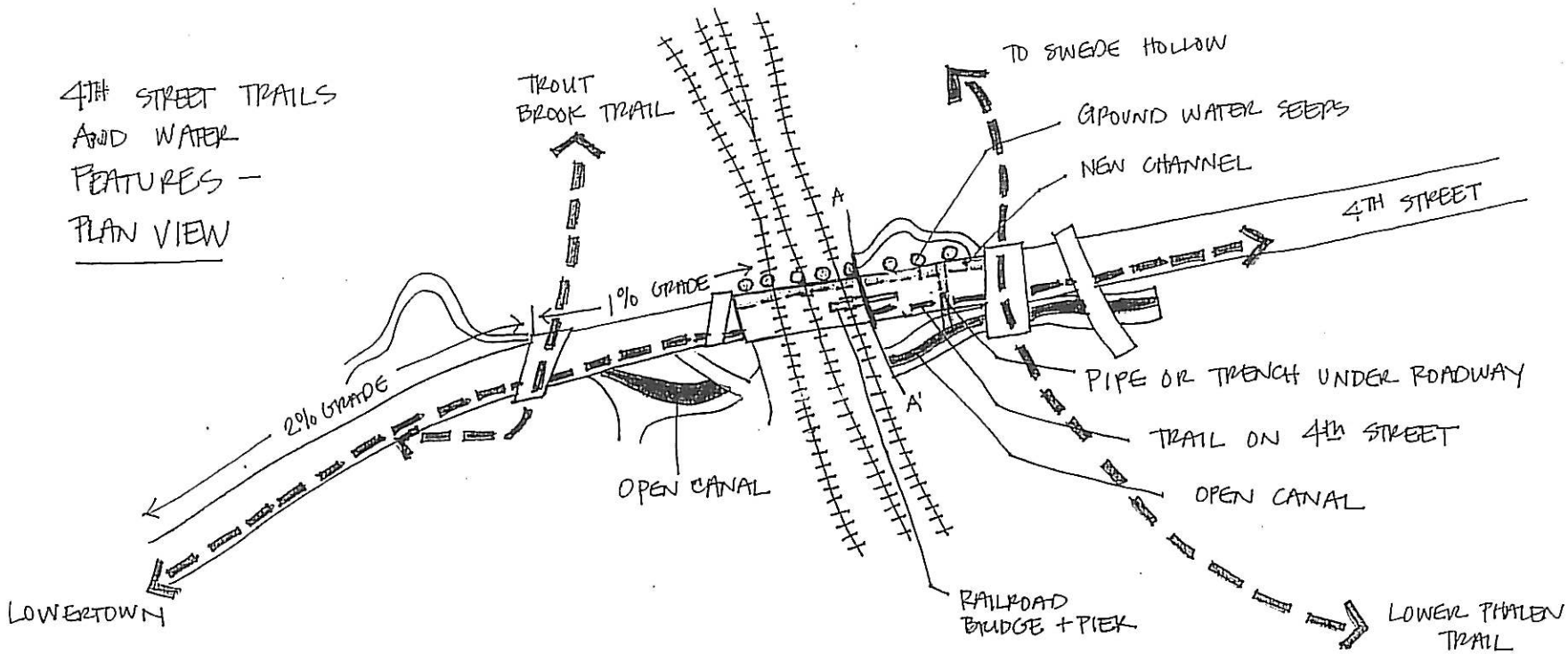
To accommodate the water channel and trail, Fourth Street would be narrowed to 11-foot lanes on each side, with the water channel on the north side, and a trail on the south sidel. The Lower Phalen Creek Master Plan suggests a variety of interpretive features that may be added in this area, so that trail users may understand the historic infrastructure and current condition in this area.

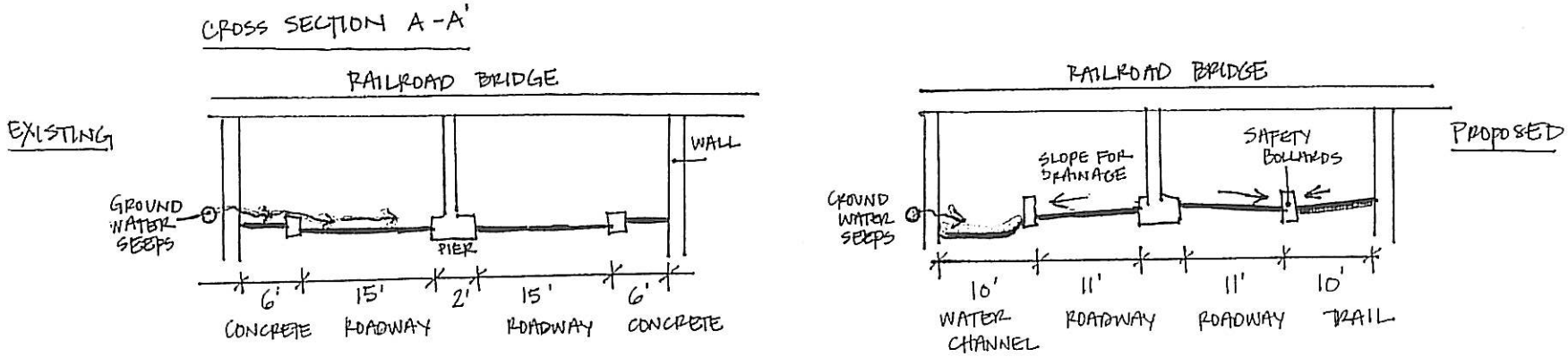
Trout Brook Trail South of the Trillium Site - Option Two. The Master Plan analysis also reviewed options for routing the Trout Brook trail under the new I-35E bridge, along the railroad tracks east of the new MTC Transit Facility, and to the south. This route would generally follow the existing easement for the Trout Brook Storm Sewer south of the Trillium Site. Several issues create problems for this route.

The trail along the storm sewer easement would be immediately adjacent to busy railroad tracks in this area. This issue would require discussion with the Northern Pacific Railroad.

The slope on the east side of the MTC facility is extremely steep—a 2:1 slope in some areas, and 3:1 in most areas. Construction of a trail on these slopes would require retailing walls, and will have a high cost. Also, it may not be possible to construct a bridge from the south end of the MTC site over the railroad tracks to the south with a grade that meets ADA standards.

A trail on this route will need a bridge or tunnel over the railroad tracks south of the MTC facility. The cost of this crossing will be high, and will require discussions with the railroads.





4TH STREET TRAIL – TROUT BROOK – LOWER PHALEN GREENWAY

Figure 7

SKETCHES

3.01

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Habitat and Plant Community Connections

Vegetative community connections can be made along the Trout Brook storm sewer corridor from the Trillium Site to the Lower Phalen Creek area. While creation of trails along this route may not be feasible, vegetative connections can be made more easily, to create a continuous habitat corridor from the Lower Phalen Creel Area and Mississippi River, through the Trillium Site, to McCarron's Lake. South of the Trillium Site, the following strategies should be considered:

- Work with the railroad companies (mainly the BNSF Railroad in this area) to restore prairie communities along the railroad tracks and proposed trail.
- A shade and salt tolerant mix of native grasses and forbs should be planted in the corridor under the I-35E bridge. A suggested mix, developed with the assistance of Minnesota DOT staff, is included in the attachments to this plan.
- The wooded slopes along the west edge of the corridor could be improved through removal of exotic species, and planting native trees and shrubs.
- Wetland areas and the canal entry along Fourth Street could also benefit from removal of exotics and planting native wetland or wet meadow species.

Plantings throughout the corridor should emphasize species that provide food, cover, nesting habitat, and other needs for bird species that use the corridor. This will compliment the efforts to create a bird sanctuary and habitat in the Lower Phalen area. Some of these species will also provide habitat for small mammals and other animal species. However, given the small size of the corridor and major railroad and roadway crossings, it is not desirable to encourage larger mammals such as deer to use the corridor.

Railroad Right-of-Way

Much of the Trout Brook Greenway includes railroad right-of-way. (See Figure 8.) In most areas, trains are still actively using the tracks in the corridor. This plan recommends the following management steps related to the rail right-of-way in the corridor (in geographic order, from north to south):

- As the Trout Brook Trail is extended from Arlington-Jackson Pond to the CP/Soo Line right of way, it may use an existing at-grade crossing along Arlington to cross the BNSF tracks. The trail will then require a ramp or bridge to reach the higher CP/Soo Line tracks.

  The City should explore options for crossings in this area as plans for the trail are developed. A bridge that would cross both sets of tracks would provide the most safety,

but also have a high cost. Addition of a pedestrian gate with flashing lights at the existing sidewalk crossing is also an option that may increase safety. The cost of a gate and lights is approximately $150,000-$185,000.

- The City should discuss options for acquiring the CP/Soo Line corridor from the Arlington-Jackson Pond to the Trillium Site with the railroad, including options to relocate or serve the industry that is still using rail freight service. A trail should then be developed in this corridor, and prairie vegetation restored along the trail.

- A fence should be placed along the east edge of the Trillium site, to separate site users from the busy BNSF tracks to the east. A fence may also be needed for safety along the trail corridor south of the Trillium Site. Fence characteristics include the following:

  - The fence should be at least 6' high, and a cyclone or wrought iron material.

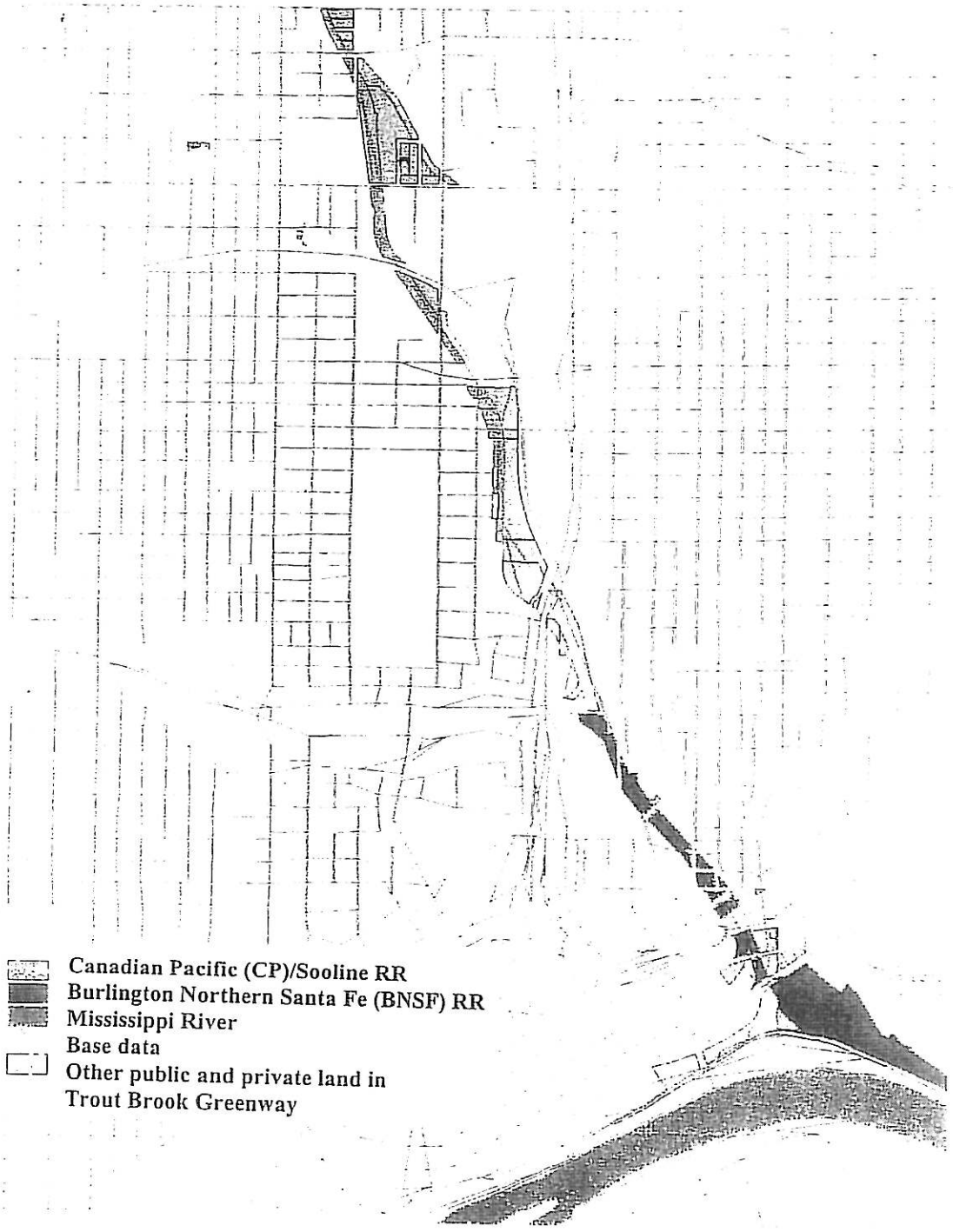
  - The railroad prefers a set back of at least 30', even if it does not own a right-of-way that wide.

  - Local BNSF staff will review plans for the Trillium site or trails in the corridor for safety and drainage issues.

- Vegetation within the rights-of-way should include as much natural woodlands and grasslands as feasible. Much of the right-of-way through the corridor already includes such vegetation, though it has been invaded by a variety of exotic species. A first step in improving the habitat within the corridor would be removal and control of exotic species. Next, prairie vegetation should be restored where feasible to create a continuous vegetated corridor. Shorter grasses are preferred to maintain sight lines at crossings, and to adapt to dry, gravel soils in the right of way. Many rail corridors in the Twin Cities currently include prairie vegetation, including portions of this corridor.

  An initial meeting with BNSF staff indicated that the railroad would prefer not to have anything planted on their right of way. The City and DNR should continue to work with the railroads to develop management plans to manage the vegetation in the corridor to improve its function as a habitat corridor, while not creating a burden for railroad maintenance staff and resources.

- The City should continue to discuss options for obtaining a trail easement in the BNSF corridor south of Phalen Boulevard to 4th Street with BNSF Railroad and the Capitol Region Watershed District. An initial meeting with BNSF staff indicated that the railroad is not interested in granting easements or selling portions of the right of way for a trail at this time.



City of St. Paul

Trout Brook Greenway

Railroad Land Ownership in the Corridor

March, 2001

Figure 8

1500 0 1500 Feet

Data supplied by City of St. Paul

Bonestroo Rosene Anderlik & Associates
Engineers & Architects

The railroads are an important part of the history of the corridor and significant landowners for the length of the corridor. The City should continue to work with the railroads as partners in development of plans for the trails and natural communities in the corridor, to improve the ecological function of the corridor as much as possible, while protecting the safety of corridor users and respecting the operating and ownership interests of the railroads.

IV. Plan Implementation

Implementation of this Corridor Plan will be a complex process, involving a large number of partners. Key components of the implementation process following:

Acquisition of Land and Easements

To complete this master plan, acquisition should include the following:

- Canadian Pacific Railroad right-of-way from Arlington Street to the Trillium Site for trail and corridor
- Trillium Site
- Trail Corridor easements or ownership south of the Phalen Boulevard Trail to 4th Street

Complete Plans for Stream and Wetland Restoration and Trails

- Complete current topographic survey (1or 2 foot contours) of the entire corridor

  Current, accurate topographic information is needed to complete engineering analysis for recreating the creek and wetlands, for train design, plant community restoration design, and completion of buildable plans for the Corridor. The City has currently topography at 2-foot intervals for the corridor area south of Case Street. This needs to be completed through the north portion of the Corridor as well. Field surveys may also be needed to locate infrastructure, such as pipe elevations, accurately.

- Complete Phase II soils and contaminants analysis at Trillium Site for proposed land use

  Completion of an accurate soils and contaminants analysis is critical to determine the feasibility and location of the creek feature, and to develop detailed plans for restoration of plant communities on the Trillium Site.

- Complete engineering analysis for restoration of water and features and development of trail components

  When current topographic information and conclusions of the soils/contaminants analysis is available, the next steps in the engineering analysis includes the following:

  - Review and finalize storm sewer/pipe alignment for the selected option(s)
  - Complete a field survey for the selected option(s)

- Complete a hydraulic review and storm water modeling
- Prepare a preliminary storm sewer/pipe plan
- Complete the feasibility study for the stream and wetlands
- Complete final designs for stream and wetlands
- Complete a construction cost estimate
- Complete final designs for trails and construction cost estimate

Complete step-by-step plans for restoration and management of native plant communities within the Corridor, and management plans for natural resources in the Corridor. This includes the following:

- Complete topographic survey, soils and contaminants survey, and other data gathering needed to complete restoration plans
- Determine strategies for removal and control of exotic and invasive species in the corridor
- Determine strategies for soil treatments and amendments where needed to improve restoration
- Complete specific planting plans and seed mixes designed for the restoration sites along the corridor
- Complete specific plans for how restoration will be completed, including personnel, equipment needs, and costs
- Complete short and long-term maintenance plans for the plant communities, as well as the creek and wetlands created in the corridor.
- Complete discussions with landowners regarding trail options south of the Trillium site, and restoration of plant communities in this Corridor.

Complete Final Plan and Cost Analysis

The Final Plan for the Corridor will include detailed, buildable plans for water features and trails, and a natural resources management plan that prescribes specific seed mixes and restoration methods, and long term management and maintenance recommendations for the elements of the corridor. The final plan may also include a detailed cost estimate for the project.

Development of the final plan should be coordinated with agencies and abutting landowners, and include obtaining permits as needed.

Complete Infrastructure Investments needed to implement Master Plan

Infrastructure investments needed to complete the plan may include the following:

Ramp or bridge at Arlington Street for trail

New water control structure at south end of Arlington-Jackson Pond

New pipe to carry water to Trillium Site

Outlet structures for creek and pond at north end of Trillium site

New Sims-Agate Pond and water management structures

New Gateway Trail Bridge

Bridge to carry trail from Phalen Boulevard bridge to Trout Brook Corridor

Repair railroad bridge to carry trail over Fourth Street

Water channel, pipe, road and trail improvements at Fourth Street

Bituminous pavement for trailway through Trout Brook Corridor and Trillium Site

□ Project Phasing

The phasing of the implementation of this Greenway Plan will depend on the acquisition of properties within the corridor by the City. The City is currently seeking funding from the State of Minnesota, private foundations, and other sources to acquire the Trillium Site. If successful, this would then be the likely starting point for implementation of the plan. When topographic survey and soil surveys have been completed, the City may finalize plans for the site, and begin restoration of the creek and natural communities.

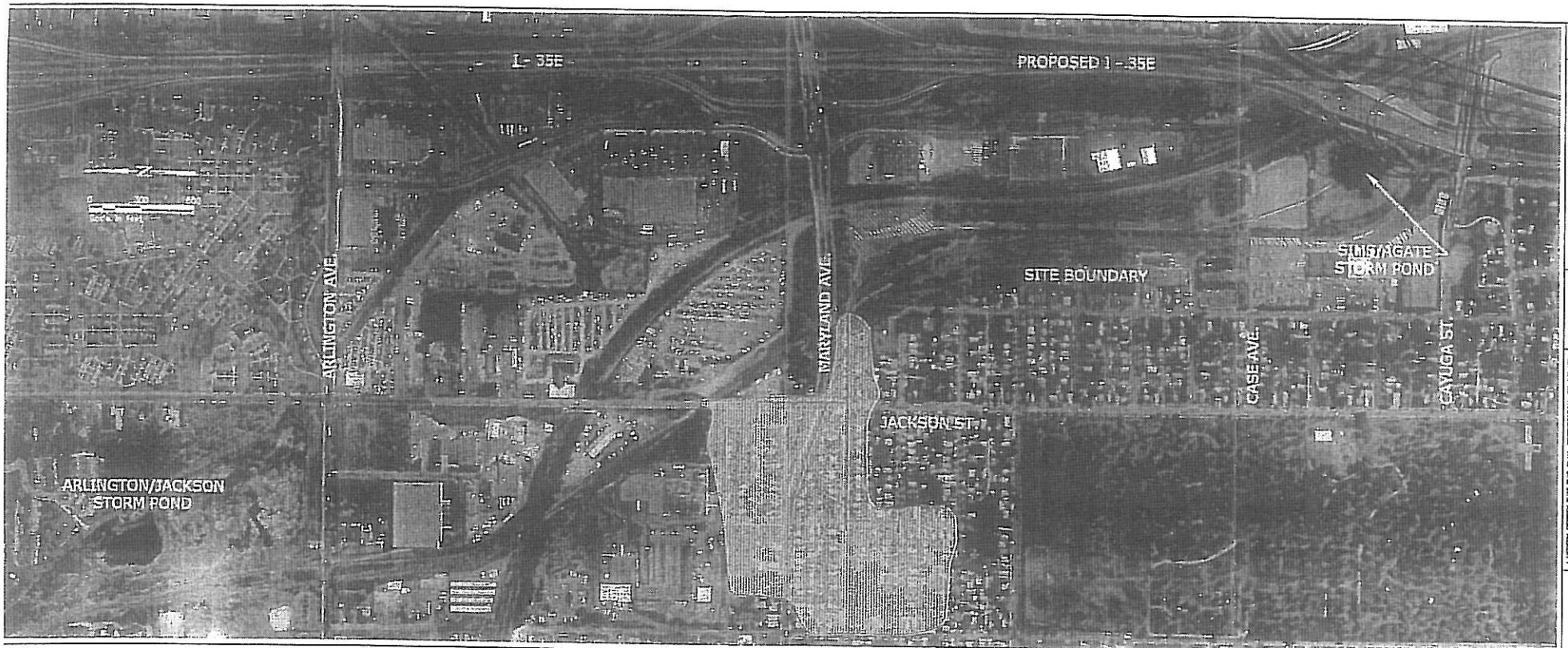
Development of the trails and storm water ponds is likely to occur in cooperation with the Minnesota Department of Transportation, as it implements the plan to re-align I35-E. Some economies of construction may be realized if construction on the Trillium Site is coordinated with the MnDOT.

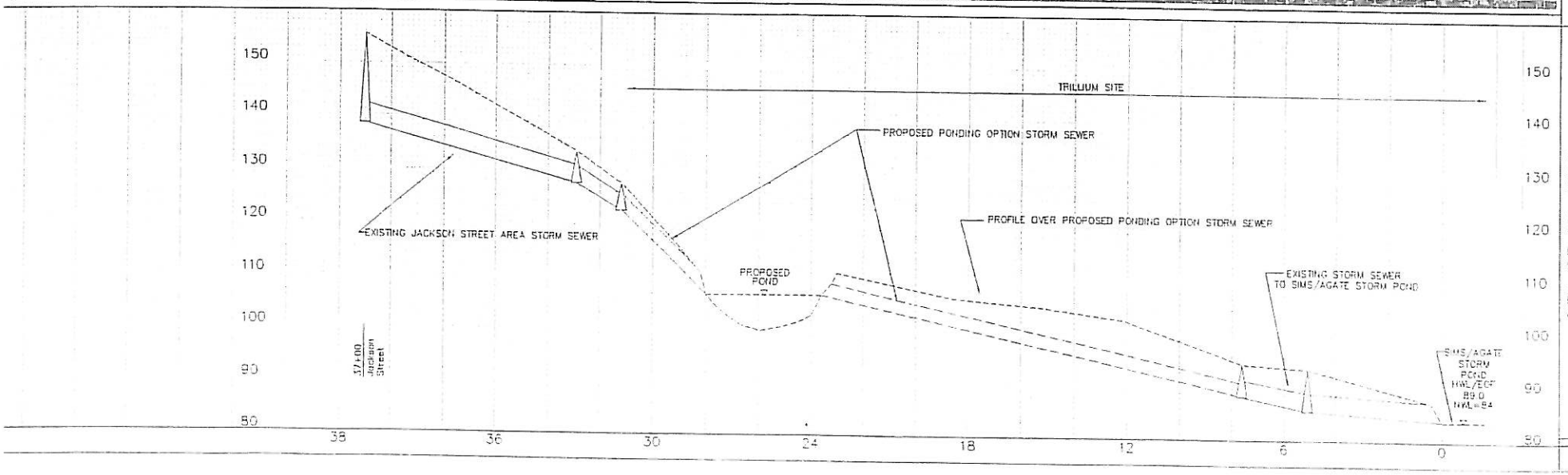
Implementation of other elements of the plan may occur as the City implements the *Community Vision for Lower Phalen Creek*, particularly in the 4th Street Area.

The City may complete the habitat and trail connections through the corridor when the necessary railroad or other private properties within the corridors north and south of the Trillium Site have been acquired.

While implementation of some elements in the plan, such as development of the Trillium Site, could occur rapidly when the site has been acquired by the City, completion of the entire plan may require 10 years or more, depending on the speed of property acquisition and funding available to implement the plan.

APPENDICES





Bonestroo Rosene Anderlik & Associates

CITY OF ST. PAUL
TROUT BROOK GREENWAY
STORM WATER PONDING OPTION

Figure 9

Recommendations by Metropolitan Council Environmental Services

Staff from the Metropolitan Council Environmental Services (MCES), Capitol Region Watershed District, and St. Paul Public Works Department reviewed the Draft Trout Brook Corridor Plan on May 29, 2001. The MCES currently owns the Trout Brook Sanitary Sewer and Storm Sewer Interceptor, and have easements for these utilities in the corridor and on the Trillium Site. The MCES is currently working with the Watershed District to transfer the ownership and management of the Storm Sewer Interceptor to the Watershed District.

- The MCES will need to maintain access to the Sanitary Sewer manholes on the east end of the Trillium Site (just west of the BNRR tracks). The manholes will probably be on the west side of the fence that is recommended to separate the Trillium Site from the railroad. Therefore, the MCES will need to use the paths proposed for the site to access the manholes. As plans are developed further, the manhole locations should be identified and left open for access. Trails and bridges over the creek should be constructed to allow MCES maintenance vehicles to access the manholes when needed.

- The berms proposed in the plan may be constructed over the sanitary sewer pipe, but the weight of material will need to be considered as the berms are designed to avoid impacts to the sewer.

- Aggregate fill was used in the easement area north of the Trillium Site where the new pipe is proposed to bring water to create the creek on the site. These soil conditions will need to be considered as the new pipe is designed.

- The Watershed District needs to be involved in all discussions that involve the Storm Sewer, as they may soon become the owner of this facility. The Watershed District is willing to consider use of their easement for a trail south proposed south of the Trillium Site.