

# Neighborhood Planning for Community Revitalization

## THE LINDEN HILLS BICYCLE AND PEDESTRIAN PATH PROJECT

by David Kelley and Don Johnson

**CURA RESOURCE COLLECTION**

Center for Urban and Regional Affairs  
University of Minnesota  
330 Humphrey Center

**THE LINDEN HILLS BICYCLE AND  
PEDESTRIAN PATH PROJECT**

by David Kelley and Don Johnson

August, 1996

Neighborhood Planning for Community Revitalization (NPCR) supported the work of the author of this report, but has not reviewed it for publication. The content is solely the responsibility of the author and is not necessarily endorsed by NPCR.

NPCR is coordinated by the Center for Urban and Regional Affairs at the University of Minnesota and is funded in part by an Urban Community Service Program grant administered by the U.S. Department of Education.

NPCR  
330 HHH Center  
301 - 19th Avenue South  
Minneapolis, MN 55455

Phone: 612/626-1020  
e-mail: nelso193@maroon.tc.umn.edu

---

**THE LINDEN HILLS BICYCLE AND**

**PEDESTRIAN PATH PROJECT**

Report and Recommendations

---

June 5, 1996

David Kelley and Don Johnson

for Pedestrian / Alternative Transportation to Harriet, a Linden Hills NRP sub-committee

---

## SUMMARY

The effort to create a more bicycle and pedestrian friendly Linden Hills is still in its early stages. This report examines how to take the first major step. There are many choices to be made in creating bike and pedestrian paths; in this report we recommend those we think will serve the neighborhood well, and provide some ideas as to how they can be implemented. In many cases we also discuss alternatives, and what the decision between them means to the neighborhood.

### **Our recommendations address three main points:**

1. Linden Hills should be made a bicycle friendly zone, meaning that all barriers to bicycle use within the neighborhood should be eliminated.
2. The neighborhood should support the existing use of 44th and 43rd streets *by experienced cyclists* as east-west bicycle routes. This can be done by posting “bicycle route” signs, and in some places painting bicycle lanes. Zenith Avenue should be established as the north-south bicycle route both within and through the neighborhood.
3. For others, the neighborhood should provide off-street east-west bicycle and pedestrian paths in the old trolley right-of-way, in the area between Lake Harriet and Abbott Avenue. West of Abbott, the paths should continue along the northern side of 44th street until Chowen Avenue. This recommendation is the most complex, and includes several points:
  - Between Abbott and Xerxes Avenues, the trolleyway paths should be separated, with an asphalt eight foot two-way path for bicycles and a six foot two-way path for pedestrians made of fine crushed rock.
  - From Xerxes Avenue east to where the path joins the Lake Harriet trails, bicyclists and pedestrians must share the trolley right-of-way with cars. A single pedestrian path should be set apart by plantings and landscaped curbs. Where the trolleyway passes underneath the Queen Avenue bridge several improvements should be made.
  - Street crossings should be treated carefully for safety: we recommend throating (a narrowing of the street) and raised street pavement where the trolleyway crosses Xerxes, York, Zenith and Upton Avenues, with York narrowed to one lane where it crosses the trolleyway. Crosswalks should be painted across Abbot and Beard where they meet 44th street. There should be flashing lights activated by bicycles or pedestrians placed on the crossing with Xerxes. The existing mid-block street crossing on Upton Avenue should be moved south as planned to coincide with the trolleyway.
  - Where possible, the trolleyway should be landscaped with grass, wildflowers, bushes, and other ground cover. It should be well lit, and the bicycle path should be kept free of snow in the winter.
  - These improvements should be made incrementally; some can be undertaken immediately, while others will take more time. This is a long term process.

The rest of this report details both *why* these things can be accomplished, and *how*.

---

## CONTENTS

<b>SUMMARY</b>	<b>1</b>
<b>THE GOAL</b>	<b>4</b>
Overview: Why have a path?	4
The trolleyway	4
Project goals	5
<b>THE SPACE</b>	<b>6</b>
East Side	7
Center Section	9
West Side	10
<b>THE PROCESS</b>	<b>10</b>
Building the path	10
Neighborhood support for a path	11
<b>SOLUTION: A BICYCLE FRIENDLY NEIGHBORHOOD</b>	<b>11</b>
<b>SOLUTION: ON STREET BICYCLE ROUTES</b>	<b>12</b>
<b>SOLUTION: AN OFF-STREET TROLLEYWAY PATH</b>	<b>12</b>
Why should the trolleyway be used?	12
Design and “Feel”	14
The route of the path	14
Lighting	15
Markers	14
Parking	15
Street Crossings	16
Crime and personal safety	16
<b>IMPLEMENTATION</b>	<b>17</b>
Costs and funding	17
Government grants	18
Private funding	19
Fundraising	19
Designation in plans	20
Historic designation	20
Ownership and maintenance	20
<b>THE NEXT STEP</b>	<b>21</b>
Implementation by sections	22
Step one	22
Step two	22
Following steps:	22
<b>BIBLIOGRAPHY</b>	<b>23</b>

---

## THE GOAL

### *Overview: Why have a path?*

Linden Hills is one of the most pleasing places to live in all of the Twin Cities area. Its graceful houses, tree lined streets, convenient and prosperous neighborhood businesses, and access to Lake Harriet have resulted in a healthy neighborhood in which home values have been rising for many years. Recently, however, neighborhood residents have experienced an increasing amount of automobile traffic in the neighborhood. The causes of this are many and larger than the neighborhood itself: an increase in the amount of automobile use by Americans in general, the trend for retail stores to be located in larger centers serving wider areas, the suburbanization of jobs, and so forth. The resulting increase in auto traffic, however, threatens the ability of Linden Hills to remain a safe, quiet, walkable and livable community.

As a result of this threat, Linden Hills residents have become concerned with how to limit the effects of auto traffic, and made traffic calming a major goal in their Neighborhood Revitalization Program (NRP) plan, sponsored by the city of Minneapolis and completed in 1995. A traffic calming project is currently underway, and in February 1996 two interns were hired through a US Department of Education grant to study the possibility of using the Linden Hills trolleyway as a bicycle and pedestrian path. This report is the result of that study.

We believe that the provision of safe and pleasant routes for walking and cycling in Linden Hills

- can encourage people to leave their cars at home when traveling within the neighborhood
- can increase residents' ties to and care for the neighborhood
- can encourage a wider bicycle- and pedestrian-friendly city and metropolitan area, and
- can help sustain the environmental, economic, and social health of the neighborhood.

We believe that the trolleyway can and should be the central piece in a neighborhood bicycle and pedestrian network, and that it can provide a new center and a new green space for the community.

This report, and the drawings and plans that accompany it, detail how Linden Hills can create an east-west bicycle and pedestrian route using the trolleyway and neighborhood streets. It will both provide options and make recommendations, but in the end neighborhood residents will have the responsibility of creating the path they want.

### *The trolleyway*

For nearly a hundred years, Linden Hills was built and sustained by trolley. The area truly became a year-round neighborhood instead of a resort village only when the trolley line arrived at Upton between 43rd and 44th streets in 1900. For years, the Upton and 43rd Street business district was known as "trolleytown." When the trolley was dismantled in 1954, Linden Hills continued to thrive, but as people have come to rely more and more on their cars, the successful businesses and desirable housing in the neighborhood have had to increasingly compete for space with roads and parking spaces. As part of its effort to try and restore the balance between cars, places, and people, the neighborhood is now turning again to the trolleyway which was the

means of its growth. The trolleyway, currently lying vacant, can be “recycled” to become a transportation route once more.

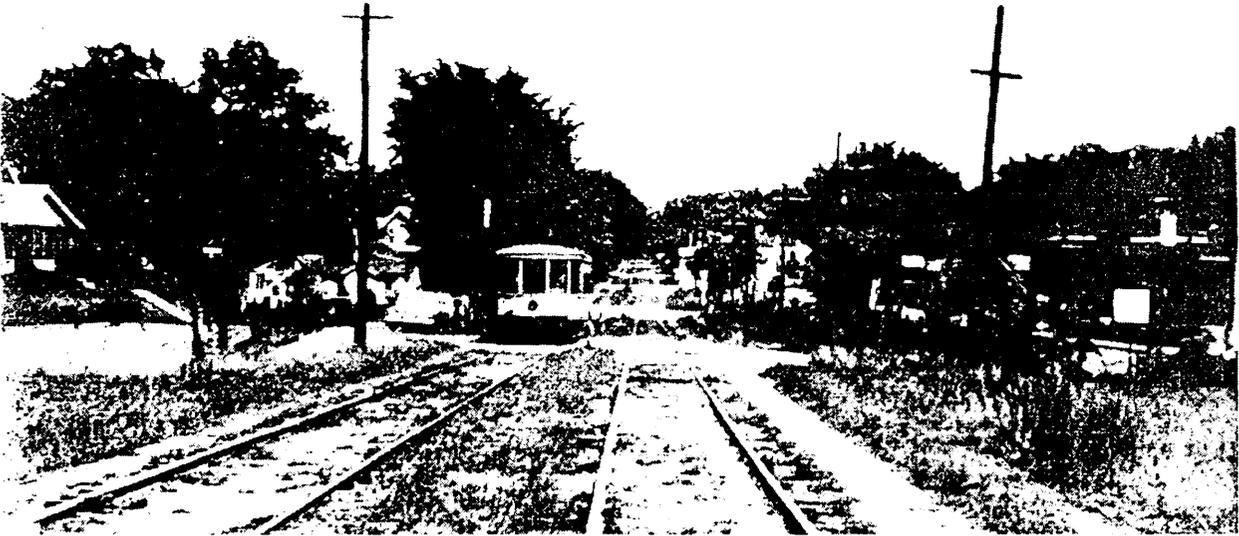


Photo courtesy Minnesota Transportation Museum

**The Trolleyway in 1954, looking east from Drew Avenue**

The vision of what a transportation-balanced Linden Hills could be is constantly changing. But there is general agreement that the trolleyway should be part of it. The trolleyway can connect neighborhood homes with parks, businesses and the lake. It can be attractively landscaped and well lit. It can offer paths for pedestrians and slower bike riders (although fast and experienced riders will prefer a through street.) Perhaps most importantly, it can improve the neighborhood by being a place in which people will enjoy traveling free of the noise and threat of cars. People already stroll, walk their pets, and bike in the trolleyway; we hope that in the future more will do so. The goal is to provide not only an avenue, but a new amenity for the neighborhood.

### ***Project goals***

This project was started with several goals in mind, put together from reading the neighborhood survey and NRP plan, and from talking with neighborhood residents. They were:

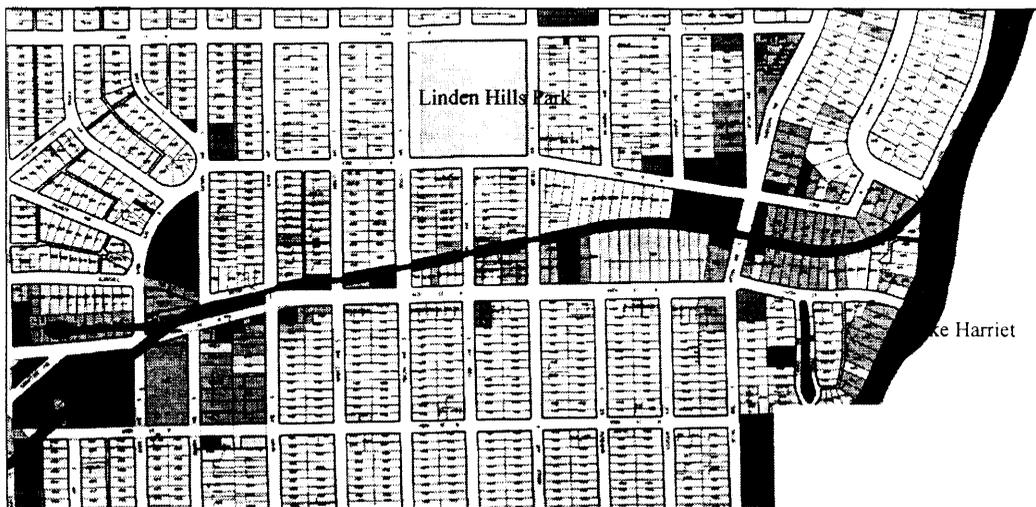
- to provide easier, safer, and more pleasant walking and biking in the neighborhood
- to protect and enhance the trolleyway as a public space for the neighborhood
- to improve the quality of the natural and built environment in the neighborhood
- to create a new neighborhood center that would complement Linden Hills’ existing amenities
- to strengthen connections to and from the Lake, the business districts, and other neighborhood destinations
- to reduce automobile use within the neighborhood, and to complement the traffic calming effort that has been underway at the same time
- to support neighborhood businesses
- to maintain as much as possible existing amounts of parking
- to work with residents and property owners along the trolleyway

These goals are broad and flexible. We believe they are not contradictory, and that this project can result in a positive outcome for everyone who is involved, whether neighborhood resident, business, or property owner.

---

## THE SPACE

The trolleyway enters Linden Hills from the north and runs along its eastern edge, parallel to the shore of Lake Harriet. It turns west at Queen Avenue, and runs west through the neighborhood between 43rd and 44th streets. It originally crossed 44th street at about Chowen Avenue, but now disappears at Beard Avenue, after which the land it occupied was sold and built on.



**The Historical Trolleyway. The sections west of Chowen Avenue now no longer exist**

The trolleyway is a very short right-of-way, only eight tenths of a mile where it runs through the neighborhood. However, it lies in the heart of the neighborhood, and it has had far-reaching effects on neighborhood life. In its small space the trolleyway changes quite a bit; nearly every block is different in some way from the ones preceding and following it. Each thus offers different challenges and possibilities. Because of these differences, a trolleyway path cannot be a space that is the same from beginning to end. While there can be elements that tie it together, the path should be allowed to change to reflect its surroundings and uses.

In the following discussion of the trolleyway, maps have been turned sideways to fit on the page. In each, north is on the right and west is on top.



### East Side

On the east of the neighborhood lies perhaps the most important destination of an east-west pedestrian and bicycle route. Lake Harriet. The trolleyway runs alongside the lake, and in this section is still in use. North of the Queen Avenue bridge, the original 50 foot right-of-way has been preserved and is leased to the Minnesota Transportation Museum (MTM,) which uses it to run three restored trolleys. The trolleys are run from the barns underneath the bridge (1) to the archery ranges on the southeastern side of Lake Calhoun, stopping at the reconstructed Lake Harriet station on 42nd street. A stair connection (2) exists between the trolleyway north of the bridge, the trolleyway south of the bridge (which is several feet higher) and Queen Avenue.

West of the bridge, a portion of the right-of-way (3) has been vacated back to the two adjacent property owners, and is no longer public. One of these, a homeowner, has built an attached garage which occupies a large amount of the right-of-way. Neither owner opposes the creation of a path, and

both are open to an easement allowing public passage, but both have concerns about parking

Continuing west, the right of way is a public alley, used by residents to access parking behind the apartment buildings along 43rd and 44th streets. The public right-of-way in this section, west to the gate behind the Linden Hills Co-op, is only sixteen feet wide. The remaining 34 feet has been sold to the adjacent property owners on both sides, but remains unbuilt on, and the original width of 50 feet remains in fact if not in law. Although much of the traffic which uses this alley could be diverted to alternate exits, the city attorney determined in 1980 that the alley could probably not be closed to auto traffic. This may or may not still be true.

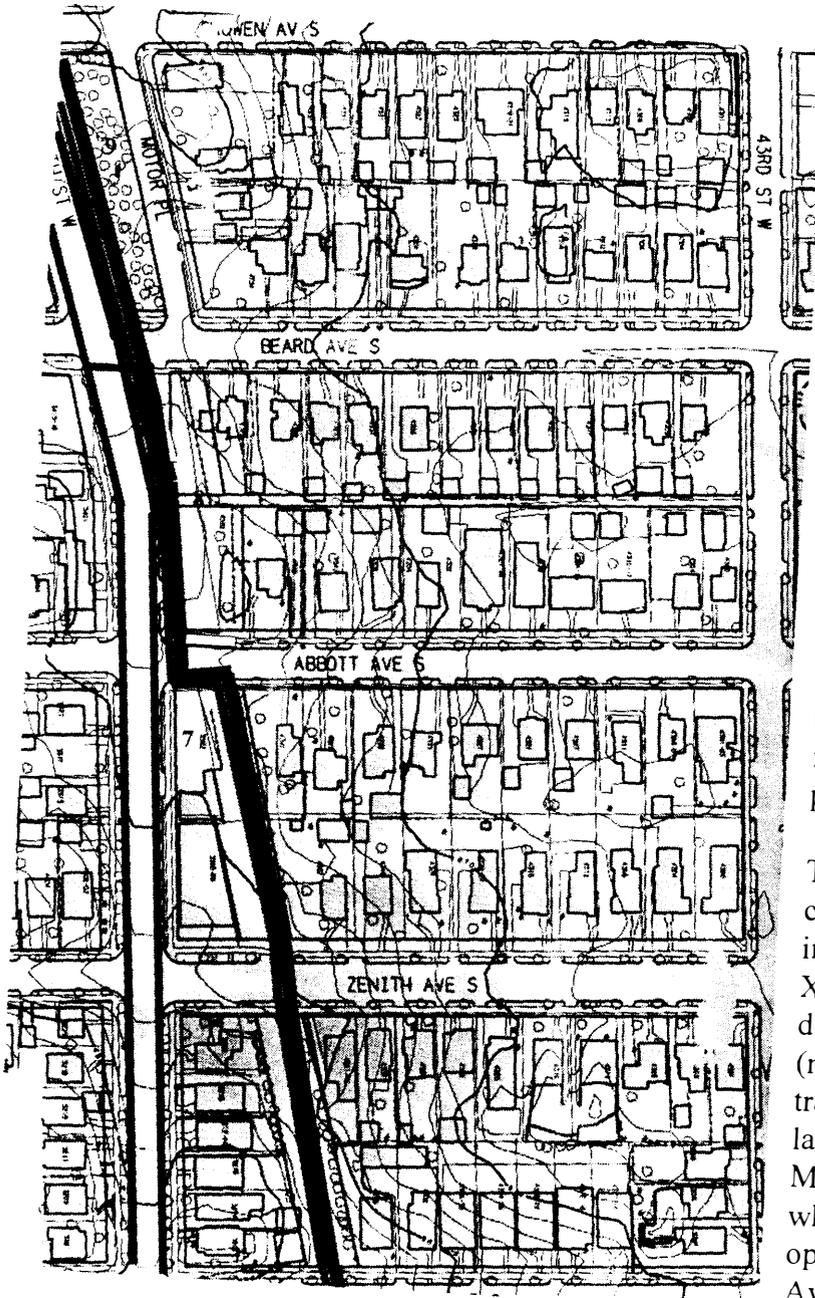


The trolleyway crosses Upton Avenue between 43rd and 44th streets (4), in the heart of Linden Hills' original, most important, and very successful business district. This is another crucial destination within the neighborhood. Here the right-of-way's most important function currently is to provide parking. However, most of the parking spaces that line its edges are legally non-conforming (sometimes grossly so), and traffic flows are heavy, confusing and potentially hazardous. This area has been the site of several traffic calming experiments, including a pedestrian crosswalk just north of where the trolleyway crosses Upton.

To the west of the parking lot that serves the Linden Hills Co-op (5) is a gate (6), which was installed to prevent vehicles from driving on the trolleyway from Xerxes to the business district's parking lots. This marks one of the major transition points along the length of the trolleyway.

## Center Section

In the middle of the neighborhood the trolleyway retains its original 50 foot width, and for the most part it is used only as a walking and biking path. From the gate to Xerxes Avenue, however, a badly paved alley exists. This is used by a small number of neighborhood residents for access to garages, and by garbage trucks and potentially by emergency vehicles. The south side of the trolleyway for a hundred feet is marked by a wall which is a target for graffiti, as are some of the garages in this section.



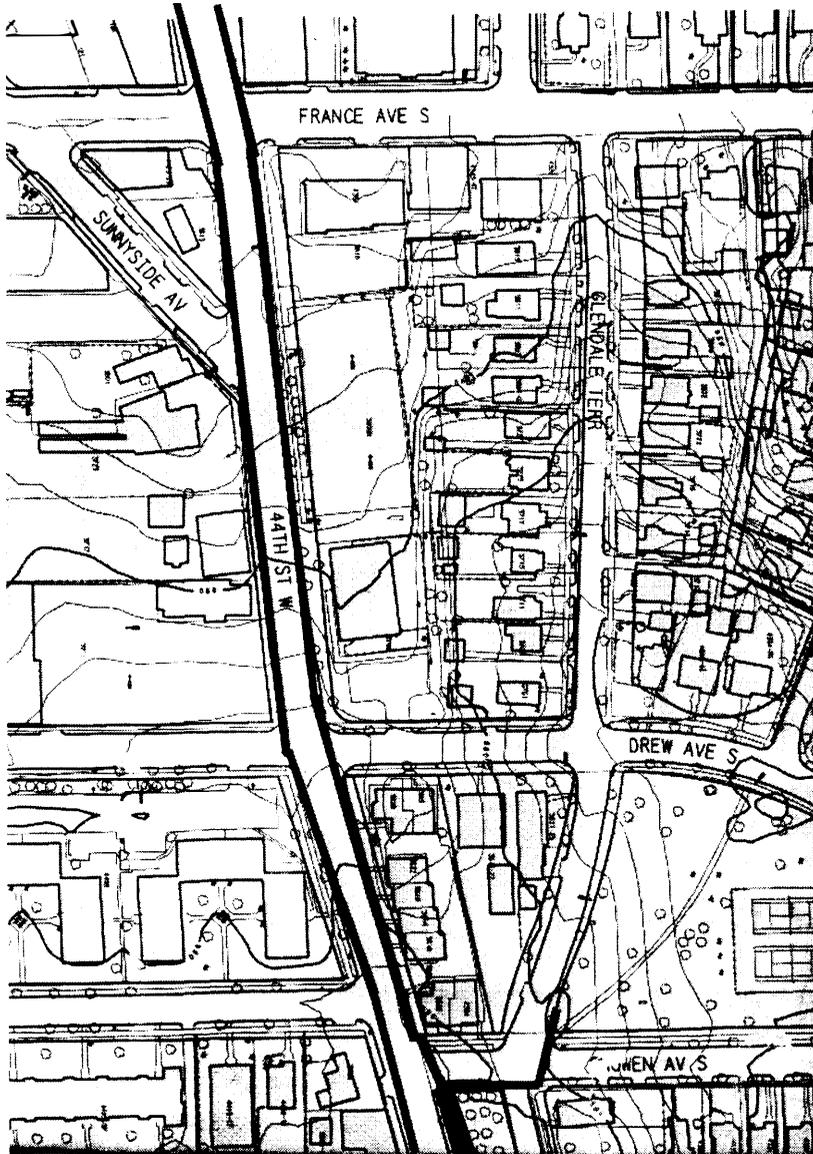
In the two blocks between Xerxes, York, and Zenith Avenues, the trolleyway is covered with grass and protected by highway guardrails from vehicular use. Railroad spikes and ties can be seen embedded in the ground, and there is a path worn into the grass by people who use the trolleyway for walking, biking or exercising their pets.

The areas to the east and west of Xerxes Avenue drain poorly. Runoff from the higher areas to the south either pools on and near the trolleyway or runs into properties to the south. In the winter, sheets of ice form where the water has pooled.

The four streets the trolleyway crosses in this section vary widely in the amount of traffic they carry. Xerxes Avenue is the busiest; it is a designated collector street (meaning that it is intended to carry traffic from neighborhood streets to larger arterial streets) and a Municipal State Aid highway, which limits some of the design options the city has over it. York Avenue, on the other hand, comes to a "T" intersection half a block

north of the trolleyway at Linden Hills Field, and carries little traffic. Zenith Avenue (which is Linden Hills' and Fulton neighborhood's designated north-south bicycle route) and Beard Avenue fall in between these two in amounts of traffic.

Between Zenith and Abbott Avenues, the trolleyway runs behind a group of stores that face 44th Street. On the eastern side of this block the right of way is almost completely paved, although it does not seem to be used for parking. On the western side of the block, behind Dunrite Auto (7),



the trolleyway has been narrowed to 40 feet where the business has expanded.

Between Abbott and Beard Avenues, the right-of-way has become a city-owned parking lot (8), leased to the businesses across 44th Street.

### **West Side**

West of Beard Avenue, the trolleyway exists as a small lot of green space (9) before disappearing entirely after Chowen Avenue. There is no obvious route west for a path to follow. There are, however, several possibilities for routes that could reach Waveland Triangle Park, one block northwest at Chowen and Glendale Terrace, and/or the businesses along 44th and France Avenue. These will be explored in the section dealing with implementation.

---

## **THE PROCESS**

### ***Building the path***

The Linden Hills path project is a small one when compared to other recent local bicycle trail efforts such as the 29th street Greenway or the Cedar Lake Trail. However, it is complex, involving many different interests and requiring a good deal of communication between them.

This document and the plans it represents are a product of discussions between not only neighborhood residents and businesses, but also the Minnesota Transportation Museum, the city Transportation and Parks and Recreation departments, City Council member Steve Minn, and the Hennepin County Parks Department. In addition, suggestions and input were requested from many different people and groups, in the neighborhood, city, state, and nation, that had experiences to share.

### ***Neighborhood support for a path***

A survey of neighborhood residents conducted as part of the NRP process revealed strong support for alternative transportation both in general and on the trolleyway in particular. Specifically, 93% of respondents were in favor of promoting a pedestrian-friendly environment, 71% were in favor of implementing a bicycle transportation system, and 62% were in favor of creating a pedestrian/bicycle trail on the trolleyway.

As part of the NRP action plan, the NRP Steering Committee drew up a vision statement intended to guide the neighborhood's planning process:

- Preserve the health and vibrancy of our natural environment.
- Honor and celebrate the richness of our history and heritage.
- Improve the aesthetics and usability of our public spaces.
- Provide pedestrian friendly transportation to reduce traffic and parking problems.
- Preserve the local character of our commercial districts, while ensuring their economic health and the diversity of their offerings.
- Build a greater sense of community through the empowerment of Linden Hills residents, improved communications and improved governmental relations.

The creation of bicycle and pedestrian paths using the trolleyway addresses all of these goals.

PATH has met as a group four times during this study to discuss the issues surrounding the creation of a bike/ped path on the trolleyway. Three of the meetings were publicly advertised in the Linden Hills newsletter and the Southwest Journal, one of those (as well as the final presentation meeting) was advertised through postcards sent to nearby residents and property owners, and one was a working meeting to create specific designs.

---

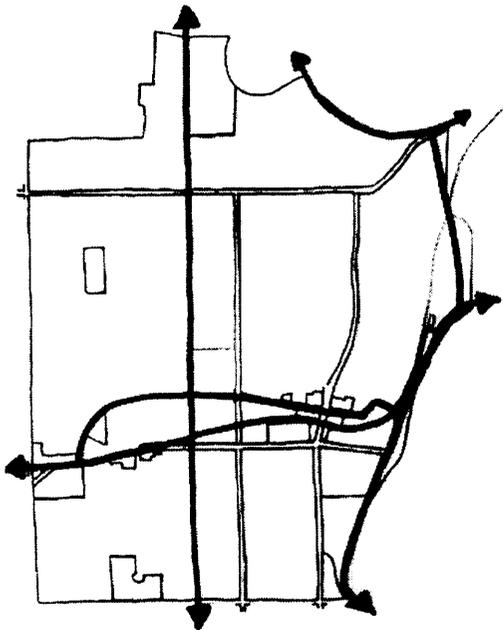
## **SOLUTION: A BICYCLE FRIENDLY NEIGHBORHOOD**

For alternative transportation to be a viable alternative within the neighborhood, people have to be able to get everywhere they need to go by bike or on foot. Establishing a single off-street path will not attract users if they cannot reach it safely and conveniently from their houses. For this reason, our first main proposal is that Linden Hills be established as a "bicycle friendly zone." The bicycle friendly zone is a concept that is being implemented in the Marcy-Holmes neighborhood as part of the University of Minnesota's ambitious bicycle plan. It means that a specific designated area of the city is blanketed by specialized bicycle facilities which are integrated in a complete network. Bike travel is made not only possible but easy and attractive on every street - just as driving is today. This kind of prioritizing can make bicycle transportation a major part of Linden Hills life.

Luckily, in Linden Hills this does not entail major engineering projects. Most neighborhood streets are already well suited for bicycling. All that needs to be done is to have a complete assessment done of Linden Hills streets in terms of how they treat bicycle riders, and a list made of needed improvements. This could even be a good excuse for a neighborhood event, a Linden Hills Ride to “beat the bounds,” as the traditional phrase goes. As an example, it would be easy to install a short stretch of pavement on 45th Street to connect the Drew Avenue segment to the Chowen Avenue segment, without opening it to cars. The path worn in the grass in this spot proves that people already use this route; it should be easier for them to do so.

**SOLUTION: ON STREET BICYCLE ROUTES**

In addition to the neighborhood wide network of bicycle friendly streets, Linden Hills needs to have good bicycle links for longer trips into and out of the neighborhood. Bicycle commuters need a fast, safe and convenient way to get to the new bicycle highways that are being constructed in Minneapolis such as the 29th street Greenway, the Cedar Lake trail, and the Kenilworth Trail, as well as the existing Lake Harriet trails.



We propose that the neighborhood support the many cyclists that are already using 44th and 43rd Streets by designating an east-west bicycle route that starts at 44th and France, turns north at 44th and Drew, east on 43rd and Drew, and follows 43rd through the business district, then Linden Hills Boulevard and Queen Avenue to Lake Harriet. 44th Street should be striped with bicycle lanes until Beard Avenue; the street narrows at Zenith, preventing further striping. 43rd street is also too narrow to stripe; instead it should be signed as a bicycle route.

Linden Hills and Fulton neighborhood to the south have proposed jointly designating Zenith Avenue as a north-south bicycle route. This should be pursued.

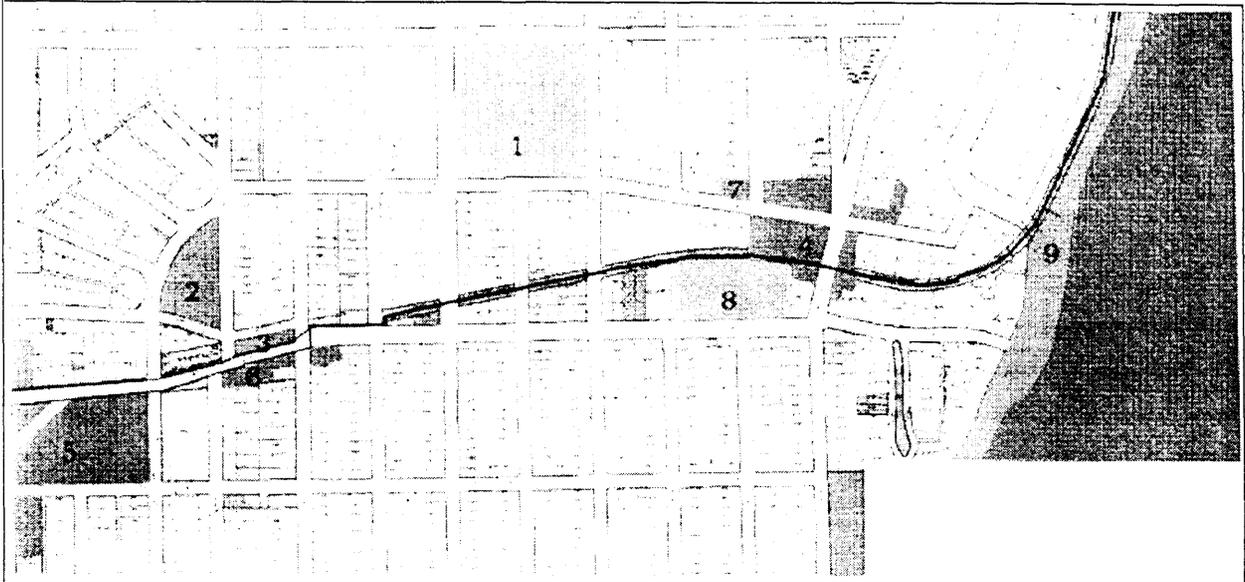
42nd/43rd and the trolleyway are alternate routes

**SOLUTION: AN OFF-STREET TROLLEYWAY PATH**

*Why should the trolleyway be used?*

We feel that developing a path on the trolleyway offers a unique opportunity for the neighborhood which can complement the designation of on-street bicycle paths. Both 44th and 43rd streets are narrow, and 44th in particular is fast and busy. Many people do not feel safe biking on them, or allowing their children to do so. A trolleyway path would present them with

an off-street alternative. In addition, the trolleyway has unmatched access to Linden Hill destinations, since they grew up around it. It is quiet, pleasant, and free from cars. Finally, a trolleyway path would show a commitment to development that is environmentally friendly and that does not increase traffic in the neighborhood.



For the path to be effective, it must link Linden Hills destinations. The more neighborhood and regional destinations that are connected, the more popular and useful the path will be and the more potential it will have to reduce auto traffic. The trolleyway has excellent access to most of Linden Hills' major destinations.

A trolleyway path would be protected from fast traffic, and completely free from cars in some sections. It would be a safe corridor for children and families, the elderly, and others with limited mobility. It would be more attractive than an on-street route. In addition, the trolleyway is quite wide in sections, which not only makes more path designs possible but also allows for substantial landscaping. The path could become not only a corridor but a parkway, once again encouraging its use.

**Important Linden Hills Destinations**

1. Linden Hills Park
2. Waveland Triangle Park
3. 44th and Beard Pocket Park
4. 43rd and Upton Businesses
5. 44th and France Businesses
6. 44th street Businesses
7. Linden Hills Library
8. St. Thomas Church and School
9. Lake Harriet

But there are other reasons for using the trolleyway as well. It is an important historical site for Linden Hills; the streetcar was instrumental in making the neighborhood the kind of place it is. The creation of a trolleyway path could make this history more clear, at the same time once again serving as a transportation corridor. The trolleyway has the potential to become a real and important piece of the neighborhood, in a way that no on-street corridor, no matter how safe and pleasant, could be.

A trolleyway path does offers several challenges that should not be minimized. Although it is separate from traffic, the trolleyway's mid-block street crossings are potentially more dangerous

for bicyclists and pedestrians than crossings on corners would be. Crossings are frequent enough that skilled and experienced cyclists are very likely to stay on 44th Street and the other east-west streets they use now, rather than using a new path on the trolleyway. Finally, development of the trolleyway is a complicated project, particularly where it moves through the Upton and 43rd business district, and would certainly be more expensive than simply putting bicycle lane stripes on an east-west street. We feel, however, that these difficulties are not great compared to the long term benefit to the neighborhood.

### ***Design and “Feel”***

As noted above, the trolleyway changes from block to block, and a trolleyway path must do the same. In the eastern portion of the trolleyway, the major issue is cars and parking; a design for the path has to find a place for bicyclists and pedestrians and buffer them from traffic. In the western portion, the feel of the path is the major concern. Many neighborhood residents spoke to us about the beauty of the trolleyway as it exists now: its greenery, quiet, and almost private atmosphere. Others spoke to us about abandonment, litter and dumping, graffiti, and dog waste. The trolleyway path needs a design that can preserve the one while addressing the other.

A major consideration of how the path feels and is used is the material it is constructed out of. In the western parts of the trolleyway, the path will share space with concrete and asphalt alleys. In the eastern parts, however, there are several choices that differ in speed allowed, durability and need for maintenance, price, and feel. We recommend asphalt for the bicycle path, which is relatively inexpensive, requires little maintenance, and gives a smooth ride. For the pedestrian path, we recommend fine crushed limestone. This material is high maintenance, requiring monthly rolling and yearly grading, but it is cheaper than asphalt, allows stormwater to drain into the soil, and is a pleasant and natural surface to walk on.

### ***The route of the path***

On the pocket park between Chown and Beard Avenues, and on the unused sections of the trolleyway between Zenith and Xerxes Avenues, we recommend separated bicycle and pedestrian paths that are eight and six feet wide, respectively. Between Beard and Zenith Avenues, it will probably be necessary for the paths to be together, with stripes to separate traffic. On the section of the trolleyway between Xerxes and the gate, we recommend that the paths be together, but separate from the necessary 12 foot alley.

East of the gate behind the parking lot, we recommend that the path run next to the St. Thomas parking lot, either above or below the existing wall. We believe that space can be found between the business parking, church parking, and church playground space, although the retaining wall might have to be moved south. It should not be necessary to remove church parking to do this, and of course the church will need to be a part of the process of finding a solution. In the alley between stores on both sides of Upton, we recommend parking be changed to 90 degree (from the current 45 degree) and only be on one side of the trolleyway. About six spaces would be lost by doing this. Continuing east, we recommend a separated pedestrian trail, with bicycles using the same alley as cars. We feel that traffic is low enough that this is not a large risk. If the

path is popular, the neighborhood can in the future look into finding other ways for the apartment building residents to reach their parking, and close the alley to car traffic.

Where the trolleyway passes underneath Queen Avenue, we recommend installation of a metal groove on the stairs, so that people can walk their bicycles up and down. The stairs themselves are not in good shape, and should be replaced when practicable. When this is done, a handicapped ramp should be installed. The neighborhood should work with MTM to remove the barbed wire fence surrounding the trolley barns, and eventually to have the barns moved to a different location altogether. In the meantime, people will have to walk their bikes underneath the bridge and across the trolley tracks. Stairs should be provided at this point down to the paths surrounding Lake Harriet, and a combined bike/pedestrian path should continue, on the half of the trolleyway not used by the trolley, to 42nd Street and the Lake. A buffer of some sort, a short wall or bushes, should be provided between the trolley right-of-way and the path.

### ***Lighting***

Lighting is a practical necessity so that the path can be used at night, for personal safety reasons, and to discourage loitering. However, the style of lighting and lighting fixtures provided will also help determine the feel of the trolleyway. We suggest three lights per block along the length of the trolleyway, one light in the middle of each block and one on each side of every crossing. These can be simple wooden posts with one or two lamps on top, hooded to protect neighbors from glare. This kind of design is reminiscent of the railroad history of the trolleyway, and does not have as urban a feel as streetlights would.

### ***Markers***

We suggest the placement of markers at each end of the trolleyway, and perhaps at one or two locations in the middle. These could be small kiosks or signs with historical information about the significance of the trolleyway, for those who are interested. In this way the new and old functions of the trolleyway as a neighborhood transportation corridor can be linked.

### ***Parking***

Safe and pleasant corridors will not be enough to encourage people to bike if there are no safe and convenient places to park bicycles near destinations. While there is bike parking in the Upton and 43rd business district, it can be improved. Bike parking should be in the form of large metal loops, such as those in front of Creative Kidstuff, that can be locked to bicycle frames. Bike racks that only accept the front wheels of bicycles will not be used by many bicyclists due to fear of theft. In general, bike riders will lock their bicycles to the nearest available object to their destination, so it is best if that object is a bike rack. However, racks should not extend into the path of pedestrians. When possible, they should be covered. For cyclists that intend to stay long periods of time, such as business district employees, bike lockers may be useful.

### ***Street Crossings***

The places where the trolleyway crosses city streets demand special attention, particularly since the crossings are so close to intersections. Crossing designs should be taken very seriously to prevent drivers failing to notice the bicycle/pedestrian crossings. The crossing at Upton Avenue has already been designated a pedestrian crossing, as part of the traffic calming measures undertaken in the Upton & 44th business district. This crossing should be moved south slightly as planned, so that it corresponds with the trolleyway.

The street crossings at Xerxes, York, Zenith, and Abbot Avenues, however, will need to be treated to make them safe for people using the trolleyway. We recommend a combination of several features. The trolleyway should be marked as a pedestrian crossing and zebra striped, with the possible addition of a yield sign. To make the crossings more visible, all four should be throated - that is, the roadway should be narrowed to the minimum width allowable, encouraging drivers to slow down and be attentive. On Zenith Avenue, instead of throating a center median should be provided, which will not interfere with cyclists heading north or south. On lightly-traveled York Avenue, the roadway should be narrowed to a single lane. In addition, on all four crossings the surface of the trolleyway should be raised above the level of the roadway, which will both make it more visible and further encourage cars to slow down. On these raised sections of the roadway the pavement can be made a different color by embedding rock chips in it, and reflective tape can be added. Finally, on Xerxes Avenue a flashing sign should be added to increase visibility, which could be activated by pedestrians or bicyclists on the trolleyway.

In addition to making street crossings safer, the throating and roadway surface raising will help to tie the separate blocks of the trolleyway into a single long green avenue running the length of the neighborhood. The narrowing of York Avenue to one lane will furthermore help connect the trolleyway to Linden Hills park, only a half block to the north.

### ***Crime and personal safety***

Paths such as the trolleyway have never been linked to crime; in other cities studies have uniformly shown a reduction in crime after construction of a path. In our current urban environment, however, personal safety is always an issue. Residents near the trolleyway have reported loitering and even disturbances, and graffiti is evident in several places. These problems can be addressed to some extent through the design of the path. Adequate lighting is a necessity, and can be attractive and welcoming as well. Clear lines of sight through each block of the trolleyway will ensure that people using it will always be visible to others; this may limit the kind of landscaping that can be done. While neighbors adjacent to the path have a right to privacy, when possible it is a good idea for there to be windows facing onto the path. Finally, a well-maintained public area sends the message that residents take care of and protect it. This will make the path an unattractive area for criminals. It is important to remember that when personal safety is concerned, other people are the greatest resource.

## IMPLEMENTATION

### Costs and funding

Any kind of engineering project is expensive. The neighborhood can choose designs that keep costs down, but there are limits to cost minimization. Proper street crossings, for example, are necessary to ensure the safety of trolleyway users and cannot be scrimped on. As the budget shows, implementation of the recommendations in this report will probably cost from \$100,000 to over \$130,000. Aside from basic construction, the factors most directly affecting the cost of the project are the treatment of street crossings (especially throating, and flashing lights) and lighting.

Preliminary Budget for Trolleyway Path and Bike Routes			price per	?	total
<b>Assumptions</b>		<b>Path construction</b>			
asphalt required	10500 sq. feet	grading & excav.	\$5.00 sq. yd.		\$10,833
crushed rock required	9000 sq. feet	crushed limestone	\$0.75 sq. ft.		\$6,750
area of ROW (Beard - gate)	0.76 acres	3" type 41 bituminous	\$1.00 sq. ft.		\$10,500
# signs needed	30	sawcut pavement	\$2.04 ft		\$2,040
length to sawcut	1000 feet	common excavation	\$1.63 sq. yd.		\$120
area to excavate	2000 sq. ft.	Striping	\$650.00 block		\$1,950
# blocks to stripe	3	<b>Crossing improvements</b>			
length of guardrail to remove	90 feet	Removing guardrail	\$1.38 foot		\$124
# flashers needed	1	Signage	\$100.00 each		\$3,000
# trees needed	15	flashers	\$15,000.00 each		\$15,000
# lights needed	14	throating	\$7,500.00 each		\$30,000
# crossings to throat	4	painting			?
		pavement raises			?
		<b>Landscaping</b>			
		clearing	\$480 acre		\$364
		grubbing	\$480 acre		\$364
		trees	\$150 each		\$2,250
		<b>Lighting</b>	\$1,500 each		\$21,000
		<b>Subtotal</b>			<b>\$104,295</b>
		Contingency (20%)			\$20,859
		Contract Administration (3%)			\$3,129
		Engineering (5%)			\$5,215
		<b>Total</b>			<b>\$133,497</b>

In addition to the capital funds needed to improve the trolleyway, maintenance funds will be needed to keep it in good condition. If, as we recommend, the city takes responsibility for the trolleyway these costs will be covered in general city maintenance, but if the Park Board or other agency takes responsibility, the neighborhood may have to provide maintenance funds.

While Linden Hills through the Neighborhood Revitalization Program (NRP) now has access to money for neighborhood projects, the trolleyway project may require more than the neighborhood can spare. Thus, serious attention should be given to raising money for the project. Three main sources of money are available: government grants, private foundations, and the neighborhood itself. All three possibilities should be explored, not only because it will

improve the chances of raising the needed amount of money, but also because it is easier to raise money when funders see that all options are being pursued and that others have supported the project in question.

### ***Government Grants***

The NRP program means that Linden Hills has access to money of its own. \$15,000 was allocated in 1996 for the trolleyway project from these funds, and significantly larger sums of money may be available in future years. Of course, there are opportunity costs: NRP money spent on the trolleyway is money that can't be spent on other neighborhood projects. On the other hand, other neighborhood projects, such as tree planting, street crossings, and lighting, have money that can be used to improve the trolleyway while achieving other neighborhood goals.

Other governmental money is also available. Hennepin County is interested in improving bicycle facilities, and has allocated \$100,000 in the next year for this purpose. These grants require a 100% local match, which would have to come from NRP money. Linden Hills may have a good chance of receiving some of this money: 44th street is designated as a bicycle route in the forthcoming Hennepin County bicycle plan, and conversations with County planners reveal that they are interested in projects such as the trolleyway path that provide parallel off-street facilities for all levels of riders. The neighborhood should pursue this possibility immediately.

The most likely State funds we have been able to identify are the grants given by the Legislative Committee on the Minnesota Environment (LCMR.) Unfortunately, they are awarded biannually, and the next deadline will not be until early 1998. Also, the Committee meets beforehand to determine priorities and identify the type of project they will be looking to support; thus the trolleyway may or may not be in a position to receive funding.

Federal funds have in the recent past supported many alternative transportation projects. Most of this money has come through ISTEA (pronounced "ice tea,") the Intermodal Surface Transportation Efficiency Act of 1991, which radically changed how the federal government makes highway funds available to states. It supports multi-modal projects (that is, projects involving more than one form of transportation) and the encouragement of alternative forms of transportation. Unfortunately, almost all ISTEA funds are committed for the next several years, and in the current political climate the bill's future remains uncertain. However, the state Department of Natural Resources does disburse ISTEA money as part of the National Recreational Trails Fund. In 1996, this fund had about \$250,000 to disburse in \$5,000 to \$50,000 grants, and a pre-application was made for the trolleyway project. The final application deadline is July 12, 1996. An application for these funds should emphasize the trolleyway path's recreational and historical interpretation aspects, and the fact that it links Linden Hills' neighborhood parks to the Lake Harriet trails.

Several trails have provided easements to utilities or telecommunications firms to lay fiber optic cable or other infrastructure, in return for an annual fee. Although the trolleyway is of course city-owned, and rather short for such a right-of-way to be useful, this option should be explored.

### ***Private funding***

There are a great number of private foundations that support community projects. Although most of these focus on human service projects and social issues, some, such as the Marbrook, Northwest Area, McKnight, Arco, Joyce, and Martin Foundations, have given in the past to projects that improved neighborhood transportation or environmental quality. Others, such as the Medtronic Foundation, support projects their employees are involved in, or may be interested in particular communities like Linden Hills.

Foundation money may be difficult to successfully apply for, for several reasons.

- Many foundations specifically target troubled neighborhoods, which Linden Hills thankfully is not.
- The trolleyway project does not easily fit into the categories that foundations are used to seeing and funding, such as economic development, environment, and community building - although development of bicycle and pedestrian paths are all of these.
- Many foundations specifically exclude capital projects from funding, and may feel that projects involving transportation infrastructure are the responsibility of local government.

To counteract these perceptions, PATH can do several things when applying for foundation grants:

- Emphasis should be put on the environmental aspects of the project: the reduction in the level of automobile use within the neighborhood, and thus the level of congestion and air pollution, and the creation of a community which is more livable and more ecologically sustainable.
- When applying for grants, PATH may wish to specifically request money for things that the city does not provide in other transportation projects: landscaping, tree and flower planting, drainage control measures, lighting, and so forth.

### ***Fundraising***

Fundraising from within the neighborhood is important for several reasons. First, since neighborhood residents are the ones who will most benefit from the trolleyway, it is appropriate that they share in the costs of its construction. Second, both government and private donors see their roles as assisting in projects; they will expect the neighborhood to have committed its own funds as well as a show of support. Federal and State grants will often require local matching funds (usually assumed to be from the city, but Minneapolis is likely to require NRP funds to serve this purpose,) and private foundations are much more likely to give to a project that they perceive as having strong local support. This is particularly true since Linden Hills is unlikely to receive money that is intended for assisting troubled communities.

There are many possibilities for local fundraising efforts. A benefit festival could be held (with local merchants providing food, drink, or entertainment.) Local residents could have the opportunity to donate money for specific parts of the trolleyway, with the donation recognized on a plaque to be placed in some central location. There could be a contest to give the trolleyway a name. Residents, property owners, and businesses should all be encouraged to participate, since all have something to gain.

### ***Designation in plans***

It is important for applying for both government and private grants that Linden Hills bicycle paths be officially designated in the appropriate plans, including neighborhood, city, and county. This gives funders confidence that the project has public and governmental support. As described above, Linden Hills paths are supported in neighborhood plans, but have not been specifically included in forthcoming city or county plans. This process should not be difficult, but it may be time-consuming.

### ***Historic designation***

There has been discussion of having the trolleyway designated on the local and national historic preservation registers. Historical designation could increase appreciation for the significance of the trolleyway in the neighborhood and the Twin Cities area, ensure its preservation, and open up a new source of funding. The federal Historic Preservation Fund makes money available to the Minnesota Historical Society and agencies in other states for projects that they deem important for historic preservation, subject to some federal guidelines. A site does not have to be formally designated in order to receive funds: at times support is given to projects whose purpose is to apply for federal historic designation.

However, historical preservation is not a priority for implementation of bicycle and pedestrian paths. The designation process is long and laborious. It also requires support from the Minnesota Historical Society, which has stated that sections of transportation networks are not appropriate for designation. Thus, the whole streetcar network would have to be addressed. Alternatively, the existing historical designation of the MTM operating streetcar section could be expanded to include the Linden Hills section of the trolleyway, but this also does not have great hope for success, since that designation was done some twenty years ago when standards were not as strict. Neither the Historical Society nor the MTM believe it would be successful. Historical designation is a worthy goal, but at best a long term one.

### ***Ownership and maintenance***

We believe the trolleyway path should be owned and maintained by the city of Minneapolis. City ownership places some constraints on the design of the path, such as the type of pavement allowable, perhaps the kind of landscaping that will be maintained, and so forth. However, the trolleyway is primarily a transportation corridor, and city ownership is appropriate.

---

## **UNRESOLVED ISSUES**

Although some areas of the trolleyway can be improved now, there are several problems that will have to be solved before a path can be completely successful. Linden Hills residents should start addressing these areas now, knowing that they will take longer to resolve, and in anticipation of community demand.

- Ownership of path right-of-way. East of the gate, only a 16 foot alley in the center of the original 50 foot right-of-way is still owned by the city, even though in most areas the whole 50 feet is still used as an alley. What this means is that for the path to run on the side of the

alley, permission and preferably an easement granting public passage must be gained from the adjoining property owners. While we don't know of any reason for property owners to oppose this, it will take some time to work out an agreement that satisfies everyone.

- **Parking.** In this same section, the trolleyway is currently used for driving and parking. While there is enough space for drivers to share the right-of-way with cyclists, having a separated pedestrian path will require the removal of (according to our estimates) six parking spaces in the business district. Even though this includes the space required to make all remaining spaces conform to regulations, any loss of parking will be a hardship for the businesses. Again, solving this problem will require time and communication between all the affected parties. Perhaps the businesses most likely to benefit from the trolleyway path, such as Sebastian Joe's, Zumbro's and the Kenwood bike shop, would be willing to help offset the loss in parking to other businesses. Neighborhood residents, too, will have to be able to show that the installation of the path will not result in a decrease in access and traffic flow to the neighborhood businesses that depend on it. These discussions will have to be tied to the larger questions of the relationship between the business district and the neighborhood that Linden Hills has been dealing with recently.
- **Drainage.** Residents along parts of the trolleyway, particularly east and west of Xerxes Avenue, complain that runoff from the areas south of and higher up than the trolleyway either pools on and along the trolleyway, or runs into properties to the south. The construction of trails on the trolleyway can be an opportunity to address these problems. Some of the problems can be addressed by redirecting the flow of runoff water from properties along 44th street. In some cases a simple change in guttering may suffice. On the trolleyway itself, there are also possibilities: installing a covered drain west of Xerxes that would lead to the Xerxes storm sewer, or creating a part-time wetland that would collect storm runoff and allow it to drain into the soil. East of Xerxes, the proposed removal of much of the alley paving may help the situation; if not, the same possibilities exist there.

---

## THE NEXT STEP

### *Implementation by sections*

Because the trolleyway changes so much in different parts of the neighborhood, some sections are easier to work with than others. For this reason, we propose building the path in stages, starting with the easiest parts. As each section of the path is completed, the number of people that use it will increase, and add to the momentum of the project.

#### *Step One*

- Stripe bike lanes on 44th street from France to Beard avenues.
- Place bike route signs on this section of 44th, on Drew Avenue between 44th and 43rd, on 43rd from Drew to Linden Hills Boulevard, and on Linden Hills Boulevard and Queen Avenue to Lake Harriet. The signs should give route information, not just say "Bike Route."
- Do a biking survey of Linden Hills' neighborhood streets. Make a list of what barriers exist to walking and bicycling, and come up with a plan for gradually removing them.
- Install paths on the trolleyway between Chowen Avenue and the gate behind the Upton and 43rd business district. This entails applying for grants, having construction drawings done, and coming to an agreement with the city over ownership and maintenance, as well as putting the work into a scope of services plan.
- Install a metal bicycle groove on the stairs south of the Queen Avenue bridge.
- Place signs on the Lake Harriet trails and at the MTM depot pointing towards the Linden Hills business district.
- Continue coordination with MTM about sharing the right-of-way north of Queen Avenue, and improving the passageway under the bridge.

#### *Step Two*

- Install a separated 6 foot pedestrian trail along the right of way from the Upton and 43rd business district east to the Queen Avenue bridge. This entails coordinating with the apartment buildings along this section and arranging for an easement for public passage with the two property owners just south of the bridge.
- Install stairs leading from the trolley barns down to the Lake Harriet trails, and a pedestrian crossing on Lake Harriet Parkway.
- Work with the businesses in the Upton and 43rd business district to come up with a separated path through the business district. This could be along the edge of the St. Thomas parking lot, either above or below a new wall.

#### *Following Steps:*

- Work with the MTM to find another place for the trolley barns, perhaps either near the archery range or behind the rose garden.
- When new development occurs, ensure that provisions are made for pedestrians and bicyclists. Explore extending the off-road system of bicycle and pedestrian trails.
- Help the MTM expand its trolley service, perhaps again to the 43rd and Upton business district, so that it can once again become a real transportation option.
- Support policies that encourage a balanced transportation system at the city, state, and national levels. Linden Hills cannot be an island in a sea of automobiles.

---

## **Bibliography**

Brilliot, Michael, and Julie A. Winterich. (1993) **Rails-With-Trails: Sharing Corridors for Transportation and Recreation**. Washington: Rails-to-Trails Conservancy.

(1990) **Landowner and Community Concerns about Illinois Rail-Trails**. Illinois Department of Conservation.

Mazour, Lenny. (1988) **Converted Railroad Trails: The Impact on Adjacent Property**. Master's Thesis, Kansas State University. Manhattan, KS.

Flink, Charles A., and Robert M. Searns. (1993) **Greenways: A Guide to Planning, Design, and Development**. Washington, D.C.: Island Press.

Wilkinson, William C., and Catherine Moran. (1986) **Selecting and Designating Bicycle Routes: A Handbook**. Washington: Bicycle Federation of America.