Lincoln Park Transportation Assessment

August 2002

Prepared by the
Duluth-Superior Metropolitan Interstate Committee

Duluth-Superior urban area communities cooperating
in planning and development through a joint venture of
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DULUTH-SUPERIOR METROPOLITAN INTERSTATE COMMITTEE

"Guiding the Future of Transportation and Planning for the Twin Ports Area"

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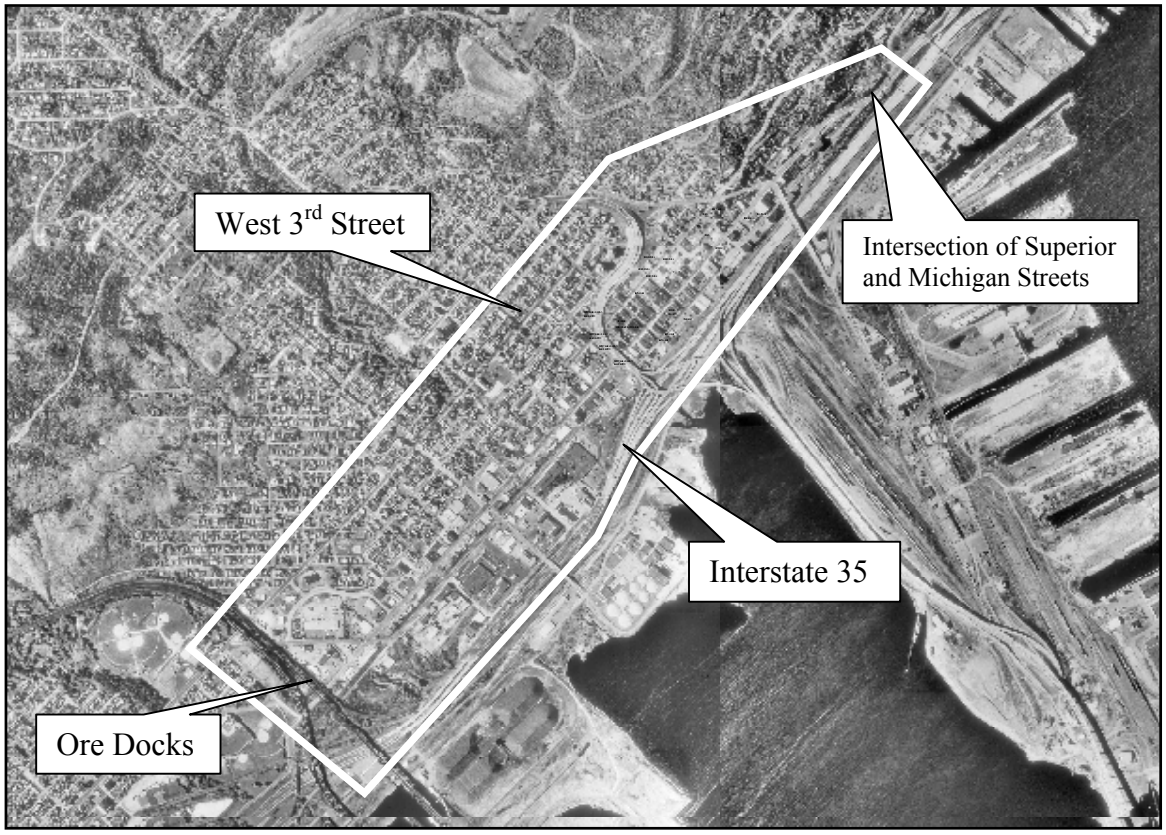
Introduction

At the request of the City of Duluth's Community Development Division, the Metropolitan Interstate Committee (MIC) conducted an assessment of transportation in the Lincoln Park Area. Given the desire of the business and neighborhood communities to redevelop and enhance the Lincoln Park area, as well as a number of recent changes that have been made to the roadway network, City officials had a desire to assess how the current and potential changes would impact the transportation system. Working with representatives from the Lincoln Park Business Group, Neighbors With Hope, and Neighborhood Housing Services, and City of Duluth staff a scope of work was developed with the idea that the MIC would examine the following transportation elements: roadways, transit, pedestrian, bicycle and parking.

The study area for the Lincoln Park Transportation Assessment is bordered by roughly 3rd Street on the northwest, the intersection of Superior and Michigan Streets on the east, Interstate 35 on the southeast, and the Ore Docks on the southwest (see Map 1).



Map 1 - Lincoln Park Transportation Assessment Study

All of the transportation elements that are examined in this assessment are interrelated; changes in the roadway network will also impact transit routes and ridership, pedestrian movements, and parking needs. This planning effort attempts to examine all the

transportation elements in the Lincoln Park area and identify opportunities to improve mobility for all residents living, working, and shopping in this area.

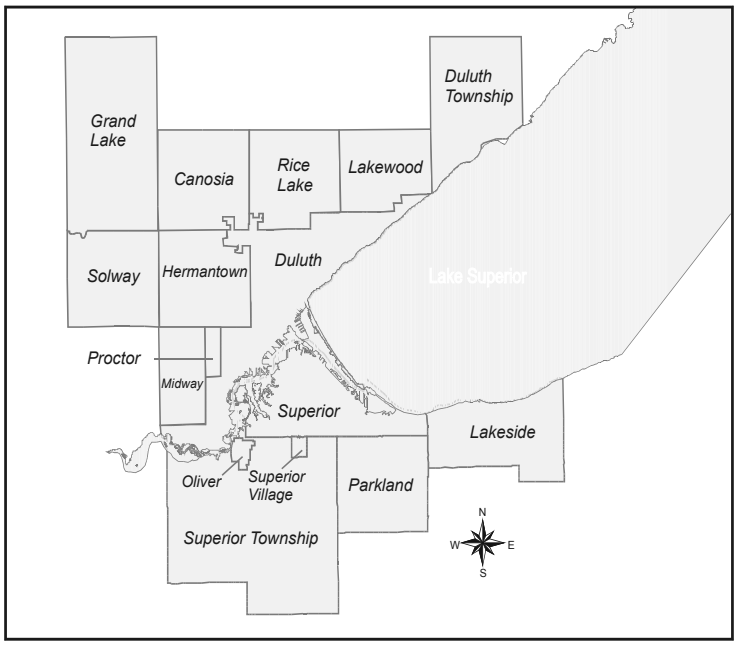
About the MIC

The Metropolitan Interstate Committee (MIC) is the metropolitan planning organization (MPO) for the Duluth-Superior area. Every metropolitan area in the U.S. with a population over 50,000 people has an MPO. As the federally designated MPO, the MIC is charged with transportation and land use planning for the Duluth-Superior metropolitan area. The MIC's planning area consists of the cities of Duluth, Superior, Hermantown, and Proctor as well as the first ring of townships (see Map 2).

The MIC is mandated to conduct a long range transportation plan along with an annual transportation improvement program. The long range plan identifies transportation needs in the MIC planning area and is updated every three years. The transportation improvement program is the yearly process by which transportation projects are prioritized to receive federal transportation funding. The MIC also provides local jurisdictions with transportation planning assistance for all modes of transportation: roads, transit, pedestrian, bicycle, ports, rail, and airports.

The MIC is advised by two committees – the Harbor Technical Advisory Committee and the Transportation Advisory Committee – which are comprised of local, regional, state, and federal transportation professionals. The MIC Policy Board is comprised of 18 local elected and appointed citizens – nine each from Minnesota and Wisconsin. The advisory committees and policy board provide MIC staff with guidance to address transportation and land use issues that affect multiple jurisdictions or agencies in the Duluth-Superior metropolitan area.

Metropolitan Interstate Committee Planning Area



Map 2

Past Planning Efforts in Lincoln Park

Brief History

In 1889, a newly passed Minnesota statute established the Duluth Parks Department, which authorized the city to develop open spaces within the city limits. Over the next 40 years and 47 different transactions, one acre at a time was acquired for the new 48-acre city park and open space system located between Skyline Boulevard, West Third Street, 24th Avenue West and 26th Avenue West. The Lincoln Park Neighborhood would thrive around the newly established park. As years passed improvements continued to be made. The park began as Garfield Park until late in the century, when the Board of Park Commissioners formally adopted the name "Lincoln Park" on December 27, 1894.

The Park Department established criteria to expand and protect the park for the common good of area citizens. The first years of the park were traumatic with fires and floods, but by the early 1900's developments included a skating rink, a new pavilion, a toboggan slide, and a small ski hill. Lincoln Park had become very popular with local citizens and in 1933 the Park Department's Annual Report stated that its assessed value was higher than any other city park, except Enger Park, which was 10 times larger in total area.

After World War II, the Duluth Parks Department shifted towards providing recreational activities in hockey, little league baseball activities and playground programs for youths. Budgets for acquiring large, forested tracts of land were gone. In 1978, according to J.D. Shipley of the Duluth Herald, $200,000 was spent on renovating the pavilion, picnic area, playground, warming shelter and nature trail. In 1998, following the guidelines established by the Secretary of the Interior's Guidelines for the Treatment of Historic Landscapes, Lincoln Park was recommended for "Rehabilitation". Due to the fact that the park has retained much of its historic fabric, all rehabilitation to this park must follow stringent rules "…while preserving those portions or features, which convey its historical, cultural, or architectural values." The Lincoln Park neighborhood continues to stretch beyond the park, influencing traffic as it enters the Duluth area.

A number of studies have been conducted over the years to assist growth and development in Lincoln Park. In compiling the *Lincoln Park Transportation* Assessment, MIC staff wanted to consider all past planning efforts specific to the Lincoln Park area and also examine city-wide and area-wide studies that contained references and recommendations pertaining to Lincoln Park. The following summaries examine the transportation-related issues and recommendations from each study and are presented in chronological order.

Sketch Plan of West End- July 1970

Prior to the development of Interstate 35, there were three major entrance-exits into the West End neighborhood: the six corners at Piedmont and Skyline Drive at the north boundary, Third Street & Grand Ave. on the west, and Superior- Michigan on the east. In July 1970, a *Sketch Plan of West End* for renovating the area was proposed. This plan included:

- Vacating 25th Ave. W. between Lincoln School and Lincoln Park
- Extending Lincoln Parkway down to the harbor
- Vacating Superior St. between 26th Ave. W. and 18th Ave. W., allowing for expansion of a mall area between businesses on Superior Street. The area was to be accessed through one-way corridors on First Street and Michigan Street.
- Since there had been extensive development of trucking industry service facilities in the area, a trucking center was proposed for the Carlton Street district.

Several transportation and circulation recommendations were also made. Three street functions were established; local streets to provide safe, quiet, public access to houses or shops; collector streets which collected cars from local streets and moved them to major streets; the arterial street that moved traffic along a high speed route connecting large activity areas. With the construction of I-35 came the ability to reduce the arterial routes within the city. It was recommended that the two east-west corridors exist at Superior Street and a new route would extend Eighth Street from 40th Ave. W. above Wheeler Field connecting West Duluth with the Duluth Heights district. The existing Piedmont Avenue corridor was to remain the only north-south oriented arterial. In the matter of transit service, a shuttle bus within the Lincoln Park neighborhood was suggested.

A Revitalization Plan for West End Business District- August 1982

In the 1982 study, *A Revitalization Plan for West End Business District*, the following traffic and pedestrian were addressed:

- Establish a clear and safe pedestrian network in the mall area--clearly defined pathways enclosed within buildings and outdoors, benches and waste receptacles are needed along the mall.
- Give special attention to making the area more accessible to the handicapped and elderly on both a vehicular and pedestrian basis--there were no designated handicap parking areas or ramped curbs.
- Develop a strong transit service by extending the trolley line from Downtown to West End with a trolley station at 20th Avenue West. This was a follow-up recommendation to the 1970 plan.
- Evaluate the impact of loading and unloading goods on the normal traffic or pedestrian movement patterns--enforce the ban on commercial vehicles within mall area during business hours and eliminate unloading from Superior Street completely.
- Establish parking regulations that would give patrons priority--additional off-street parking is needed.
- Coordinated lighting for safety of pedestrians and vehicles.
- Examine methods to prevent through-traffic in the area--divert traffic around mall area to First Street and Michigan Street and develop better signage to parking areas.

West End Urban Design Plan-March 1983

The transportation issues addressed in *The West End Urban Design Plan of* 1983 were:

- The truck center would continue to be a strong positive influence in the neighborhood.

- Points of entry should receive landscaping to highlight the gateways to the neighborhood.
- Insure plantings, brick pavers, and street furniture are maintained.
- Develop a well marked public access to the waterfront.
- Modify Grand Ave. & Third Street intersection to discourage through traffic movement.
- Develop pedestrian links--rebuild 2nd Street from Mid-Town Park to Lincoln Park with expanded pedestrian walkways and develop a pedestrian link along 22nd Avenue West to the waterfront
- Improve visibility at intersections, alleys and driveways.
- Better utilize alley space for off-street parking.

Truck Route Study-1990

This study was conducted by the MIC with the goal of creating a uniform truck route system in the urbanized area of Duluth and Superior. The following are recommendations within the Lincoln Park area.

- The need for an over-size and high-clearance route through Duluth was identified. It proposed a designated over-size truck route beginning at the port terminal on Rices Point and proceeding over the 300-ton capacity Garfield Bridge above I-35 to Superior Street. The route then crosses onto Piedmont Avenue and continues up to a gate near 3rd Street (used only for over-sized loads). The gate is only opened to allowed over-sized loads onto Trunk Highway 53. At the Six Corners intersection on Piedmont Avenue, swing-away traffic lights allow high-clearance loads to pass. The over-size route then follows Piedmont Avenue turning west on Morris Thomas Road to Trunk Highway 2.
- Traffic congestion at the Six Corners intersection at Piedmont Avenue was identified as a problem for truck traffic. Reconstruction of Piedmont Avenue was recommended to be expedited.

Metropolitan Bikeways Plan - 1994

This plan developed by the MIC was designed to be a guide for local, county, and state agencies for developing bicycle facilities and programs. The goal was to improve the bicycling environment throughout the greater Duluth-Superior area. A study advisory committee assisted MIC staff in developing recommendations and policies that focused not only on physical facilities, but also on education and enforcement as important components of a program to promote safe bicycling.

- Recommendations pertaining to Lincoln Park include extending Munger Trail to connect with the Lakewalk and developing an on-street bike route from Carlton/Superior Streets to Superior Street and Glen Place Drive via Michigan Street.

Freight Movement Study-1997

The MIC conducted the *Freight Movement Study* to evaluate freight movement within the Duluth-Superior area. The purpose of the study was to examine and analyze transportation factors that impact freight movement in the Duluth-Superior area. Traffic

and truck counts conducted in June of 1996 revealed that trucks accounted for 6.78% of the total traffic (14,735) on Trunk Highway 53 between I-35 and Six Corners on Piedmont Avenue in a 24-hour period. Recommendations from the study included:

- Engaging the freight community in transportation planning, examining the costs and benefits of a new intermodal community, reviewing the functional classification of the roadway network, and improvements to the local truck route system.

Lincoln Park Restoration and Rehabilitation Project: Improvement Framework-1998

The recommendations pertaining to short-term pedestrian and vehicular transportation issues specific to the city park of Lincoln Park were to -

- Construct new trails and improve trail access
- Construct handicapped accessible trails and facilities
- Renovate the trail system to current design standards
- Construct new parking / pull-off areas
- Construct a new pedestrian bridge to replace the concrete deck foot bridge- The first footbridge downstream from 10th Street bridge
- Renovate the stone bridges in the central area
- Construct special surfacing in major pedestrian crossing zones
- Construct a new sidewalk connection near Skyline Parkway
- Construct a tunnel connection to Lincoln Park Elementary School

This plan incorporated several visual additions in parcel identification, architectural drawings of bridge improvements and drawings from Lincoln Park seventh grade science students, representing their suggestions for park improvements. Within this study was the recommendation of Lincoln Park's eligibility for nomination to the National Register of Historic Places.

Duluth Thoroughfare Plan-October 1998

This study was conducted by the MIC to provide information to the City of Duluth for setting priorities to develop a maintenance schedule, managing access to new and developing businesses, and plan for any potential expansions of the roadway network. The principal purpose was to review the street and highway system to determine the actual functions of these roadways. Through the creation of ten Planning Districts, which represent the 29 neighborhoods within the City of Duluth, the community will have input from each area in its development of a comprehensive plan for the future. Throughout each district- roadways were examined by looking at functional classification, Average Daily Traffic Counts (ADT), and capacity deficiencies. This analysis reviewed what quality of service an existing roadway provided during peak periods, what future improvements will be needed if traffic increases, and when roadways may need upgrades. Capacity is normally defined in terms of level of service (LOS) with six levels ranging from LOS A, free flow of traffic with low density to LOS F, forced flow in which the amount of traffic approaches a point which exceeds the amount that can be served. The capacity analysis was conducted using TRANPLAN (a travel demand model), which identified a number of deficiencies in the Duluth network for the base year 1998.

Although there were several areas of concern within the city, only one road was within the Lincoln Park neighborhood.

- *Trunk Highway 53 Corridor between Miller Hill Mall and I-35 (Trinity Road and lower Piedmont Avenue)*- Trinity Road and lower Piedmont were rated as experiencing slight congestion problems.

The TRANPLAN model also projected deficiencies in the Duluth street network for the year 2020. The future projection advised that roadway problems with increased traffic flow and congestion would occur along two routes through the Lincoln Park neighborhood.

- *Trunk Highway 53 Corridor between Miller Hill Mall (Trinity Road and lower Piedmont Avenue)* - Trinity Road will experience high density traffic flow while lower Piedmont will continue to experience slight capacity problems from Six Corners to I-35.
- *27th Avenue West from I-35 to Superior Street* - may experience capacity deficiencies.

Transit Vision- 1998

This comprehensive transit study was conducted by the MIC for the Duluth Transit Authority (DTA) to examine the entire transit operation and take into account the changing mobility needs of citizens of the Duluth-Superior area. Though not specific to the Lincoln Park neighborhood, the study contained a number of recommendations that would benefit the neighborhood and maximize use of public transportation. Among those recommendations were:

- Customer Service Improvements-
    1. Increase security and comfort level at Transit Centers.
    2. Enhance *user friendliness* of system map and information and improve route information, maps and time schedules.
    3. Disseminate promotional and informational pamphlets on buses and at Transit Centers.
    4. Develop comprehensive *Transit Rider Guide Booklet.*
    5. Increase pass-purchasing options and expand pass user options by implementing smart card passes with either magnetic strip or contactless format.
    6. Enhance bus stops and shelters.
    7. Assist regular route usage among persons with disabilities.
- Marketing Improvements-
    1. Increase Customer Business District (CBD) commuter marketing effort.
    2. Increase college student marketing effort.
    3. Produce and distribute Senior Transit Packet.
    4. Develop *Summer Fun Guide* to work with the Teen Pass Program.
    5. Solicit customer input and complaints through:
        a. Internet website
        b. Comment cards on buses and at transit centers
        c. Comments through 722-SAVE
        d. On-board surveys

- Route Recommendations that were specific to the Lincoln Park area-

    1. Expand service to Airpark and Airport
    2. Create a West Duluth to Miller Hill Mall Route- initially implement on weekends with an hour headway and if ridership warrants, expansion to midday. This would provide direct routing up 21st Ave. W. in West End and offer routing to Lake Superior College and on to the Mall.
    3. Offer a more flexible route through Hub and Spoke system midday, evening and weekend periods during off-peak times. By funneling neighborhood circulators into local area hubs that provide more direct service to major destinations (e.g. mall, UMD, DECC), complex travel patterns are better served.

Duluth-Superior Metropolitan Pedestrian Plan- 1999

This study was conducted by the MIC to examine pedestrian issues in the Duluth-Superior area and improve the pedestrian environment. A Pedestrian Work Group representing neighborhood groups, law enforcement officials, public works departments, Departments of Transportation from Minnesota and Wisconsin, senior citizens, city planning, school districts, and local pedestrian groups worked together to develop the Pedestrian Plan. The vision statement for the work group was

> "To create and maintain a year round pedestrian-friendly community that recognizes walking as an essential mode of transportation accessible to all persons. We recognize the importance of educating the public about pedestrian rights, responsibilities, and the value of a multi-modal transportation system."

Recommendations from this plan relevant to Lincoln Park include:

- Promote street design standards to accommodate pedestrian safety and comfort. (FHWA guidelines)
- Install traffic calming techniques to slow neighborhood automobile traffic in problem areas.
- Promote land use patterns that advocate pedestrian environments through local plans and zoning ordinances
- Promote employer incentives to increase the number of workers who walk, bike or use transit to work.
- Designate a "Walk Your Child to School Day" to raise awareness of walking routes to local schools.
- Support efforts by local business improvements districts (BIDS) to provide streetscape improvements.
- Improve targeted pedestrian areas- malls, universities and downtown area.
- Improve pedestrian environment for targeted populations.
- Create a bike-pedestrian coordinator position to manage bike and pedestrian issues.

Lincoln Park Business District Michigan Street Realignment Corridor Strategic Vision- April 1999

Northspan Group, Inc in cooperation with LHB Engineers & Architects, addressed several transportation issues in this study. In February 1999, the City of Duluth through the Duluth Economic Development Authority (DEDA), the Local Initiatives Support Corporation (LISC) and the Lincoln Park Business Group (LPBG) jointly sponsored a strategic visioning process for a portion of the Lincoln Park Business District. The future vision for the Lincoln Park Business District includes mixed-use commercial, service and light manufacturing, removal of blight, and attraction of office sector, light manufacturing, a motel and restaurants. With the re-routing of Michigan Street between 13th and 22nd Avenues West, significant changes were forecast for the Lincoln Park area. These would include displacing buildings, changing traffic circulation and parking, and creating additional space for development. Transportation concerns from the corridor change included:

- Increased traffic on lower Michigan Street
- Some business owners wanted old Michigan to remain open for through traffic
- Diagonal parking from Garfield to 19th Avenue West is needed on Superior Street
- Congested entrances from the freeway have an influence on image
- Parking concerns in general

Specific actions for improvement were identified and include strengthening the Business Group, image enhancement, business retention and attraction, and loading area and parking improvements.

Lincoln Park/ Third Street Corridor Revitalization Plan- 2000

In July of 2000, the Neighbors With Hope, a subcommittee of the Lincoln Park Neighborhood Coalition, presented the Duluth Planning Commission with a plan compiled by RLK- Kuusisto, Ltd./SWB Engineers and Landscape Architects for revitalizing the Third Street Corridor through Lincoln Park. It was their request to include the Lincoln Park 3rd Street plan as part of the City of Duluth Comprehensive Plan. The strategies for transportation issues culminated from a community meeting survey that prioritized citizen wishes for the future of the Third Street Corridor. Included within the survey are the following results:

- Additional traffic control (speeding & loud noises)
- Making the area pedestrian friendly
- Parking (off-street for residents, businesses and joint use; for the park)
- Re-develop streetscape entrances into Lincoln Park neighborhood
- Remove signage at Carlton Street and replace with new signage signifying entrance into Lincoln Park
- Restormel Street – vacate Winnipeg St. and expand parking for the Harrison Community Club
- Intersection of 30th Ave. W.(Devonshire) & Third St.- traffic signals, lighting and pedestrian crosswalks
- 27th & 28th Avenues West - development, landscaping and additional parking

- Expansion of parking facilities for local businesses along West Third Street

In October 1999, 13 Lincoln Park community club members were surveyed. Nine of them resided on the Third Street corridor: one renter, seven owners, one owner occupied landlord and four business owners. Their top four transportation concerns were:

1. Traffic along Third Street is too fast and noisy
2. The lack of good lighting and signage
3. The poor street conditions
4. Parking issues on the busy route

The responses were directed at pedestrian improvements, through traffic control and lighting upgrades.

The strategies were well outlined and specific for development of a streetscape plan with images and preliminary costs included. The plan was forwarded to the Duluth Planning Commission on January 14, 2000.

Piedmont Realignment and Reconstruction Plan - 2001

The Minnesota Department of Transportation (MnDOT) has had plans for many years to reconstruct Trunk Highway 53 between I-35 and Trinity Road. This segment of road known as Piedmont Avenue is substandard for the movement of high volumes of vehicle and truck traffic. With $18 million in state funding available, the *Piedmont Realignment and Reconstruction* project began in 2001. The reconstructed Piedmont Avenue will have four 12-foot lanes with 8-foot wide shoulders, a center median and left turn lanes at intersections. A bridge over Piedmont Avenue at 5th Street will connect the neighborhood on the east side of Piedmont Avenue to Lincoln Park and the business area. Piedmont Avenue will be realigned from 10th Street to approximately 15th Street above Skyline Parkway and Skyline Parkway will bridge Piedmont Avenue. A new connection between Trinity Road and upper Piedmont will be constructed near 15th Street. Also a pedestrian underpass will be constructed at 22nd Avenue West and eight-foot sidewalks will be constructed throughout the project. Bus pullouts are included at bus stops.

A Neighborhood Landscape Focus Group assisted with the design of the project to produce an aesthetically pleasing lighting and landscaping and integrate other neighborhood amenities into the project. The results of this group's work will be incorporated into the final design.

Duluth-Superior Area Truck Route Study - 2001

This study conducted by the MIC was designed to update the study done in 1990. The goal of the study was to identify a truck route network that provides for the safe, effective, and efficient movement of goods and services within and through the Duluth-Superior area. Recommendations affecting the Lincoln Park area include the designation of an official high-clearance load route. This proposed route incorporates the new design features from the *Piedmont Avenue Reconstruction Project.* The proposed route would begin at the port terminal on Rices Point and follow Garfield Avenue to Superior Street.

The route then crosses onto Piedmont Avenue and continues up to the new connection with the Trunk Highway 53 portion of Piedmont Avenue. The route follows Piedmont Avenue using the present alignment to Six Corners intersection. The route then follows Piedmont Avenue turning west on Morris Thomas Road to Trunk Highway 2. This recommended route would accommodate high clearance vehicles by burying or raising utility wires. While upper Piedmont Avenue was under reconstruction in 2001, these utilities were moved to accommodate the truck traffic. The lower Piedmont area was incorporated in the design for construction in 2003. This route will be used only a few times per year and the over-size loads will move at night to lessen disruption to traffic and the neighborhoods.

Further recommendations that would affect the Lincoln Park area were:

- Monitor areas of increased truck activity in order to incorporate this information into design considerations of reconstruction projects.
- Focus on good access management practices as a tool to reduce congestion and accidents, preserve road capacity, and reduce travel times for the delivery of goods and services. Department of Transportation should work with local areas cooperatively to ensure that land use decisions consider the impact on transportation facilities.
- Utilize more consistent signage on area roads where weight restrictions are imposed.

Conclusion

The studies and planning efforts listed above represent a lot of hard work and ideas from a wide range of stakeholders. MIC staff wanted to ensure that these ideas and thoughts were incorporated into this planning effort. It is our hope that this plan will tie many of the transportation-related ideas together with some of the more recent issues to provide the community with recommendations and ideas to improve its transportation network.

Roadway

Roadways in the Lincoln Park area were examined to observe how they were functioning and determine if any improvements are needed. A number of elements of the roadway system were analyzed including recent and proposed changes to the system, results of the recent travel demand modeling, functional classification, truck routes, traffic calming, and average daily traffic.

Recent Changes to the Roadway Network

Lower Michigan Street Alignment
In 2000, Lower Michigan Street opened as the new through route from 13th Avenue West to 22nd Avenue West. This change was made to accommodate new business development in the area. The "Michigan Street Realignment Corridor" created a new visual appearance for the Lincoln Park Business District, which has enhanced the appeal of the area. This new street is now functioning as a through street carrying traffic to and through the Lincoln Park commercial core. The changes listed in Table 1 are the result of the development of Lower Michigan Street.

27th Ave West Intersections with Michigan Street and Superior Street
The City of Duluth will add traffic signals to the intersection of 27th Avenue West and Michigan Street in late summer of 2002. This new signal will be coordinated with the current traffic signal at 27th Avenue West and Superior Street. The new Michigan Street alignment from 22nd Avenue West to 13th Avenue West has been attracting new trips and as a result has added many more turning movements to the intersection of 27th Avenue West and Michigan Street. This has resulted in a need for a traffic signal and signal coordination with the existing signal at 27th Avenue West and Superior Street.

Michigan Street
The impacts of Lower Michigan Street have allowed the City of Duluth to make some changes to the Michigan Street Corridor as the function of this road has changed. Instead of the one-way through street it formally was, it now serves as an access street for local businesses. To assist access to Superior Street, stop signs have been placed on Michigan Street at the intersections of 19th, 20th, and 21st Avenues West to allow traffic on those Avenues priority over Michigan Street. Parking

Table 1: Most Recent Changes to Lincoln Park Roadway

Location	Traffic Change
Michigan St	Parking allowed on both sides of the street
Michigan St	Two-way traffic from 22nd Ave W to 21st Ave W
Michigan St	Two-way traffic from 17 ½ Ave W to 18th Ave W
Michigan St	Two-way traffic from Garfield to 17 ½ Ave W
Michigan St	Stop signs moved from Avenue crossings (21st Ave W, 20th Ave W, 19th Ave W, 18th Ave W) to Michigan St. as stopped legs to encourage the use of Lower Michigan St.
17 ½ Ave W	Two-way traffic from Michigan to Lower Michigan St.
27th Ave W	New traffic signal at Michigan St.
27th Ave W	New traffic signal at Superior St.

is now allowed on both sides of Michigan Street. These changes are designed to allow improved access to the commercial core area and better truck access to Michigan Street.

Proposed Changes to the Roadway Network

Piedmont Avenue – Trunk Highway 53
Piedmont Avenue from 4th Street to 1/4 mile north of Skyline Parkway will be widened and reconstructed beginning in 2003. The new Piedmont Avenue will have four 12-foot lanes, with 8-foot shoulders, a center median, left turn lanes, sidewalks, bus pullouts, and aesthetically pleasing landscaping. New bridges will be constructed linking the east and west sides of Piedmont Avenue at 4th/5th Street, under Skyline Parkway and over Miller Creek. Total project length is 1.3 miles.

The biggest changes to the present Piedmont Avenue include the realignment of Piedmont Avenue from 12th Street to its reconnection with Trinity Road above Miller Creek. This section will bypass the Six Corners intersection and will include a Skyline Parkway bridge over the new road alignment. Other major changes include a pedestrian underpass at 22nd Avenue West, a bridge at West 4th & 5th Streets, and the connection of lower Piedmont Avenue to the new roadway near Voss Avenue. This new connection will allow vehicles from the Garfield Avenue and Superior Street area to proceed up the hill through the neighborhood to Piedmont Avenue. This new route may attract some cut through traffic.

Schedule
- Bids must be let no later that February, 2003 or the funding will expire.
- Construction will begin in the spring of 2003 and continue through the fall of 2004.
- Right of way purchases will begin immediately. Nineteen additional homes and three businesses are scheduled to be removed.
- Final design plans will not be completed until late summer 2002.

I-35 Study
MnDOT is currently working with the consulting firm URS Inc, to analyze the I-35 corridor from Boundary Avenue to the downtown area. The pavements in this area are scheduled to be replaced in the next 10 years and MnDOT is taking the opportunity to study the long-term needs of this corridor including capacity, physical structure changes, design speeds and ramp distances. Land use along the corridor has been forecast using population, housing and employment inputs with the MIC's TRANPLAN regional travel demand model. This information, along with current and past traffic counts, will be used in a small area model used by URS Inc. to produce traffic projections out to 2030. These traffic projections will be used to identify needed changes to the I-35 system and incorporate them into maintenance and reconstruction designs.

Functional Classification

Functional classification is the process in which streets and highways are grouped in "classes", or systems, according to the way people use them. It is important to remember that roads do not work independent of each other. The purpose of any road network is to

move people and goods from one point to another point. These classifications include *interstate highways, other freeways and expressways, principal arterials, minor arterials, major collectors, and minor collectors*. All other roads are considered local streets.

In the states of Minnesota and Wisconsin, functionally classifying roadways is typically carried out at the state level in cooperation with regional and local officials through the regional development commissions (RDCs) and metropolitan planning organizations (MPOs). These classifications aid state, county, and city jurisdictions in setting priorities for the various roadways. These priorities can be set for such things as reconstruction, maintenance, and even snow plowing.

Two major criteria, mobility and access, determine a road's classification. Roadways with high mobility move a large amount of traffic, but to do so they have limited access. Vehicles are traveling at higher speeds with few turning movements to achieve higher levels of mobility. The highest classifications are Interstate Highways and Freeways that accommodate high levels of traffic, but have very little access. Their function is to carry large amounts of traffic to connecting roadways, which in turn offer access to trip destinations. High-access roadways accommodate much lower levels of mobility. In contrast, the lowest classification is Local Roads, which provide a high level of access with limited mobility. Local Roads carry less traffic, provide access to residential areas and connect to higher classified roads.

The functional classification process is a practical technique for determining the travel corridors that should best serve through and local traffic in an urban area. The following narrative describes the functionally classified roadways in the study area (see Map 3).

Interstate Highways
Interstate 35 carries large amounts of traffic through the City of Duluth and has two access points in the Lincoln Park area – 27th Avenue West and 21st Avenue West. Near the 21st Avenue West area is the interchange between Interstates 35 and 535 and Trunk Highway 53. This interchange, sometimes referred to as the "can of worms", provides access to roadways leading to the Miller Hill area, City of Superior, downtown Duluth and the west areas of Duluth. I-35 is designed to move large amounts of traffic with limited access. The 1999 traffic counts show approximately 40,000 vehicles per day west of the I-535 interchange and 55,000 vehicles per day east of the I-535 interchange.

Principal Arterials
U.S. Trunk Highway 53, or Piedmont Avenue as it known in the Lincoln Park area, moves traffic up and down the hill from Interstates 35 and 535. This highway provides access to the Miller Hill area as well as a through route to the Iron Range. Access is limited near the interchange with I-35, although as you move up the hill access points increase. Traffic counts show 13,200 vehicles per day using this segment of road.

Minor Arterials
The minor arterials that are in the study area include West First Street, Carlton Street, Michigan Street and portions of Superior Street and 27th Avenue West. West First Street,

from lower Piedmont Avenue to 27th Avenue West, is a minor arterial that provides access to the Lincoln Park core commercial area. It is a one way westbound street that connects to the minor arterial section of 27th Avenue West from First Street to I-35. Carlton Street connects Michigan and Superior Streets to Grand Avenue west of the ore docks. Carlton Street has a traffic count of 4,150 vehicles per day and provides access to the Truck Center area. Michigan Street has become the primary east-west route through Lincoln Park for traffic that does not use I-35. It carries approximately 10,000 cars per day and provides access to the entire Lincoln Park area. Superior Street is a minor arterial from Carlton Street to 27th Avenue West. This segment of Superior Street has a traffic count of almost 10,000 vehicles per day and provides access to the industrial area of Lincoln Park.

Major Collectors

The major collectors in the study area include West 3rd Street, Truck Center Drive, portions of West First Street and Superior Street and 19th, 21st, 24th, and 27th Avenues West. West Third Street is an extension of Grand Avenue and serves the Third Street businesses and provides an east-west route for the neighborhoods in the area. Traffic counts range from 7,000 vehicles per day near the ore docks to around 5,000 near 24th Avenue West. Truck Center Drive provides access to the trucking related business in the western end of Lincoln Park and has a traffic count of 800 vehicles per day. Superior Street from 27th Avenue West to Garfield Avenue is a major collector that serves as the main access road in the commercial core of Lincoln Park. This road has been reconfigured in the commercial core to accommodate diagonal parking and has traffic counts ranging from 7,500 to 10,000 vehicles per day. Two roads that function as neighborhood collectors are 24th and 27th Avenues West. These roads move traffic between Superior Street and Skyline Drive.

Local Roads

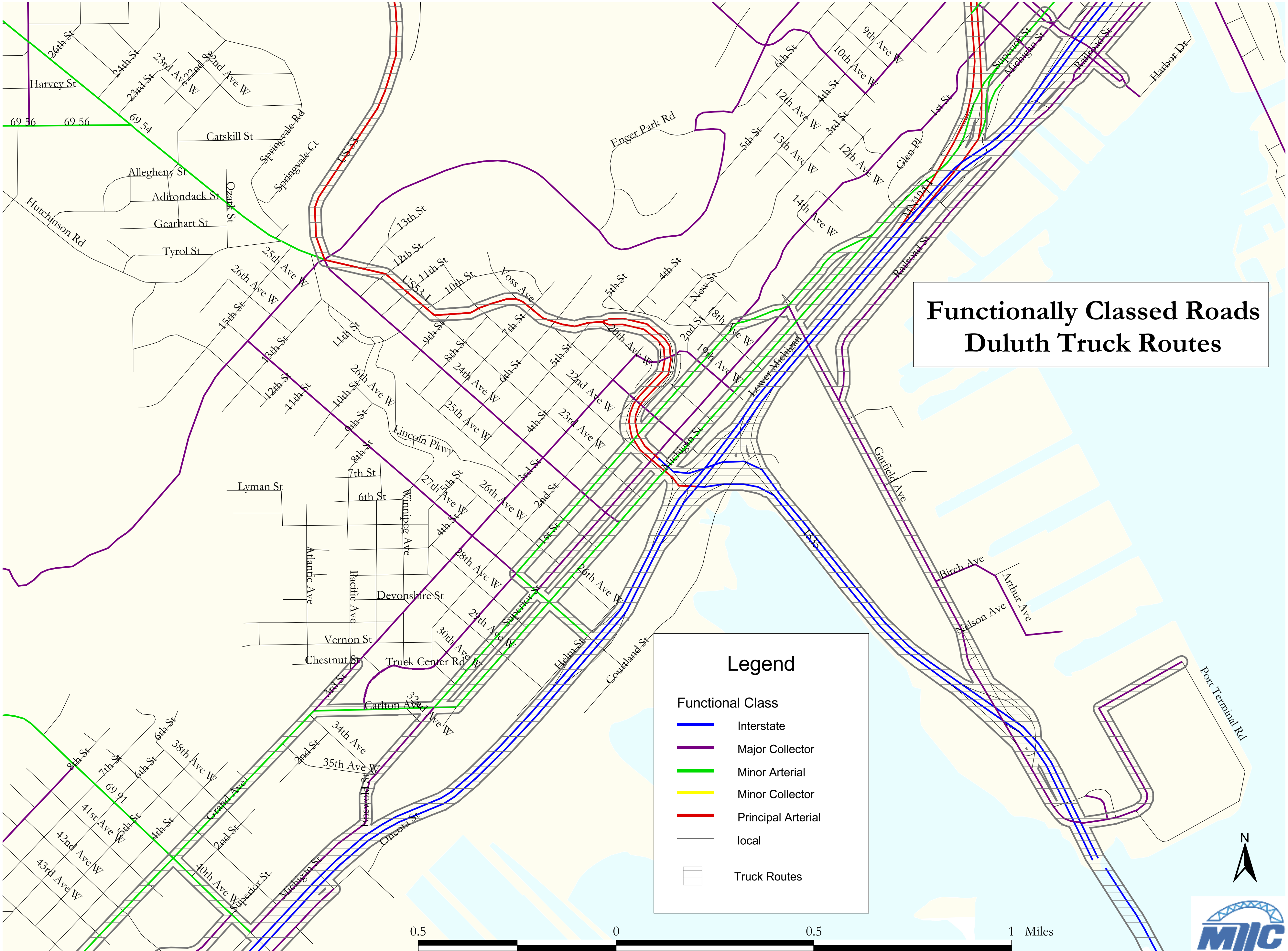
All roads that are not functionally classified are considered local roads. The function of these roads is to provide access to residential areas, as they are not designed to carry high levels of through traffic. Design speeds are lower than functionally classified roads and the purpose is to move people from their homes to the functionally classified system.

Truck Routes

The MIC completed a truck route study in 2001, which examined the truck route system throughout the Duluth-Superior area. The goal of the study was to identify a truck route network (see Map 3) that provides for the safe, effective and efficient movement of goods and services within and through the Duluth-Superior area. To accomplish that goal the study looked at the following objectives:

- Maintain a consistent network of inter-connected roads that allow for the safe and efficient movement of goods
- Match truck size and weight to infrastructure carrying capacity

Functionally Classed Roads
Duluth Truck Routes



- Improve network compatibility with adjacent land use
- Direct truck movement to the major arterial system where roadway capacity is the greatest.

In Lincoln Park, the truck route system consists of the following road segments:

- I-35
- Trunk Highway 53 (Piedmont Avenue)
- 27th Avenue West from I-35 to First Street
- Carlton Street from Grand Avenue to Michigan Street
- Superior Street from Jenswold Street to 22nd Avenue West
- Michigan Street from Carlton Street to Mesaba Avenue
- First Street from 27th Avenue West to Piedmont Avenue

Roadway jurisdictions in Minnesota, such as the City of Duluth, can designate a certain percentage of their roads as State-Aid Roadways. As such, these roads are eligible to receive state funds for maintenance and reconstruction activities. Certain rules apply to State-Aid routes. Most significantly, jurisdictions cannot exclude trucks from using these roads unless a physical deficiency exists necessitating a vehicle limit weight. In addition to the roads listed above, there are a few roads in the Lincoln Park area that are designated as Municipal State Aid (MSA):

- West Third Street from Grand Avenue to 22nd Avenue West
- 27th Avenue West from I-35 to Skyline Drive
- 24th Avenue West from Michigan Street to Skyline Drive

Although the above listed roads are not signed as truck routes, trucks are allowed to use them. In addition, trucks are allowed to use local streets to access businesses for deliveries. They must take the most direct routes from the designated truck and MSA routes to their delivery destination.

TRANPLAN Travel Demand Modeling

When the MIC completed its Long Range Plan - *Tomorrow's Transportation 2025* in 2001, the travel demand model, TRANPLAN, was utilized to identify current (base year data 1999) and projected (2025) transportation deficiencies and population scenarios. URS, Inc., a transportation modeling consultant, was contracted to conduct the travel demand modeling process.

Travel demand modeling can identify current and potential future roadway deficiencies. Demographic inputs such as: population, housing and employment statistics were updated, and resulted in the technical analysis of the existing and long term needs facing the transportation network. Future population and employment assumptions were made to mimic past development growth and patterns. These assumptions provide one future scenario out of an infinite number of possibilities. What makes travel demand modeling a valuable tool is the ability to consider and alter the assumptions of future development scenarios in order to assess their respective traffic impacts.

The results of the modeling effort in *Tomorrow's Transportation 2025* show that some roadways in the Duluth-Superior area have current deficiencies and some will be deficient by the year 2025. The results of the model did not show any roads in the Lincoln Park area as having current deficiencies, although 27th Avenue West was identified as having possible deficiencies by the year 2025. As identified future deficiencies, roadway segments may likely evolve as projects to address these issues (according to federal, state, county, and municipal state aid funding eligibility guidelines). The identified roadways may also be designated as "potential roads for further study" and may warrant a transportation agency such as MnDOT, the City of Duluth or the MIC to conduct a detailed study.

Traffic Calming

The following traffic calming discussion makes reference to roadways, which is intended to include the entire road right-of-way. This includes the driving surface, parking lanes, bike lanes, boulevard, and sidewalks. Most roadways include some but not all of these elements. What the following discussion points out is that roadways are for moving people and not just cars. This section does not advocate walking in the driving lanes, but emphasizes that everybody, regardless of if they drive or not, has a right to use the roadway. The following discussion was taken from Cynthia L. Hoyle's book entitled *Traffic Calming*. This information is included to better understand the principles and methods of traffic calming.

"Traffic calming is a form of traffic planning that seeks to equalize the use of roadways between automobiles, pedestrians, and bicyclists. This is accomplished through the use of devices and techniques that reduce traffic volume and speed in neighborhoods while maintaining maximum mobility and access. Traffic calming also attempts to make drivers aware of the fact that they are sharing the space of a street with other users. To successfully implement traffic calming in a community, planners and engineers must look at the transportation as a whole for the area or community."

Principles of Traffic Calming:

- Roadways are not just for cars. They are also for social interaction, walking and bicycling. Different roadways will serve different functions, no one function should dominate to the exclusion of all others.

- All residents, regardless of age, financial status or social standing, have a right to an equal share of the mobility that a city can responsibly provide for its residents. No person or group has a right to increase their mobility at the expense of another person's mobility. An overemphasis on car transportation discriminates against a large section of society (poor, disabled, elderly, children, and impacted residents).

- Mobility should be maximized at a low cost. Trips are a means to an end. The trip is a "cost" paid to enjoy the "benefit" at the journey's end. The cost involves time, money, energy, and social environmental effects. It therefore, makes sense to minimize the costs a city and its residents pay to enjoy access to a wide range of

destinations. This principle emphasizes managing existing transportation resources of a city with maximum efficiency, utilizing inefficient roads and public transportation networks before new infrastructure is built.

Methods of Traffic Calming:
Reduce the speed at which automobiles travel by altering design. Reducing speed has the following effects:

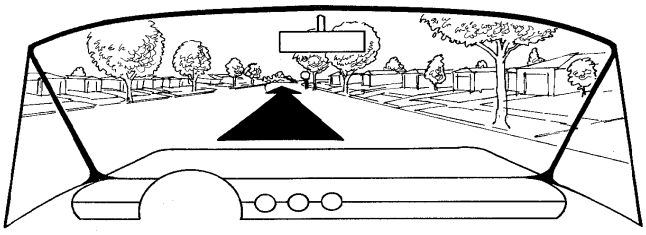
- Slower traffic emits less noise and fumes if traveling at an even pace.
- There are fewer accidents.
- Accidents that happen are less severe.

Active or passive controls can be used to influence vehicle speeds. Active controls change driver behavior and are, therefore, largely self-enforcing. They create the visual impression that a roadway is not meant only for through-traffic and that other users of the roadway, such as pedestrians, cyclists, and children playing, have a right to its use. The drawback to the use of active controls is their cost, the possible negative impact on emergency and service vehicles, and the negative response of motorist who are inconvenienced by their introduction. Active controls include: speed bumps, speed tables, rumble strips, median barriers, cul-de-sacs, semi-diverters, traffic circles, chokers, interrupted sight lines, neck-downs, chicanes, changes in directions, and protected parking.

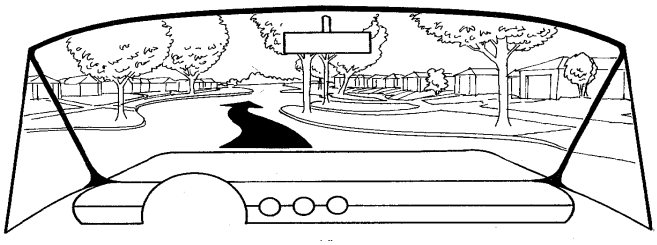
Passive controls are primarily traffic signs and do not physically prevent action (e.g., stop signs, yield signs, speed limits, turn-prohibitions, one-ways, etc.). Thus, drivers can easily violate the purpose of these devices. Passive control devices are most effective in areas where compliance can be expected to be high and enforcement is possible.

Change the psychological feel of the roadway through design or redesign. Wide straight stretches of paved roadway say to the motorists, "this is your turf." Roadways that use paved strips, landscaping, and narrowed lanes have a relaxed, pedestrian feel that say to the driver, "Beware, this is a shared space." Several experts have described a series of ways to use design to influence driver behavior. There are number of ways that changes in the physical environment can alter the ways that drivers and all other users "experience" the roadway. Most importantly is by creating a sense of place on roadways, not unlike creating a sense of place in a neighborhood or community. Recognizing the roadway as a place rather than a channel designed for the benefit of

Figure 1 – Traffic Calming and Sight Lines



Interruption of sight lines is a critical component of most traffic calming strategies.



Sight line interruption causes motorists to slow down, widen their field of vision, and become more aware of pedestrians and bicyclists

the car and driver will change the psychological feel for all users.

There are a number of measures that community transportation planners and citizens might consider when designing or redesigning neighborhood streets. The policies for roadway design are as follows.

- Traffic management devices and changes to the roadway design should be compatible with the character of the neighborhood.
- Traffic control devices and roadway designs should be easy to maintain.
- The landscaping used for roadway design should be safe for pedestrians.
- Roadway trees should be planted to enhance the image of a roadway as a place with which residents can identify. Large trees not only provide shade, enhance property values, and contribute to a sense of place, they act as very effective buffers to traffic noise and create visual and psychological barriers between parked cars and residential spaces.

Final Thoughts on Traffic Calming

The success or failure of traffic calming techniques depends on the effective involvement of the community. Local traffic issues can arouse powerful emotions. Neighborhood traffic management is controversial because some people gain and some lose. If the negative effects of a neighborhood traffic management system are not understood in advance, it can discredit the entire process because it will appear that there will always be "unforeseen" adverse impacts.

An effective, well-organized planning process is the single most important element in creating a successful neighborhood traffic management program. In virtually every case, the failure of a program can be traced directly to either a breakdown in the planning process or the failure to have a structured process at all. A word of caution on traffic calming techniques – if a technique is successful in one area, its success is not guaranteed in another area. Also, improperly designed or installed traffic calming devices will not be effective.

The picture on the left shows open sight lines on West Superior Street and the picture on the right shows more interrupted sight lines along the same street.

Conclusion

With some of the recent and proposed changes in the Lincoln Park roadway system, traffic should move more efficiently through the area. However, traffic efficiency should not come at the expense of other modes of mobility such as walking, biking and transit. With that in mind, the areas around West 3rd Street should have improved pedestrian crossings. The areas near 24th Avenue West, Lincoln Park City Park and the Harrison Community Club should have facilities installed that will calm traffic and allow easier crossing of 3rd Street. This area has very open sight lines, which give the motorist a higher comfort level when driving on this street. Planting boulevard trees can interrupt these site lines. Another effective traffic calming method is to install curb bulbouts or curb extensions. These curb bulbouts are normally installed at intersections or pedestrian crossings and allow pedestrians to get beyond parked cars to see oncoming traffic. Bulbouts also shorten the distance of the crossing. Both tree plantings and bulbouts fit within the character of the improvements identified in the *Lincoln Park – Third Street Corridor Revitalization Plan*.

Transit

Routes and Ridership

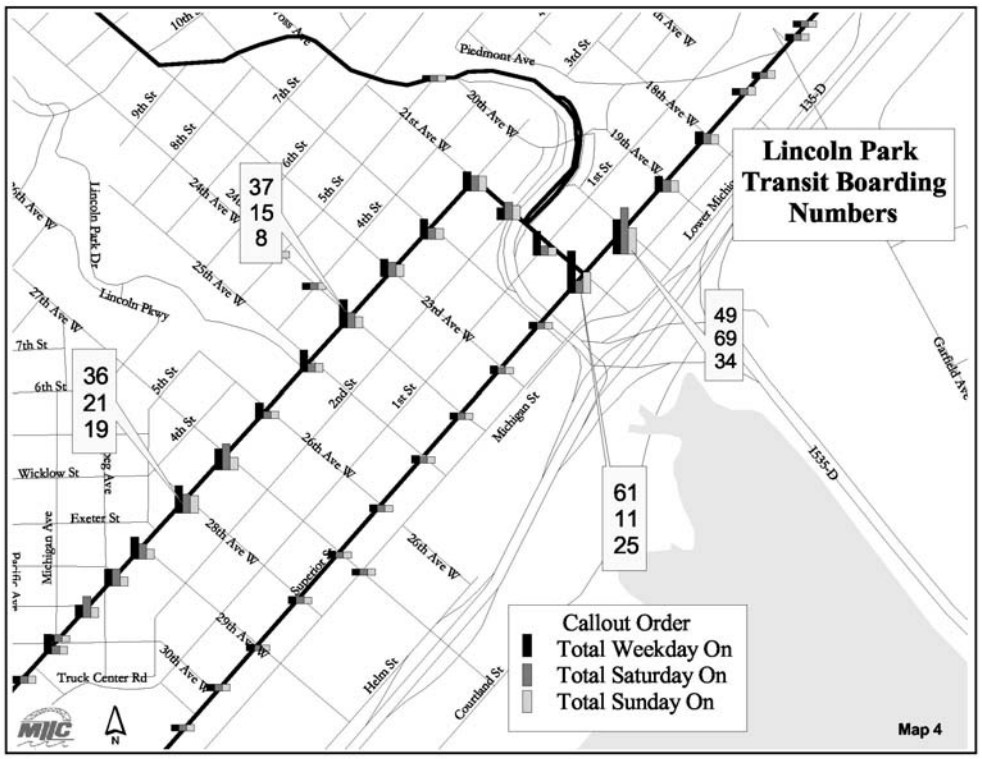
Lincoln Park is well served by transit with five major routes traversing the neighborhood including the West Mainline and Proctor (Routes 1, 2, 3), Ramsey-Raleigh (Route 4) and Piedmont (Route 9). Map 5 displays the routes in Lincoln Park. The West Mainline is the primary route with the most trips and highest ridership.

Table 2 – Lincoln Park Area Transit Routes

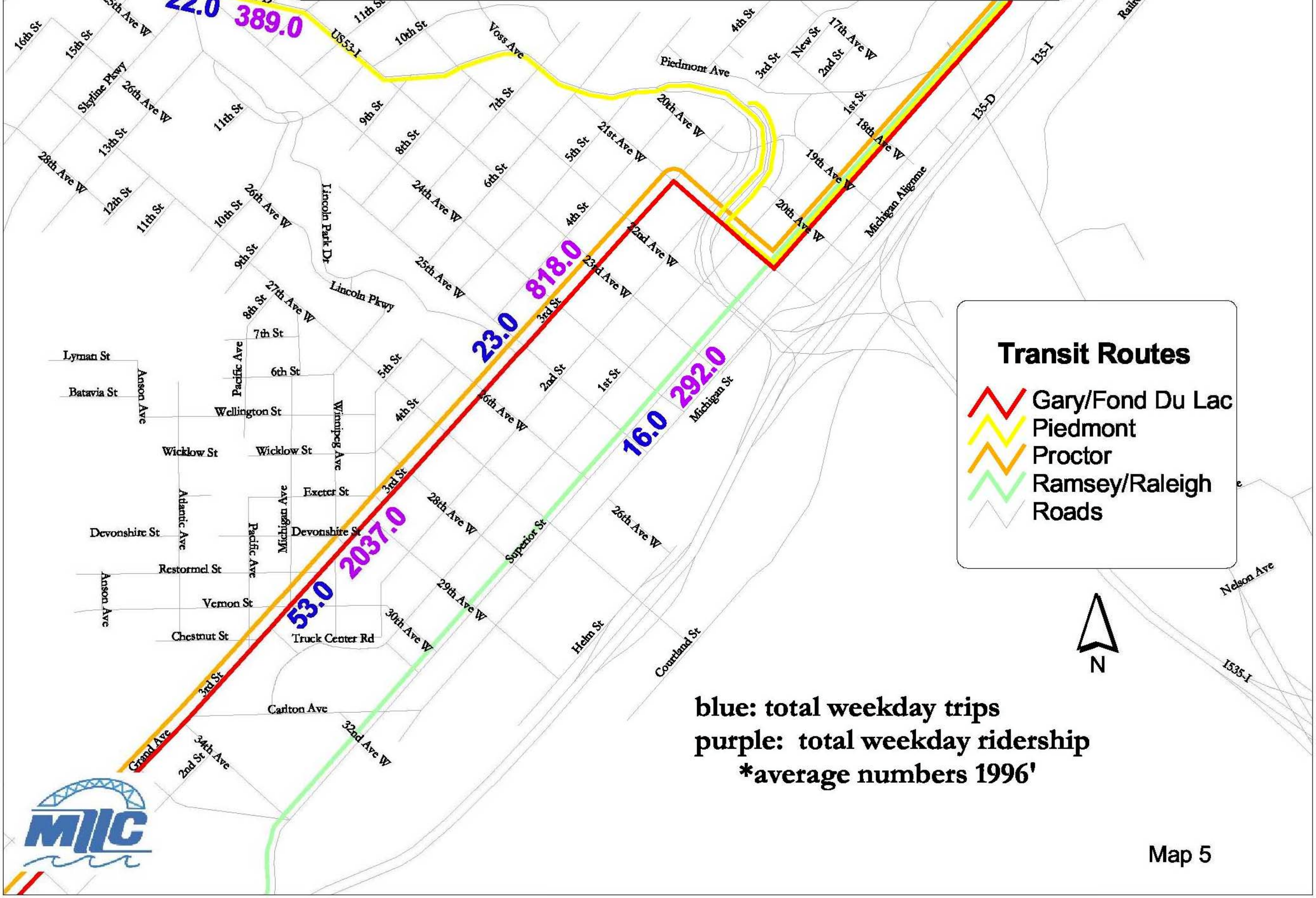
ROUTE	WEEKDAY TRIPS	WEEKDAY RIDERSHIP	AVERAGE RIDERSHIP
West Mainline (1, 2)	53	2,037	38.4
Proctor (3)	23	818	35.6
Ramsey-Raleigh (4)	16	292	18.25
Piedmont (9)	22	389	17.7

Passenger Boardings and Deboardings

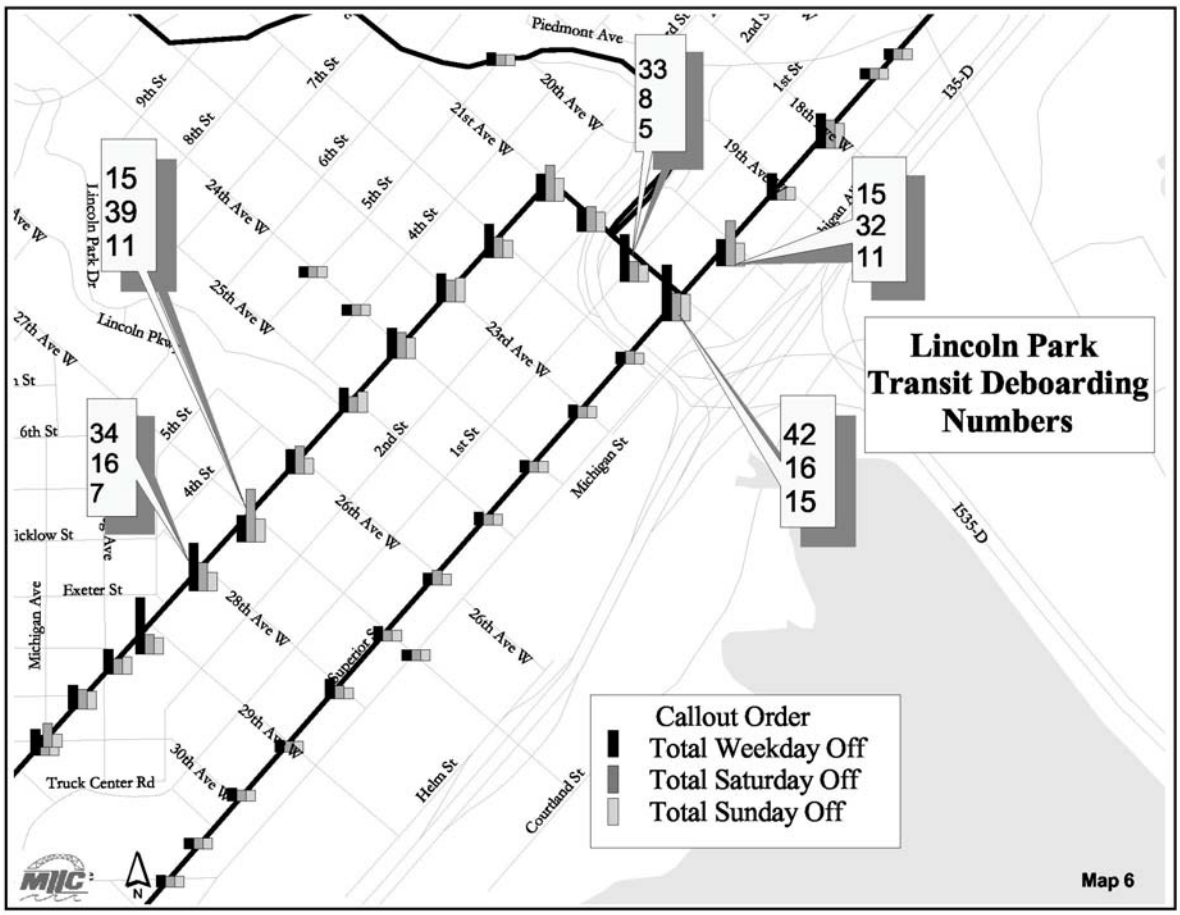
To get an idea of how transit is utilized in Lincoln Park, the number of people getting on and off (boardings and deboardings) were examined. Map 4 displays the total number of Lincoln Park boardings during the weekday, Saturdays and Sundays. The heaviest weekday boardings were on Superior Street at 21st and 20th Avenues West. All transit stops along West 3rd Street from Michigan Avenue to 21st Avenue West have strong weekday boardings. The Saturday and Sunday boarding numbers show that Superior Street and 21st Avenue West had exceptionally high numbers.



Lincoln Park Transit Routes & Ridership



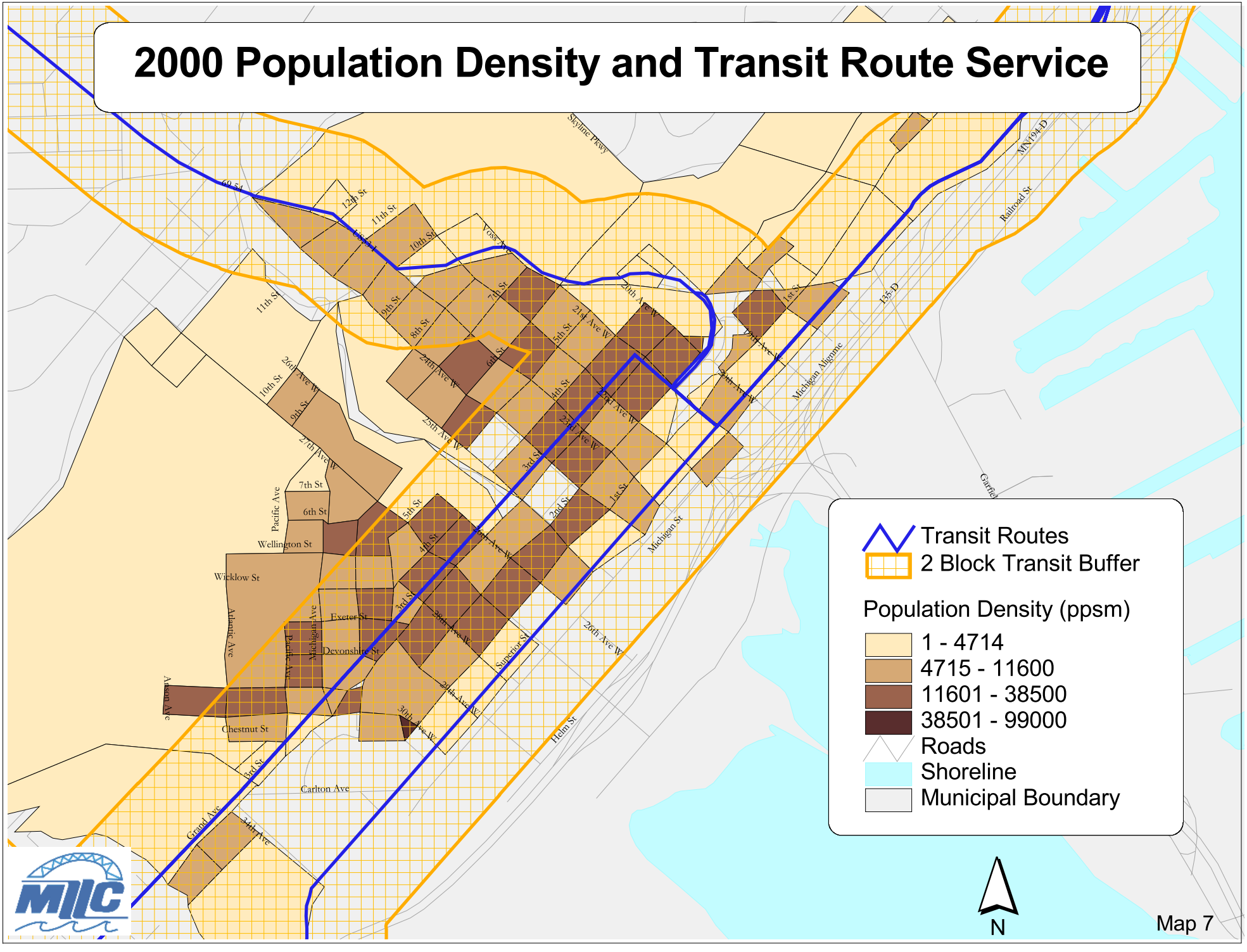
Map 6 displays the total number of passenger deboardings in Lincoln Park. The highest deboardings were seen in the Lincoln Park Business District on Superior Street, along 21st Avenue West and 3rd Street. Steady Saturday deboardings are displayed in the Lincoln Park Business District, along 21st Avenue West and 3rd Street likely indicating shopping and dining activities. The boarding and deboarding numbers show a strong transit usage for residents living in the West 3rd Street area and people working and shopping in the Superior Street Lincoln Park Business District.



Population Density and Transit Routes

One method to identify how well transit is serving an area is to examine route locations in relation to population density. People living within two blocks of a transit route are considered to be served by transit. All transit routes through the study area were mapped and a two-block buffer was created around the routes. This buffer was overlaid on a population density map generated from 2000 Census data. The results, shown in Map 7, indicate the neighborhood's most concentrated population areas are served by transit routes, which are generally accessible to all residents.

2000 Population Density and Transit Route Service



Current DTA Planning Efforts

The majority of the recommendations from the *Transit Vision* have been implemented; therefore, the process of developing a new "*Vision*" document is underway and efforts will extend well into 2003. To begin this process, a Comprehensive Operational Analysis (COA) of DTA services will be conducted during the spring of 2002. DTA, MIC, MnDOT, a Downtown Task Force and a consultant will be involved. The DTA will coordinate onboard passenger surveys to identify origins, destinations, as well as the locations where passengers are transferring and the rate that transfers are occurring. The MIC will assist in compiling this information and doing some data analysis. A consultant will then fully evaluate current DTA routing/service and will make recommendations.

The study will answer key service questions for the DTA such as:

- How is the DTA operating prior to the installation of new Intelligent Transportation Systems (ITS) technology ?
- Is the Downtown Transit Center in the best possible location, given that there are two major downtown generators (the downtown and the medical district)?
- Can the DTA decentralize and evolve its hub and spoke system and still offer the same level of service?
- How can the DTA increase efficiency and recovery time?

This study will answer these key questions and others possibly leading to future DTA service changes.

Intelligent Transportation Systems Initiatives (ITS)

One of the landmark recommendations from *Transit Vision* that the DTA is implementing is installing Intelligent Transportation Systems (ITS) technology, which will be fully operational by the fall of 2002. ITS technology incorporates advanced computer, electronics, and communications technologies to develop a safer and more efficient transportation network. Examples of ITS technology include Internet communications, global positioning systems (GPS), FM subcarrier broadcasting and dedicated short-range communications. Examples of ITS services include messaging boards displaying incident and traveler information, traffic and transit management and communications, electronic toll collection and advanced vehicle safety systems.

Duluth Transit Authority ITS Initiatives Overview

The Duluth Transit Authority has contracted with the Siemens Consulting Group for Phase 1 of its ITS installation program. The installation program will replace the DTA's radio system, which has outlived its performance life. The new system will include an automatic vehicle location interface, automatic passenger counters on ten buses, interfaces to on-board signs, voice

annunciation and interior bus destination signs. Once installed, bus stops will be announced automatically by a computer.

The consumer will see immediate benefits from this system including: real-time bus information on signs at major stops that will display the amount of time before the next bus arrives as well as real time information on the DTA's website. Signs will be located first in the Downtown, Mall and UMD transit centers.

Bus drivers will be able to interact using radio transmitters to call their own transfers, play on-board announcements, receive and transmit text messages, review schedules and receive continuous updates on their on-time performances. Depending on time performance information, drivers will be told if they should delay departure from a particular stop or move along to regain their timed position. The system will advise drivers of connecting transfer passengers and those in need of special assistance. There will be automatic next-stop enunciation and on-board video and sound surveillance. These systems will be coupled with recording devices and communication will be simultaneously relayed to central dispatch.

Public transit users will benefit from ITS implementation on DTA buses. The technology will improve customers' access to timely and accurate information. Fare payment will be more flexible and convenient allowing customers to plan trips over the Internet. Next bus arrival and departure times will be digitally displayed at transit centers and hubs indicating precisely when the next bus will arrive as computed from real-time readings of the bus's precise location and speed.

In Lincoln Park, plans call for three major shelters to be located along West 3rd Street. Two will be in the Harrison Community Club area with one for buses inbound to downtown and one outbound from downtown. Another inbound shelter will be located at 24th Avenue West. These shelters will have real time bus information signs in them alerting transit users to when the next bus can be expected.

Conclusion

Comparing the areas that are served by transit in the Duluth-Superior area shows that a few key areas receive exceptional transit service. These areas include the UMD campus, downtown Duluth, and the Lincoln Park area. Lincoln Park's proximity to downtown Duluth provides for numerous routes bisecting it, offering transit riders many connections to get downtown. The close distance also gets riders downtown in a short amount of time allowing timely transfers to other parts of town. Transit routes in Lincoln Park currently serve the residential areas with the greatest population density. Transit service in the Lincoln Park area provides residents, employees, and shoppers with a viable mobility option for those who don't drive or choose not to drive.

The DTA is beginning an exciting period with an update of the *Transit Vision* and implementation of the ITS program scheduled to be completed by fall 2002, both of which will improve transit service. Currently, the DTA provides excellent transit service for an area the size of Duluth-Superior.

Pedestrian

Good pedestrian facilities serve everyone. Whether you walk to your car, to the bus stop, or even to your destination, you are at some point utilizing a pedestrian facility. For every trip a community can get someone to walk, there is one less car on the road and less congestion for those who do choose to drive. Walking is also a pleasant form of exercise for many and encourages social interaction with others in the community. Communities can only benefit by ensuring that pedestrian facilities are not a secondary issue, but an equally important part of the transportation system.

Studies show walkable communities are friendlier and safer places to live. When streets and roads are safe and comfortable, communities enjoy an enhanced quality of life. Of special importance is the role sidewalks play in the lives of the community's children. Children must utilize sidewalks to get to all of their destinations, such as neighborhood homes and schools. A safe facility in good condition encourages kids to stay on the sidewalk and provides a barrier (generally a boulevard) from traffic in the street.

Unfortunately, many communities that were at one time "walkable" are becoming less friendly for pedestrians through neglect and improper redevelopment that fails to take pedestrians into account. Modern day development has shifted from a multimodal approach to serving the automobile almost exclusively. A traditional neighborhood is highlighted by small lot sizes connected with a network of walkways. In contrast, many new developments have large lots, wide streets, and no sidewalks for the community to travel on.

The same can be said of commercial development. Old commercial districts at one time were built with storefronts directly abutting the street, and all were connected by walkways that separated stores from the street. Pedestrians could access these areas easily and safely. Now commercial development has shifted to large buildings fronted not by sidewalks or streets, but by large fields of asphalt parking lots that are many times difficult if not impossible for a pedestrian to cross without concerns for safety.

Sidewalks

The information in this chapter is based on the January 2002 Duluth Sidewalk Inventory. Sidewalk information and recommendations were then tailored to the Lincoln Park study area. For more information about the sidewalk plan, which is arranged by Duluth's

Planning Districts visit http://www.ardc.org/plans/duluthsidewalk.asp or for interactive sidewalk mapping visit http://maps.ardc.org/duluthsidewalk.

The City of Duluth's sidewalk policy, as defined in the city charter, describes how sidewalk improvements are to be made and assessed. The policy calls for necessary replacement when public safety is at risk. Approximately ten to twelve years ago sections of the city's sidewalks were reviewed annually and property owners were notified by mail of necessary improvements. The City Council would then vote to order sidewalk improvement projects and properties were assessed for the replacement or leveling of hazardous sidewalks. Property owners were assessed for the work done in front of their property and assessments varied greatly as the project might replace all or none of the sidewalk depending on condition. As costs increased, this process was perceived as unfair and became politically unpopular. The sidewalk program then became voluntary. Notices were sent with water and gas bills explaining how to request sidewalk repairs. The numbers of sidewalk improvements made each year using this voluntary method has continually declined.

Community Development Block Grant (CDBG) funding has helped fund sidewalk replacement projects in one or more eligible neighborhoods annually. Eligible Duluth neighborhoods, as defined by census tracts and block groups with populations over 51% low to moderate income, include: East Hillside/Endion, Central Hillside, Lincoln Park, West Duluth, and Morgan Park. These funds are granted to central cities (of metropolitan areas) of 50,000 or more in population to revitalize neighborhoods. Eligible activities include improving housing, economic development, public facility improvements, and public services. The City of Duluth received $3.7 million in CDBG funding for 2001.

On state or federal aid street projects, sidewalks are eligible for either replacement or new installation. The City of Duluth is adding and repairing sidewalks wherever possible using these funds along with local funds. The City also coordinates with St. Louis County and MnDOT on projects within Duluth to include sidewalks where needed. The city's residential Street Improvement Program (SIP) began in 1994. For the first six years of this program, sidewalk replacement was done only at the request of property owners and assessed to them directly at 100% of the cost. SIP street projects were subsidized by the city so that the property owners paid only 25% of the street improvement cost. This policy was also unsuccessful and few sidewalk system improvements were made. Two years ago (1999), the policy was further refined to allow sidewalk improvements to be incorporated into SIP cost estimates. Sidewalk costs are now included into the overall SIP for the year and only add about $40,000 to a $6 million project budget. Sidewalk improvements are socialized into the overall program, everyone pays the same cost per front foot whether or not their sidewalk is replaced. With this policy, property owners now pay just 25% of the total improvement cost (both street and sidewalk). This program has been successful as residents have been getting a better final product and failing infrastructure is being tended to. This condition inventory and assessment will aid the program and the city will now have a GIS database depicting sidewalk conditions and can update this information as improvements are made to the system.

Study Methodology

A comprehensive sidewalk inventory was necessary to determine problematic areas within the city and support recommendations. In meetings with Duluth City Planners and Engineers, a data collection list was developed for integration into Geographic Information Systems (GIS). The final list included:

- The location and condition of all sidewalks (including worn paths)
- Location of pedestrian generators including:
  a) Schools
  b) Churches
  c) Parks and Recreation Areas
  d) Clinics
  e) Hospitals
  f) Community Centers
  g) Senior Centers
  h) Retail
- Bus Routes & Shelters
- Functional Classifications of adjacent roadway facilities

A well-worn pedestrian path located adjacent to a bus stop.

In analyzing neighborhood map information, an assessment matrix was developed displaying recommendations in two categories: *sidewalk system gaps* (missing sidewalk segments and areas which could connect neighborhoods) and *key sidewalk preservation areas* (poorly rated and highly used sidewalks near multiple pedestrian generators). Within the assessment matrix (see Table 5) three tiers of data are used to assess sidewalk importance: functional classification, pedestrian generators and transit service.

Poor sidewalk conditions within a two-block radius of multiple pedestrian generators were considered priority areas for sidewalk repair. These areas were identified using GIS overlay analysis in Spatial Analyst. This was done in an effort to correlate the most highly used sidewalks that were in the worst condition. These areas were identified as "Key Preservation Areas" within each Duluth Planning District.

Data Collection Method

Rating sidewalk condition is subjective in nature and all efforts were made to ensure sidewalks were rated equally and fairly. Sidewalks were assessed visually by surveyors while driving down Duluth streets. Sidewalks were given one of three ratings based on the following:

An example of a sidewalk rated as Good.

Good—sidewalk is structurally sound and provides a safe route for pedestrians. Examples include newly repaired or constructed sidewalk segments.

An example of a sidewalk rated as Fair.

Fair—sidewalk is showing signs of structural deterioration and may need attention within five to ten years. Minor uplifting and cracks may be present but safety of the walkway is not compromised.

Poorly rated sidewalk, which is heaving.

Poor—sidewalk is in need of immediate repair. Areas on the walkway have succumbed to sinking, heaving, or present multiple tripping hazards. Neglected sidewalks overgrown by grass were considered poor.

An example of poorly rated sidewalk which is overgrown with grass.

To ensure consistency, surveyors spent time together rating the same walkways in order to standardize their rating methods. Surveyors were used to gather all information in the city. Once the inventory was complete, surveyors field-checked the entire city to standardize the ratings given to the sidewalks.

Sidewalk conditions in Lincoln Park, Planning District Three are comparable to other Duluth planning districts with the majority of sidewalks in fair or poor condition. Lincoln Park had the fewest miles of sidewalks in good condition.

Table 3 - City of Duluth Sidewalk Conditions by Planning District

Planning District	*Miles of Poor*	*Miles of Fair*	*Miles of Good*	*Total Sidewalk Mileage*	*Percent Poor*
1: FondDu Lac/Gary/Morgan Park/Riverside	18	16.3	4.7	39	46%
2: Fairmont/Spirit Valley/Denfeld/Oneota/Bayview	19	19	18.1	56.1	34%
3: Lincoln Park	15.9	14.4	3.6	33.9	47%
4: Piedmont and Duluth Heights	1.9	6.6	4.3	12.8	15%
5: Central Hillside and Park Point	20	19.6	9.9	49.5	40%
6: East Hillside	13.3	16.7	5.6	35.6	37%
7: Congdon	16.4	16.9	10.9	44.2	37%
8: Woodland/Hunters Park	8.7	7.9	4.1	20.7	42%
9: Lakeside/Lester Park	23.9	13	4.3	41.2	58%
10: UMD/Chester Park	6.9	8.4	4.5	19.8	35%
TOTALS	***Total Miles of Poor***	***Total Miles of Fair***	***Total Miles of Good***	***Total Miles of sidewalk in Duluth***	***Total City Percent Poor***
	88.1	**92.6**	**46.2**	**226.9**	**39%**

Sidewalk Recommendations for Lincoln Park

The following section contains the recommended sidewalk improvements and maps displaying the information gathered about sidewalk conditions in Lincoln Park. The overall condition of sidewalks was examined as well as gaps in the sidewalk system and key areas that should be maintained in good condition given surrounding land use characteristics.

Table 4 - Planning District 3
Sidewalk Condition Summary

	Approximate miles based on average length of blocks in the neighborhood	*Percentage of neighborhood sidewalk miles belonging to each category rating*
Sidewalks rated as "Good"	3.6 miles	11%
Sidewalks rated as "Fair"	14.4 miles	42%
Sidewalks rated as "Poor"	15.9 miles	47%
Total Miles of existing sidewalk	approximately 33.9 miles	

Overall Condition
The majority of sidewalk conditions in Lincoln Park are in poor (47%) to fair (42%) condition. Approximately two miles of new sidewalk construction is recommended for the neighborhood.

System Gaps & Characteristics
Lincoln Park is eligible for CDBG funding and has effectively utilized these funds to improve ailing

sidewalks. Although the sidewalk system is well developed, there are a few gaps impeding the sidewalk system from being comprehensive (see Map 8). Those areas include:

- *Superior from 34th Avenue West to 28th Avenue West (gaps)*
  Superior Street is a major collector and if sidewalks were constructed here pedestrians would have a safe route along a busy street as well as access to transit service and retail.

- *3rd Street from 18th Avenue West to east of 17th Avenue West (existing sidewalk)*
  If constructed, this segment would improve neighborhood connectivity between Lincoln Park, Piedmont and Observation Hill and would link existing sidewalk systems.

- *26th Avenue West from 1st Street to 3rd Street*
  No sidewalk exists in this segment and a well-worn pedestrian path is visible. This area provides access to transit service and would benefit from sidewalk construction.

- *Piedmont from 18th Avenue West to 3rd Street*
  This is a gap in the connectivity of the pedestrian network of Lincoln Park. The terrain may impede the construction of this segment, however the new alignment of Piedmont will reopen this route to travel and may necessitate the construction of a safe sidewalk route.

- *Winnipeg Avenue from Grand Avenue to Exeter*
  This is a gap in the connectivity of the pedestrian network in Lincoln Park.

Key Preservation Areas

It is critical to first fix those poorly rated areas that are used the most and located near various pedestrian generators (see Map 9). Those segments include:

- *Piedmont from Garfield to 1st Street*
  Piedmont is a minor arterial and this poor section of sidewalk serves a church, park, retail and transit (shelter present).

- *Michigan Street from 18th Avenue West to Lower Michigan*
  Michigan Street is a minor arterial and poor sidewalks in this section serve retail, a church and provide access to transit service (via steps up to Garfield).

- *1st Street from 22nd Avenue West to 14th Avenue West*
  First Street is a minor arterial and poor sidewalk in this area serves a park and retail.

- *3rd Street from Devonshire to 21st Avenue West*
  Third Street is a major collector route and poor sidewalk segments here serve a church, park, community center, retail and transit service (shelter).

- *21st Avenue West from Superior to 2nd Street*
  Sidewalks here run along a major collector and serve a church, retail and transit service (shelter present).

- *27th Avenue West from 3rd Street to 5th Street*
  Sidewalks along this major collector were in poor condition and provide access to a church, park and transit service (shelter also present).

- *Superior from Garfield to Lower Michigan*
  Poor sidewalks along this major collector serve a church, retail and provide access to transit to service (shelter nearby).

- *20th/19th Avenue West from 1st Street to 4th Street*
  Poor sidewalks along this major collector serve a senior center and retail.

- *Michigan Avenue from Devonshire to 3rd Street*
  Sidewalk here was found in poor condition and serves a park, community center, retail and transit service (shelter nearby).

- *Vernon/30th Avenue West from 1st Street to 3rd Street*
  This poor section of sidewalk provides access to a park, community center and transit service (shelter nearby).

- *28th Avenue West from 1st Street to 3rd Street*
  Sidewalk here was found in poor condition and provides access to retail and transit service.

- *Chestnut from Winnipeg to Grand Forks*
  Sidewalk here was found in poor condition and provides pedestrians with access to a park, community center and transit service.

- *Grand Forks from Chestnut to Vernon*
  Poorly rated sidewalk segments here serve a park, community center and transit service.

- *Devonshire from Pacific Avenue to Winnipeg*
  Poorly inventoried sidewalk here provides access to transit service and a shelter facility.

- *Exeter from Grand Forks to Michigan Avenue*
  Poor sidewalk here provides pedestrians access to transit service.

Citizen Recommendations

In the spring of 2003 the reconstruction of Piedmont Avenue will begin. The construction of a pedestrian underpass has been incorporated into this project. As a result, after the release of the *Duluth Sidewalk Inventory*, Lincoln Park citizens wanted to ensure proper access to this facility. Citizens felt that the following areas, which

currently don't have new sidewalks, should be constructed in preparation for increased pedestrian traffic to this underpass facility. Citizen suggestions included:

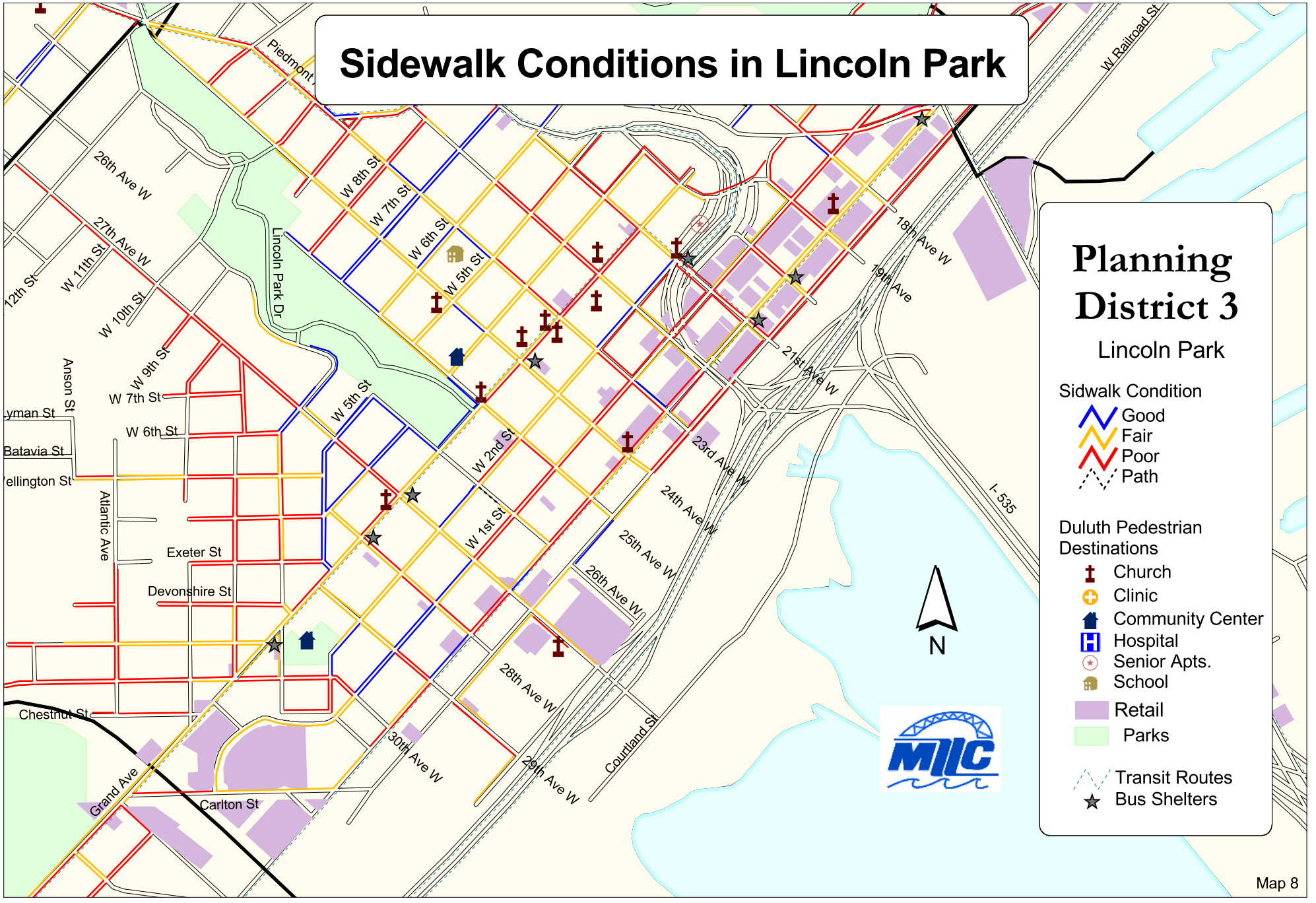
- *22nd Avenue West from 10th Street to 11th Street*
  Gap should be constructed in preparation for increased pedestrian traffic to the Piedmont underpass.

- *West 10th Street between 22nd Avenue West and Voss Street*
  Gap should be constructed in preparation for increased pedestrian traffic to the Piedmont underpass.

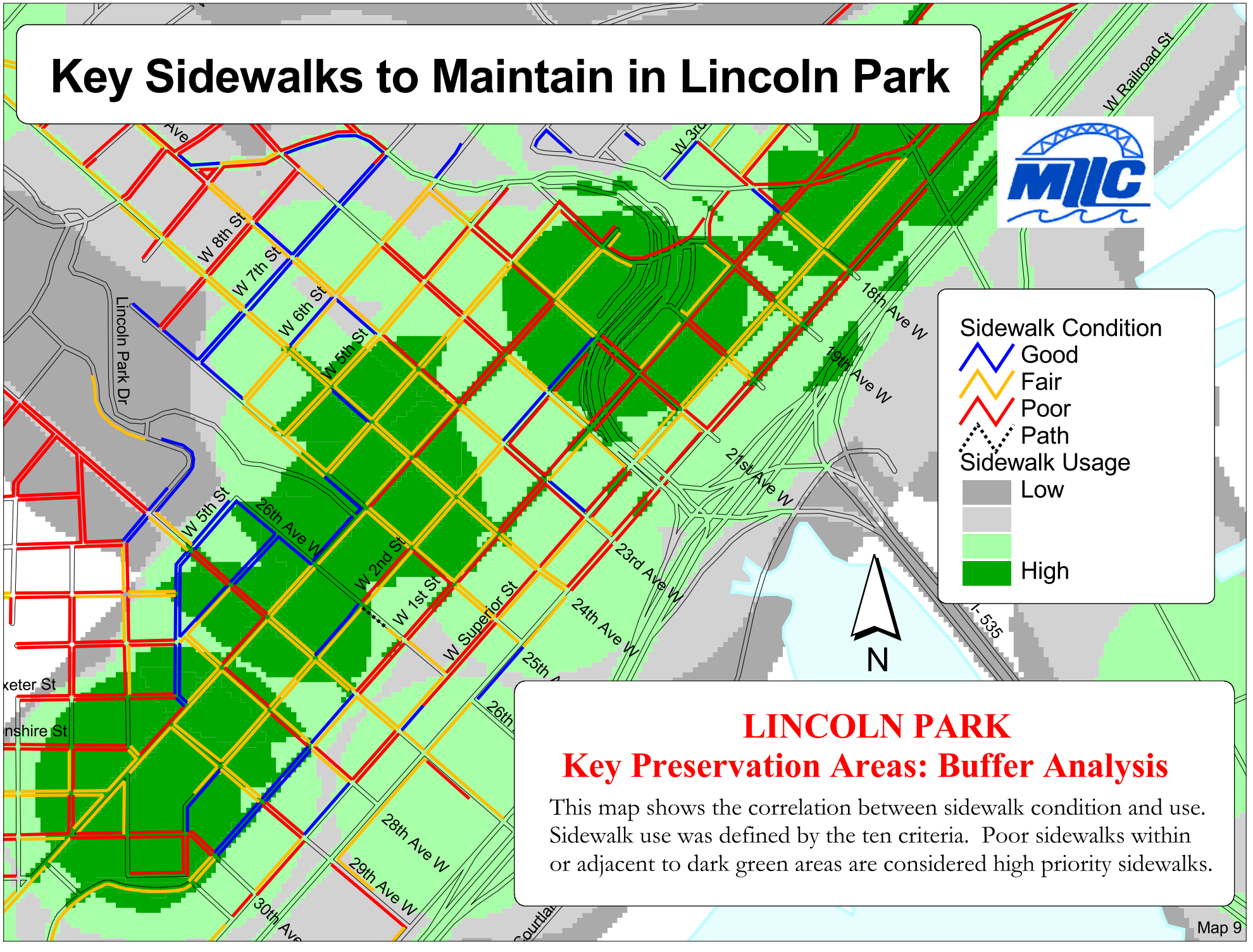
Conclusion

With thirty-nine percent of the city's sidewalks in poor condition, the City of Duluth will need to prioritize which repairs are most pressing in Lincoln Park compared with the rest of the city's sidewalks. The City of Duluth will be developing a program for upgrading and maintaining sidewalks across the entire city and the recommendations from Lincoln Park will be part of the citywide plan.

In comparison to other elements of the Lincoln Park transportation network, the pedestrian element is in need of upgrading. Connectivity from schools to residential areas, specifically crossing of busy roads should be a priority. Connectivity from residential areas to the 3rd Street and Superior Street business areas is also important. Another area of focus should be pedestrian connections to transit routes. Transit functions as a significant element in the transportation system in Lincoln Park and all transit trips begin and end with a pedestrian trip. Overall, with a few crossing improvements and upgrades in the overall condition of the sidewalk network, the pedestrian environment should improve considerably. To achieve the goals outlined in the *Lincoln Park – Third Street Corridor Revitalization Plan* and the *Lincoln Park Business District Michigan Street Realignment Corridor Strategic Vision,* the pedestrian environment needs to be upgraded.


Sidewalk Conditions in Lincoln Park
Planning District 3
Lincoln Park
Sidwalk Condition
Good
Fair
Poor
Path
Duluth Pedestrian Destinations
Church
Clinic
Community Center
Hospital
Senior Apts.
School
Retail
Parks
Transit Routes
Bus Shelters
N
MIC
Map 8
26th Ave W
27th Ave W
W 11th St
W 10th St
W 9th St
W 8th St
W 7th St
W 6th St
W 5th St
W 2nd St
W 1st St
Lincoln Park Dr
Piedmont
12th St
Anson St
yman St
Batavia St
ellington St
Atlantic Ave
Exeter St
Devonshire St
Chestnut St
Grand Ave
Carlton St
30th Ave W
29th Ave W
28th Ave W
26th Ave W
25th Ave W
24th Ave W
23rd Ave W
21st Ave W
19th Ave
18th Ave W
Courtland St
W Railroad St
I-535

Key Sidewalks to Maintain in Lincoln Park



LINCOLN PARK
Key Preservation Areas: Buffer Analysis

This map shows the correlation between sidewalk condition and use. Sidewalk use was defined by the ten criteria. Poor sidewalks within or adjacent to dark green areas are considered high priority sidewalks.

Table 5

LINCOLN PARK SIDEWALK ASSESSMENT MATRIX	Functional Classification	Functional Classification	Pedestrian Generators									Transit	
		Functional Classification	Serves a School	Serves a Church	Serves a Park	Serves a Clinic	Serves a Hospital	Serves a Community Center	Serves a Senior Center	Serves Retail	Provides neighborhood connectivity	Gaps in Continuity/Safe Segments	Within 2 blocks of a Transit Route	Serves a Bus Shelter
PLANNING DISTRICT 3:														
Lincoln Park 3A:														
Key Preservation Areas (poor sidewalks w/in 2 blocks of attractions)														
Piedmont from Garfield to 1st St	MA		X	X					X			X	X	
Michigan St from 18th Ave W to Lower Michigan	MA		X						X			X	X	
1st St from 22nd Ave W to 14th Ave W	MA			X					X					
3rd St from Devonshire to 21st Ave W (poorly rated)	MC		X	X			X		X			X	X	
21st Ave W from Superior to 2nd St	MC		X						X			X	X	
27th Ave W from 3rd St to 5th St	MC		X	X								X	X	
Superior from Garfield to Lower Michigan	MC		X						X			X	X	
20th/19th Ave W from 1st St to 4th St	MC							X	X					
Michigan Ave from Devonshire to 3rd St	local			X			X		X			X	X	
Vernon/ 30th Ave W from 1st St to 3rd St	local			X			X					X	X	
28th Ave W from 1st St to 3rd St	local								X			X	X	
Chestnut St from Winnipeg to Grand Forks	local			X			X					X		
Grand Forks from Chestnut St to Vernon	local			X			X					X		
Devonshire from Pacific to Winnipeg	local											X	X	
Exeter from Grand Forks to Michigan Ave	local											X		
Sidewalk System Gaps:														
Superior St from 34th Ave W to 28th Ave W (gaps)	MC								X		X	X		
3rd St from 18th Ave W to E of 17th Ave W	local			X						X	X			
26th Ave W from 1st St to 3rd St	local										X	X		
Piedmont from 18th Ave W to 3rd St	local										X			
Winnepeg Ave from Devonshire to Exeter	local										X			
Citizen Recommendations (in preparation for Piedmont Underpass):														
22nd Avenue West from 10th St to 11th St	local			X								X		
W 10th St from 22nd Avenue West to Voss St	local											X		

Bicycle

This chapter contains a description of a federally funded project that will sign bike routes throughout the cities of Duluth and Hermantown, to be constructed in the summer of 2002. The project does not include the construction of any off-street bike trails or the inclusion of on-street dedicated bike lanes; its intent is to identify and sign the routes that were determined to be the most bike-friendly. This plan was designed to provide connectivity between areas of Duluth and Hermantown and provide the bike commuter with a signed route that will allow cross-town travel. The presence of signage will provide information for the bicyclist as well as alert motorists to expect bikes along the routes. For the purposes of this study, we will show how the routes connect to the Lincoln Park area.

Also described in this chapter is a brief explanation of efforts to connect the Munger Trail to the Lakewalk with a non-motorized trail.

On-Street Bike Route Project

The bike route project utilized a model developed by the Federal Highway Administration (FHWA) that rates roads for bike compatibility. This model and a description of the model were contained in the report The *Bicycle Compatibility Index: A Level of Service Concept, Implementation Manual, Publication # FHWA-RD-98-095 – December 1998.* It was created to provide communities with a tool to help them develop road facilities that are friendly to bicyclists.

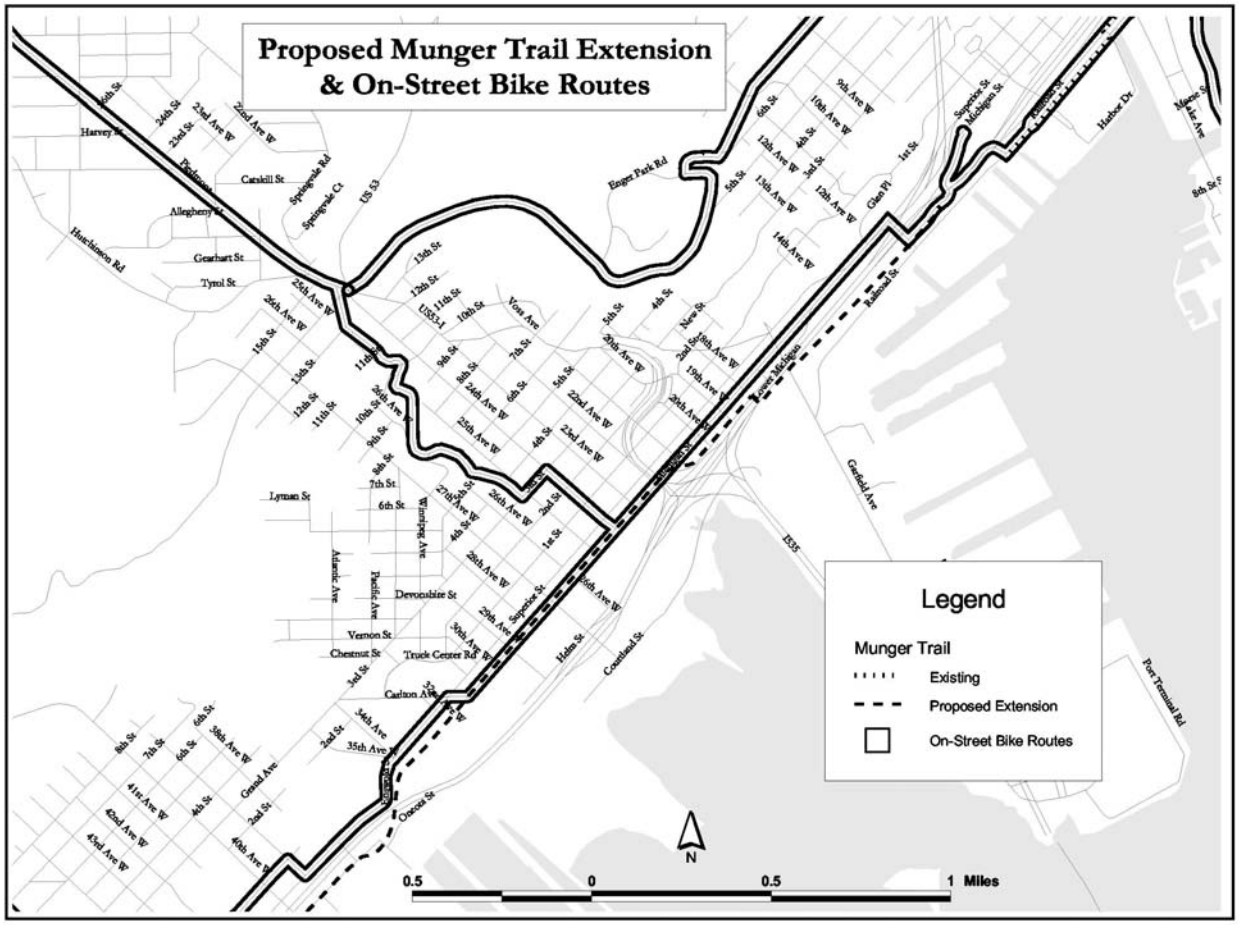
Bicycle Compatibility Index (BCI) Model Explanation
The BCI was developed to allow practitioners to evaluate existing facilities in order to determine what improvements may be required as well as determine the geometric and operational requirements for new facilities. It is designed to measure "bike friendliness" of roadways. Data that was entered into the model includes:

- Number of lanes in one direction
- Curb lane
- Bicycle lane width
- Paved shoulder width
- Residential areas
- Speed limit
- Traffic counts
- Large truck percentage
- Amount of truck traffic
- Amount of traffic turning right
- Presence of parking lanes
- Parking occupancy percentage
- Parking time limits

The results of the BCI model were used to develop a candidate list of streets for on-street bike routes. MIC staff worked with local bike advocates and engineering staff from Duluth and Hermantown to finalize a route system (see Map 10) that provided connectivity, safety, and opportunity for bicycle commuters.

On-Street Signed Bike Routes – Lincoln Park Area

The bike route from Hermantown connects to Skyline Drive at Piedmont Avenue and splits – one route following Skyline Drive to the east and one route following Lincoln Park Drive down the hill to West 3rd Street. Once the route reaches West 3rd Street, it goes east to 24th Avenue West and continues down to Michigan Street where the route goes east and west. The easterly route follows Lower Michigan Street to Superior Street and crosses I-35 on the pedestrian overpass. Bicyclists starting in the Lincoln Park area have the choice of traveling east or west along Michigan Street and Lower Michigan Street to travel to West Duluth or to the Canal Park area. Other choices include going up Lincoln Park Drive to Skyline Drive or Piedmont Avenue and eventually the Miller Hill area or Hermantown. The routes were designed with east-west options on top of the hill and down at the lake level.



Munger Trail Extension to Lakewalk

The proposed extension of the Munger Trail to the Lakewalk is a non-motorized trail to accommodate hikers, bikers, and rollerbladers. This trail would provide a strategic connection and ultimately a cross-town off street system of trails that would allow recreational users a route across the city. Currently this project is in the planning stages. Right-of-way issues are being analyzed to determine the best short-term route. This short-term route (see Map 10) may include a number of on-street segments. The area near Lake Superior Paper would include an on-street section that would follow Central Avenue, Bristol Street and Mike Colalillo Drive. In the Lincoln Park area, the trail would be on-street along Michigan Street from Carlton Street to Lower Michigan Street. The route would follow Lower Michigan Street to 18th Avenue West where it would go under the freeway and back on to rail right-of-way. This on-street segment would allow access to the Lincoln Park Business District. Long-term plans include having all sections of the trail off-street.

Conclusion

The on-street bike routes and the potential expansion of the Munger Trail will be a benefit to the Lincoln Park area. On-street bike routes will provide another commuting option for area employees. Combined with the option of bike racks on DTA buses, bike commuters can also utilize transit. Development of the Munger Trail extension will provide opportunities for Lincoln Park residents to access recreational biking trails as well as opportunities for area businesses to provide goods and services for bike trail users. The provision of signage and amenities such as bike racks and street benches will aid in making bicyclists feel welcome.

Street benches along West Superior Street

Lincoln Park Business District Parking

Introduction

Lincoln Park Business District parking is comprised of on- and off-street parking (lots). The operation of on-street parking affects off-street parking behaviors and vice versa. Parking management involves the day-to-day functions that strive to make these two systems work effectively. Enforcement, collection of fines and fees, signs, marketing, security, as well as the installation, maintenance and collection of revenues from meters are all part of parking operations. All core commercial areas need a parking management system that assesses, maintains and improves the effectiveness of on-street and off-street parking, whether publicly or privately owned. Managing parking is a balancing act between the needs of consumers, business people and the community-at-large.

Cost of Parking

Parking is expensive. One way to lessen the demand for parking is to charge the true cost of providing it. Charging less than the true cost of creating parking (i.e. subsidized parking) generates more demand. If parking spaces were treated like other goods, new parking would not be constructed until those demanding the parking were willing to pay slightly more than the cost of creating additional parking. According to the Federal Transportation Program Handbook, the cost of surface parking construction in most urban areas is about $1,000 per space. In this case, a 100-space lot constructed at a cost of $1,000 per space would have to charge around $83 per space per month to break even. Even in Downtown Duluth where parking demands are higher, prices for monthly parking rarely exceed $60.

Constructing ramps is even more expensive ($9,000 - $12,000 per parking space) and tends to only be economically feasible in areas with high land values and limited open space. Two new Downtown Duluth parking ramps opened in 2000, the Technology Village Ramp and the Duluth Entertainment and Convention Center (DECC) ramp. The Technology Village Ramp accommodates 605-spaces at a cost of approximately $7.6 million, which is around $12,500 per space. The DECC constructed their ramp on an existing surface lot yielding a net gain of 500 additional parking spaces at a cost of $4.5 million or $9,000 per new space. The topography and site conditions of a proposed construction site can dramatically alter the cost. In addition to construction costs, there are operation and maintenance costs, land costs, and property tax costs. As an example, the Fond-Du-Luth Ramp's annual operation and maintenance (O&M) cost is approximately $175,000, roughly $540 per space. Land cost and property taxes also add expenses to parking.

Given the significant financial resources involved, the decision to construct additional parking spaces should not be taken lightly. Because parking facilities are not cheap, alternatives to building more parking need to be evaluated first. By assigning a dollar figure to additional parking, a base line cost is set for reviewing alternatives. By examining parking needs in this fashion, the value of parking spaces comes to the

forefront, and allows us to develop a better understanding of when and how much parking is actually needed.

Parking Restrictions

Parking restrictions include time limits, parking meter rates, drop-off zones, and loading zones. The type and combinations of on-street parking restrictions used depends primarily on traffic movement and the width of the street. Greater restrictions are generally required for roadways that are major through routes. With the completion of Lower Michigan Street, streets in the Lincoln Park Business District primarily serve local traffic making utilization of on-street parking easier.

If parking restrictions were eliminated, the demand for parking would far outweigh current supply. The most convenient spaces would be filled by workers on a first come first serve basis, in effect preventing customer parking. On the other hand, no one benefits if parking restrictions are so stringent that spaces are underutilized. Therefore, parking restrictions and policies need to be balanced to help achieve the long-term goal of creating an economically vital and attractive business district. Generally, the optimimun occupancy rate that decision makers should aim for is around 80 to 90 percent in order to instill confidence among parking users that they will be able to find available parking to serve their needs.

Time Limits

Time restrictions on parking are intended to maximize turnover of the most convenient and, therefore, the most valuable parking spaces. Because retail trade and businesses are considered vital components to maintaining a vibrant business district, it is generally thought that the most convenient parking should be reserved for customers. Studies have shown that the average duration of a shopping or business trip is 90 minutes. Thus, time limits of one or two hours should be sufficient to maximize the use of on-street parking where the goal is to encourage turnover of five or more vehicles per space per day. Even though numerous studies have shown 75 to 80 percent of on-street parking stay for one hour or less, even in areas without time limits, it is often difficult to convince merchants to accept parking limits of less than two hours.

Parking Meters

There are several reasons for using meters. Parking meters serve the following purposes:

1. Promote parking turnover.
2. Distribute limited on-street parking time equitably.
3. Provide space for short-term shopper and business clients.
4. Maximize the economic viability of core commercial areas by providing opportunities for more people to park conveniently.
5. Generate revenue, which can be used to offset parking operation, maintenance and enforcement costs.
6. Are more self-enforcing. In general, most people try to abide by time limits imposed by parking meters, which may reduce the amount of personnel required for enforcement.

7. Allow the opportunity to price parking similar to other goods by using market-based principles, which can better optimize supply of and demand for parking facilities.

A common attitude toward parking meters is that they discourage shoppers, who will then drive to suburban malls instead. Therefore, the logic is that all areas must have free parking to successfully compete with suburban malls. As previously discussed, there is no such thing as "free parking" anywhere. The cost of parking at malls, while not charged directly to parking users, are hidden in higher rents or building costs to retailers who pass them on indirectly to customers. Because these developments tend to locate on less expensive green-space land, they are able to create parking more cheaply than downtown businesses. By offering free-parking downtown, operations, maintenance and enforcement costs are likely to be transferred to taxpayers through higher property taxes.

Appropriate parking rates and time limits for on-street parking, with the use of modern, well-maintained meters, offer the most cost-effective method of encouraging the desired parking turnover of vehicles. Generally, on-street parking rates should be higher than off-street parking rates to encourage the use of off-street facilities for long-term parking and preserve on-street spaces for short-term users. Parking rates should also be high enough to cover the operation, maintenance and enforcement costs.

Study Methodology

The first step of this study was to inventory all parking areas within the parking study area (see Map 11). The study area boundaries are 22nd Avenue West, Lower Michigan Street, Garfield/Piedmont Avenue and the alley above West 1st Street (2nd St. Alley). All designated parking areas are included in the inventory.

The inventory was digitized into a Geographic Information System (GIS), which is a computerized mapping program that has data connected to spatial information. Once staff had the information mapped, occupancy surveys were conducted only on those lots with public parking spaces. On an hourly basis from 8 a.m. to 5 p.m., staff counted the number of parked cars in each public parking lot and on-street parking space. Counts were conducted over three weekdays during October 2001, as spring and fall are generally considered "normal activity times" of the year.

A total of 1,235 parking spaces were counted within the study area. Approximately 860 parking spaces are available to the general public. On-street parking can accommodate 348 vehicles. Another 512 spaces serve a combination of customer and employee parking. Staff counted 80 parking meters in Lincoln Park. The majority of meters charged 25 cents an hour, however a few charged 25 cents for 15 minutes. Metered parking comprised 9 percent of all parking spaces available to the general public.

Individual Block Summaries

Parking in the Lincoln Park Business District is affected by multiple factors that draw people to park in certain areas more than others. Likewise, individual blocks of the district have unique characteristics that dictate how parking is utilized. Each block

throughout the district has varying amounts of available parking with differing levels of demand. Examining the levels of demand along with factors such as price, availability and location give an excellent snapshot of how a block currently functions within the larger picture of business district parking. Information gathered will depict ways to better utilize the parking available in a particular area. Given that most of the parking in the study area is free, with the exception of the metered on-street parking, the price of parking has very little effect on the demand for parking. Parking availability and location has a greater influence on parking demand in Lincoln Park than it does in downtown Duluth.

Blocks were determined by using the centerline of the street as the dividing line between blocks. For example, on-street parking along the west side of 21st Avenue West between Superior Street and 1st Street would be in Block B-1 and on-street parking on the east side of 21st Avenue West is in Block B-2. Each block is summarized, by calculating the total amount of customer and employee parking, customer and public parking, and the maximum occupancy rate of these spaces. Maps of the blocks identify all available parking areas and their maximum capacity. The **maximum occupancy rate is defined as the highest percentage of spaces filled on any given day during the three-day occupancy counts between the times of 8 a.m. and 5 p.m.** Lots that are restricted from general public use were not counted. Each block has a corresponding graph depicting by hour the average daily occupancy rates for public accessible parking spaces. This **average daily occupancy rate is an average of parking space usage over the three days of occupancy counts.** The graphs also indicate the effective-capacity rate, which shows when parking lots, for all practical purposes, are full. Effective capacity is generally defined as between 85 percent and 95 percent occupancy. **This study defines effective capacity as 90 percent occupied.**

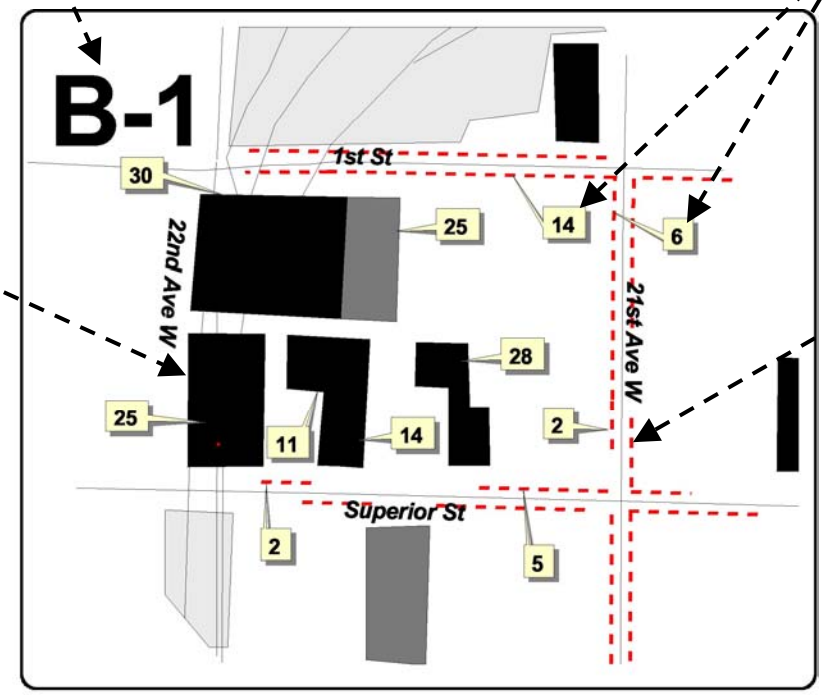
How to Read the Individual Block Maps

Block ID
Can be referenced to Map11 – Block ID Map on next page.

Callout boxes
Identifies the number of spaces in the specified parking area.

Off-street parking
Shaded polygons inside the block represent off-street parking facilities. The fill pattern identifies parking type.

On-street parking
Dashed lines adjacent to streets identify areas where on-street parking is allowed.



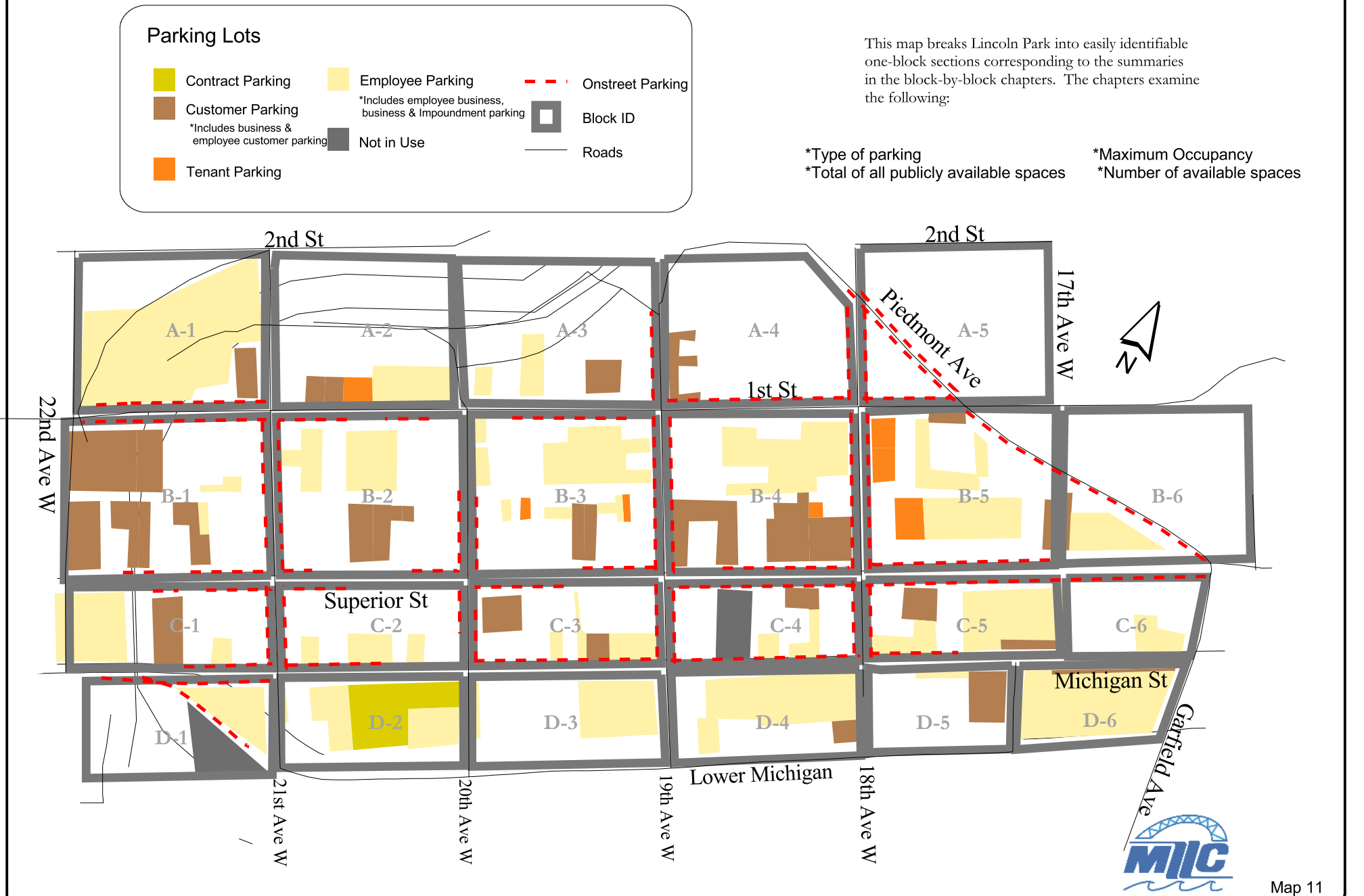
Parking Types
Identifies inventoried parking types differentiated by fill pattern.

	# of Spaces	Maximum Occupancy Rate
Onstreet Parking	29	50.2%
Parking Lots		
Customer Parking	108	25.7%
Customer/Employee	25	
Public Parking		
Total Spaces	162	All Public Accessible Spaces 38.0%

Total number of spaces available to the public on this block.

Maximum Occupancy Rate
The highest percentage of parking spaces that were occupied on a given day. The accompanying graph for each block shows the change in the occupancy rate over an entire day.

Lincoln Park Parking Lot & Onstreet Locations: Block Identification

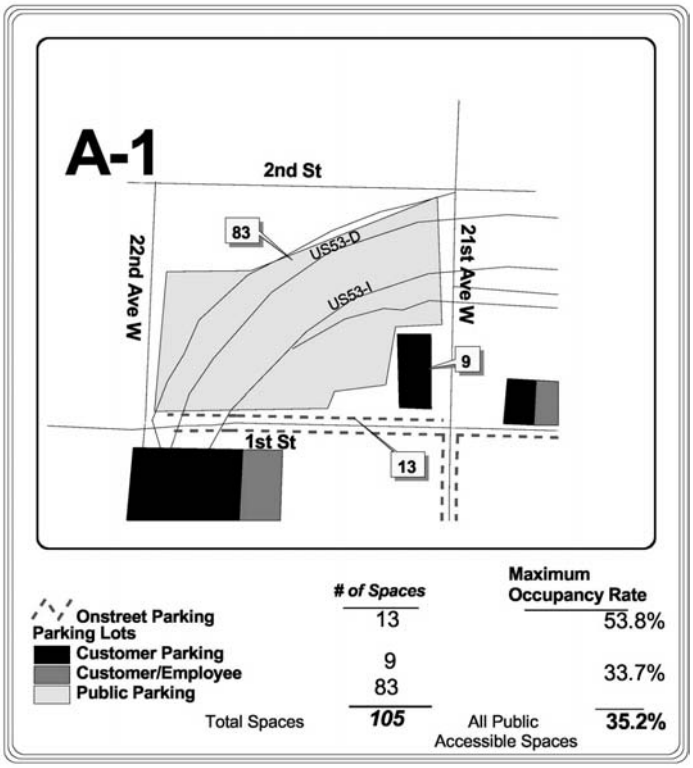


Block-by-Block Summary

Row "A" (Between 1st Street and 2nd St. Alley from 22nd Avenue West to Piedmont Avenue)

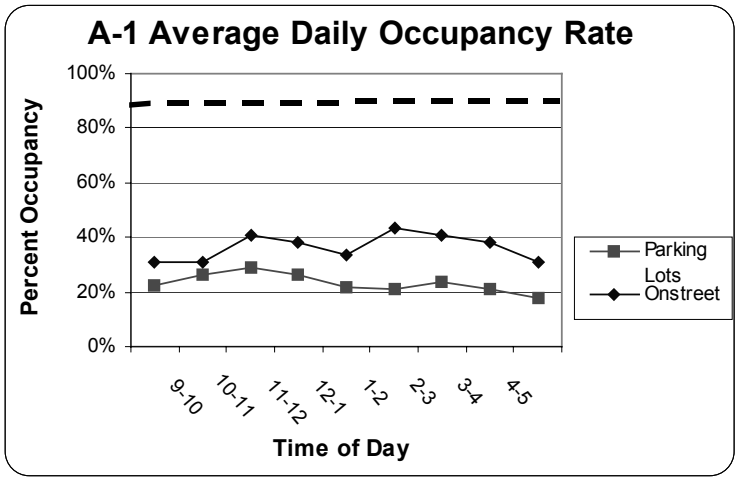
Row "A" is located on the northwest side of the Lincoln Park Business District and is a mix of commercial and high density residential. The row is served by a total of 190 parking spaces, which include 125 spaces in lots and 65 on-street spaces with no time limits. On-street parking in Row A is free and primarily concentrated in the eastern portion of the area, with the exception of one block of parking between 22nd and 21st Avenues West. The majority of the customer off-street parking is within the large lots underneath and adjacent to the Highway 53 overpass.

Block A-1



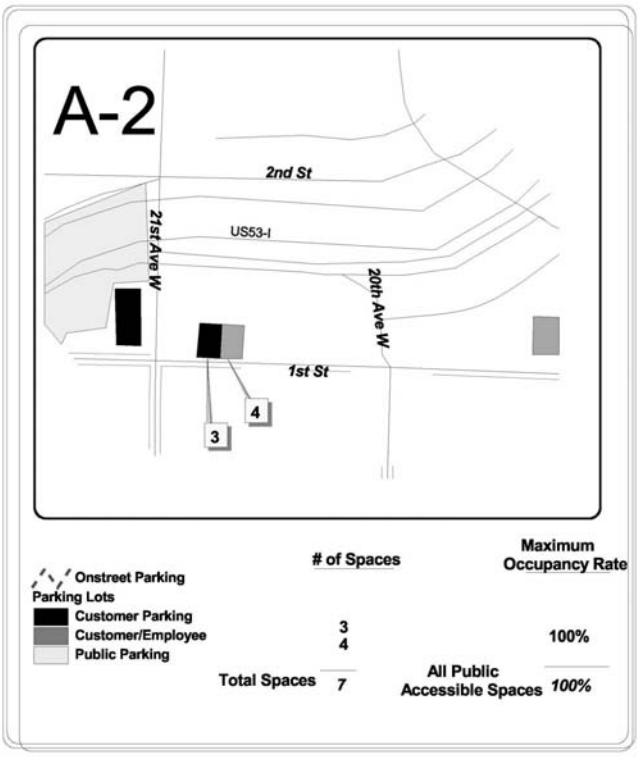
A-1: Block A-1 is located between 21st and 22nd Avenues West between 1st and 2nd Streets. It is comprised of a large public parking lot located under and adjacent to Highway 53 overpass and a smaller customer lot for Fred Olson Mortuary (2110 W. 1st St.) clientele between 22nd and 21st Avenues West. This block also has a full block of free on-street parking on the upper side of West 1st Street. There are 13 on-street spaces and 92 spaces in parking lots providing 105 total public parking spaces.

The public and customer parking lots, as well as on-street parking, were underutilized and total public parking had a maximum occupancy rate of 35%. On-street parking showed a slightly higher usage with an average daily occupancy rate near 40% throughout the day. Construction work was being done on the Highway 53 viaduct during October 2001, which may have impacted the off-street occupancy counts due to the presence of construction machinery beneath the viaduct. The large public lot under Highway 53 may provide relief in the future if new development reduces the parking supply. An area of concern in this block is the maintenance and snow removal in the large public lot.

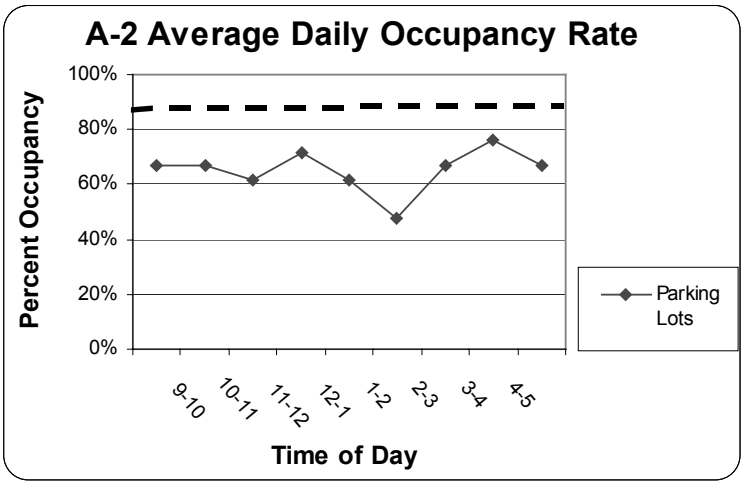


Block A-2

A-2: Block A-2 is located between 20th and 21st Avenues West above West 1st Street and is adjacent to the elevated Trunk Highway 53. This block has no on-street parking and only two small customer parking lots providing 7 public parking spaces. According to 2000 Census information, this block has one residential home with three occupants.

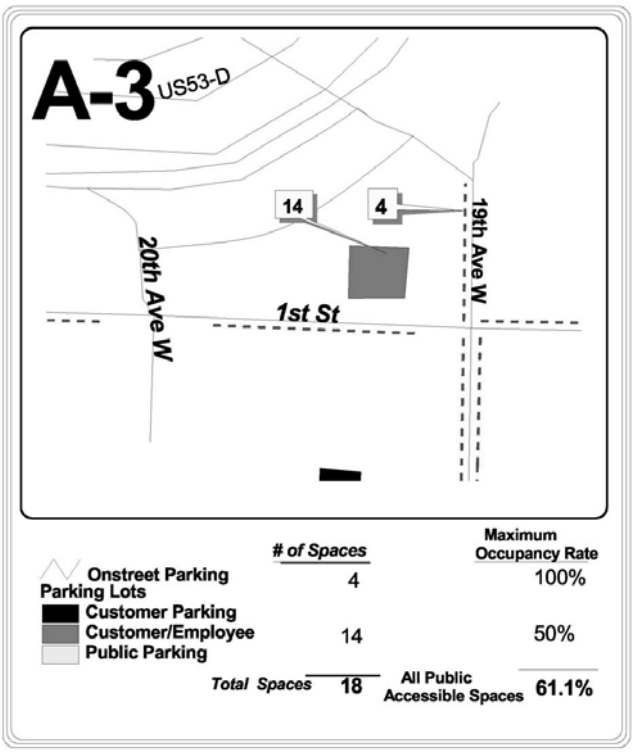


These two small lots are well utilized and were near capacity at many times during the day. There is free on-street parking in adjacent blocks that are underutilized and would offer relief from crowding in these two small lots. Areas of concern in this block include illegal parking on the sidewalk and the lack of public spaces on the upper side of 1st Street.

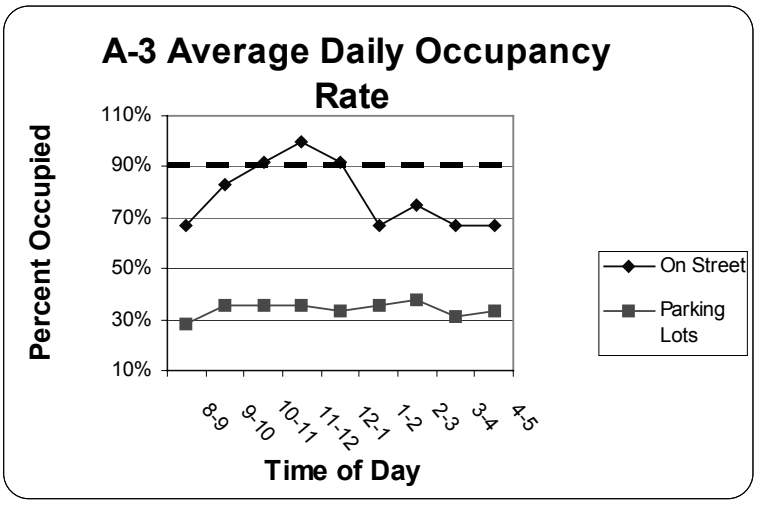


Block A-3

A-3: Block A-3 is located above 1st Street between 19th and 20th Avenues West and is adjacent to the elevated Trunk Highway 53. Integrated Office Solutions (1915 W. 1st St.) has the only customer parking lot in this block along with the four on-street parking spaces providing 18 total spaces for public parking. Twenty residents were listed in the 2000 Census information living in one single-family home and two multi-family dwellings.

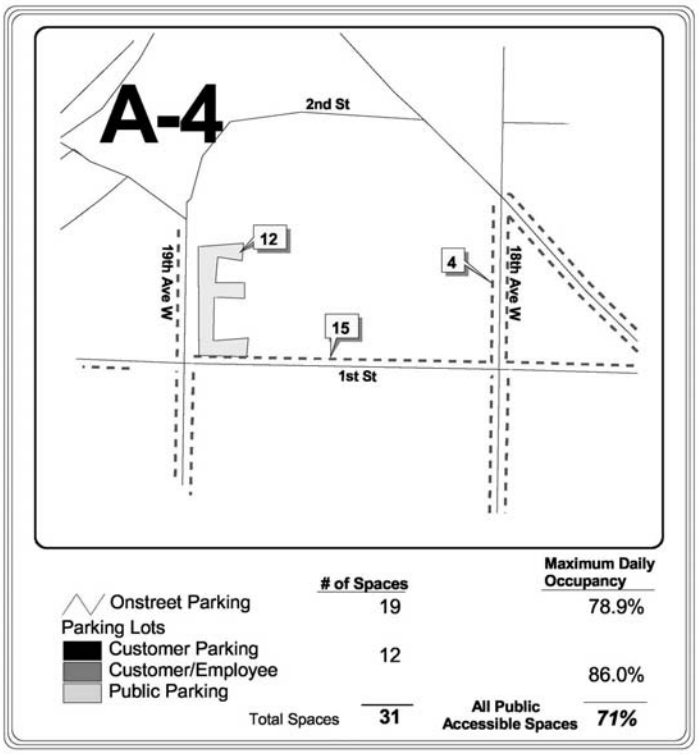


The four free on-street parking spaces along the west side of 19th Avenue West serve local residents and were at or near effective capacity most of the day. Peak daytime on-street parking hours were between 10 a.m. and 1 p.m. with average daily occupancy rates over 90%. The customer parking lot was underutilized with a steady, average daily occupancy rate of between 30% and 40%. Areas of concern in this block include a shortage of on-street parking.

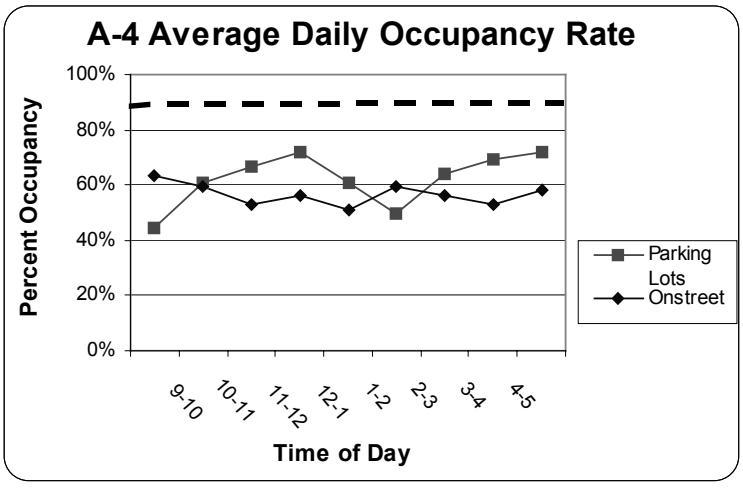


Block A-4

A-4: Block A-4 is located between 18th and 19th Avenues West between 1st and 2nd Streets. Twin Ports Collision Repair (1831 W. 1st St.) has the only parking lot on this block which is used by its customers and employees. There are 19 non-metered on-street spaces with no time limits along with 12 spaces in parking lots providing 31 total public parking spaces. Census 2000 figures indicate this block has eight multi-family dwellings and one single-family home with 104 residents.

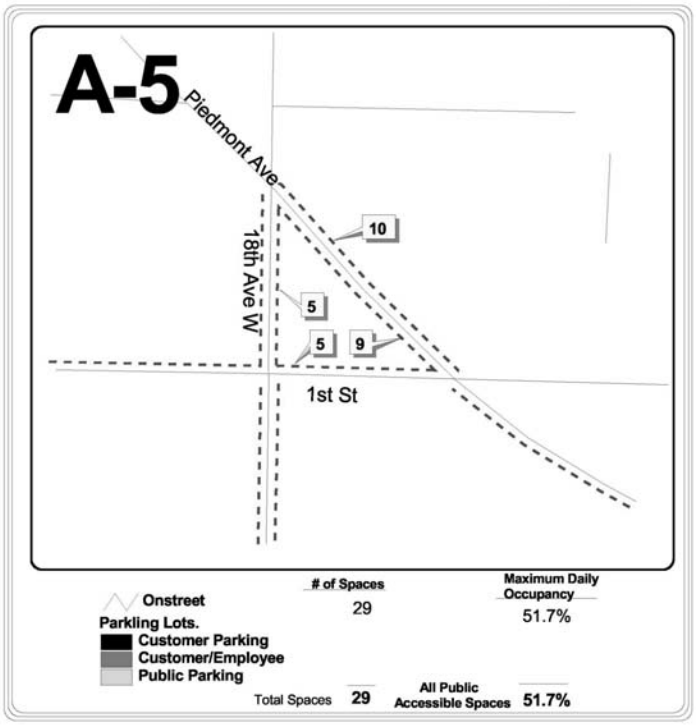


The 15 on-street parking spaces located on 1st Street were well utilized throughout the day, while four on-street spaces on 18th Avenue West were underutilized. The on-street spaces in this block had a maximum occupancy rate of 79% with an average occupancy rate between 50% and 60% most of the day. In addition to the on-street parking, off-street parking is located behind the dwellings. The TPCR lot had a maximum occupancy rate of 86% with the average daily occupancy rate between 40% and 75%.

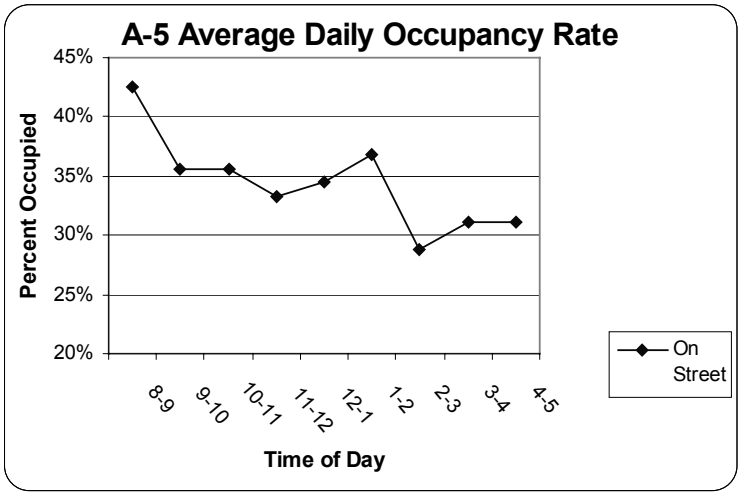


Block A-5

A-5: Block A-5 is located in the triangle of Piedmont Avenue, 18th Avenue West and 1st Street. This block consists of 29 on-street parking spaces. This area is residential in nature, however, the 2000 Census listed only 11 people living on this block.



The average daily occupancy rate for on-street parking in this block was between 30% and 50% for the majority of the day, meaning that generally there was adequate parking available throughout the day. The eastern side of Piedmont has ten spaces that are well utilized throughout the day. Areas of concern in this block include the upcoming reconstruction of Piedmont Avenue. This change will invariably affect traffic flow in this corridor and may impact parking.



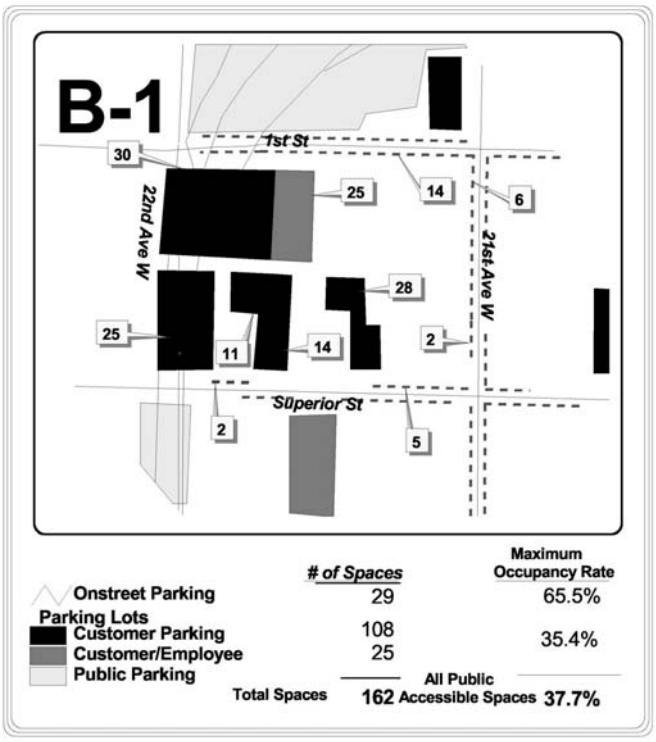
Block-by-Block Summary

Row "B" (Between Superior Street and First Street from 22nd Avenue West to Garfield Avenue)

Row "B," located below 1st Street and above Superior Street, is a mixed-use area of residential and commercial businesses. Superior Street has a steady flow of traffic serving the businesses in Lincoln Park. First Street is a one-way westbound minor arterial that also serves as a truck route. Traffic coming off of Trunk Highway 53 is funneled onto 20th Avenue West at First Street.

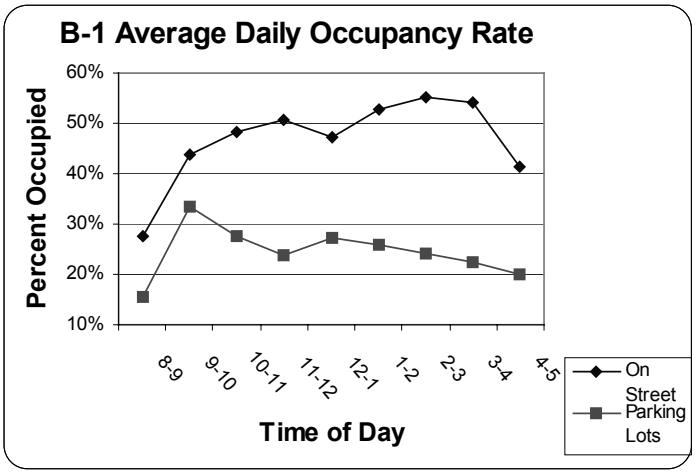
There are a total of 335 parking spaces in Row B including eighteen customer lots with 250 spaces and 85 on-street parking spaces of which 49 are non-metered and have no time limits and 36 are metered with a two-hour time limit.

Block B-1



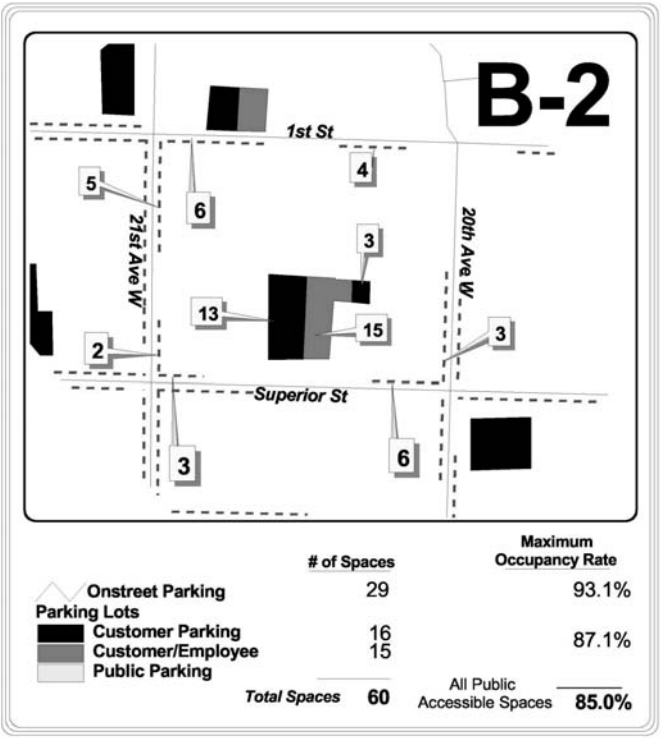
B-1: Block B-1 is located at the northwest end of the study area between 21st and 22nd Avenues West, Superior Street and First Street. This block has six parking lots for public use with a total of 133 parking spaces and 29 on-street parking spaces providing the public 162 parking spaces. This block has a large number of commercial properties, including 21st Delight (2125 W. Superior St.), Meehan's G.T.C.Auto Parts (2117 W. Superior St.) and Mitch's Bar (2113 W. Superior St.). Census 2000 information indicates 23 residents living in this block.

The two unpaved lots under Trunk Highway 53 supply 55 public spaces, however they are infrequently used. This sporadic use affected the occupancy rates of the other customer parking lots. The average daily occupancy rate for the large gravel lots under Highway 53 averaged around 15%, whereas, the other customer lots in the area had an average daily occupancy rate of around 50%. This block also has 27 metered on-street spaces with two-hour time limits. These spaces had an average daily occupancy rate of between 30% and 55% with a maximum occupancy rate of 65%. Areas of concern in this block include upgrading the unpaved lots under Highway 53 and long term parking in loading zones.

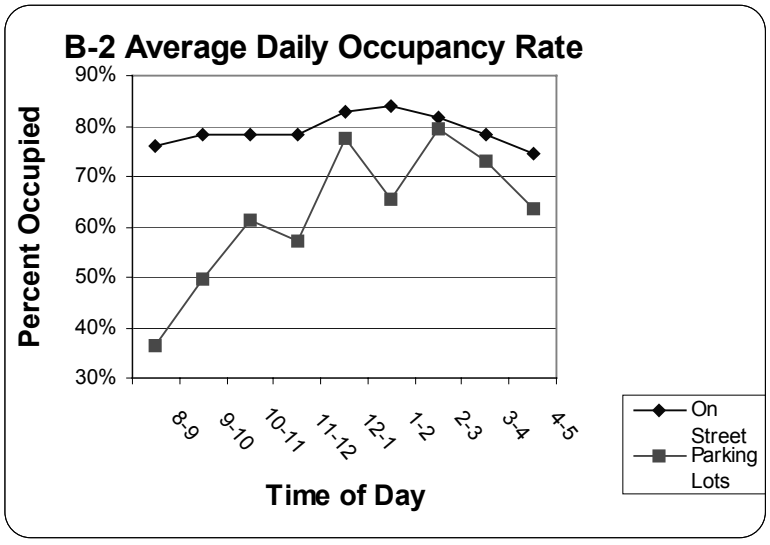


Block B-2:

B-2: Block B-2 is located between Superior Street and 1st Street between 20th to 21st Avenues West. It is centrally located and allows easy access to several businesses. There are three customer lots serving Curley's Bar, Bedrock Bar (2023 W. Superior St.) and Carr's Hobby (2009 W. Superior St.) with a total of 31 spaces. On-street parking in this block consists of 16 metered, two-hour limit spaces and 13 free, two-hour limit spaces. Census 2000 figures identified 68 people living above the local businesses on this block.

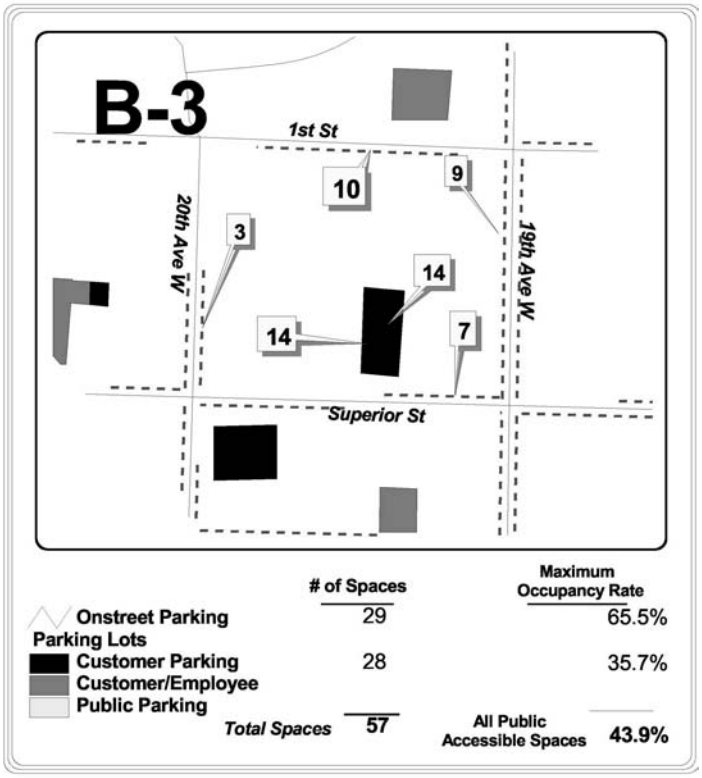


This block's parking facilities were among the most heavily used in the study area with an overall maximum occupancy rate of 85% for all public spaces. On-street parking spaces were heavily utilized with an average daily occupancy rate near 80% throughout the day. The off-street parking lots experienced varied usage throughout the day with peak usage in the afternoon. The high parking use in this block may be due to the mixed land use with a significant amount of residents living in the block as well as a concentration of commercial uses. Areas of concern in this block include the usage of lots previously owned by the Lincoln Park Business District and now privately owned. As development occurs and parking becomes scarce, there may be a question of who will be allowed to use these parking lots. Many local business customers continue to use these lots as they had previously.



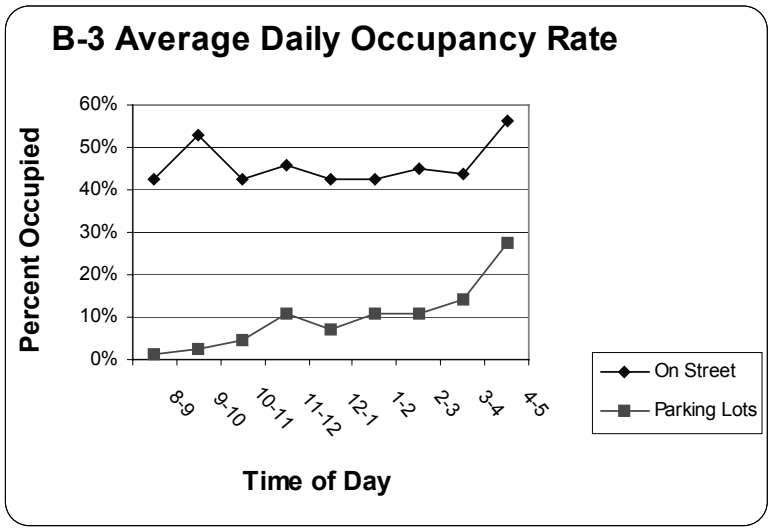
Block B-3

B-3: Block B-3 is located between 19th and 20th Avenues West between Superior Street and First Street. There are a total of 57 public parking spaces available on this block with 29 on-street spaces and 28 customer lot spaces. Of the 29 on-street parking spaces, seven are metered two-hour diagonal spots along Superior Street, three are metered two-hour parallel spaces along 20th Avenue West, and 19 are free parking along 19th Avenue West and First Street. Census 2000 information indicates 33 residents living in this block.



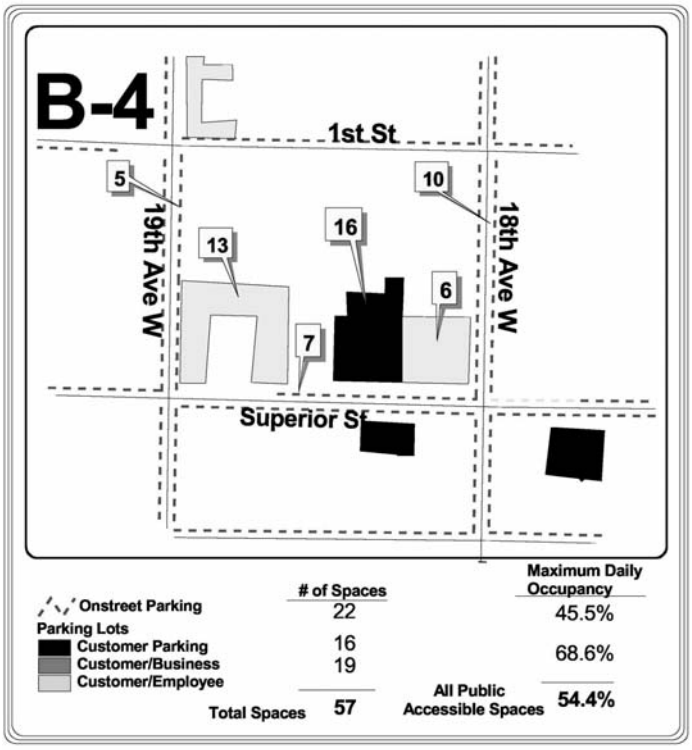
Franklin Foods (1925 W First St.) offers 31 parking spaces behind their facility for employees. As the largest employer on this block, the lot accommodates the majority of business and employee parking needs. Franklin Foods also has two small lots in Block A-3. These lots were not included in the occupancy counts.

The off-street parking lots had an average daily occupancy rate peaking at around 30% late in the day. The on-street parking had a daily occupancy rate between 40% and 60%. Metered on-street parking along the Avenues was observed in short bursts with quick turnover. Areas of concern include illegal parking in loading zones and the under utilization of the off-street parking.

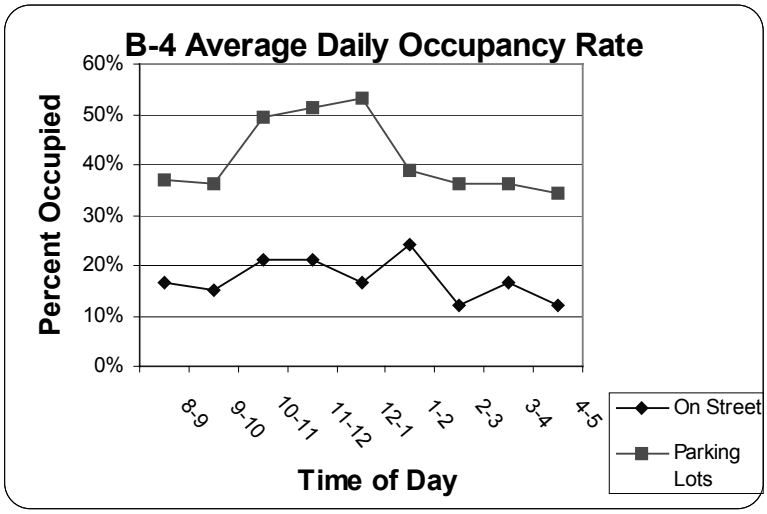


Block B-4

B-4: Block B-4 is located between First Street and Superior Street from 18th and 19th Avenues West. This block has a total of 57 parking spaces, 35 are in customer lots and 22 on-street spaces. The Conoco Little Store (1831 W. Superior St.), Arrowhead Supply (20 N 19th Ave. W.) and George W. A. Appliance Parts (1801 W. Superior St.) own the three customer lots on this block. The 22 on-street spaces are free, however 12 spaces have a two-hour time limit. Census 2000 information indicates three people reside in this block.

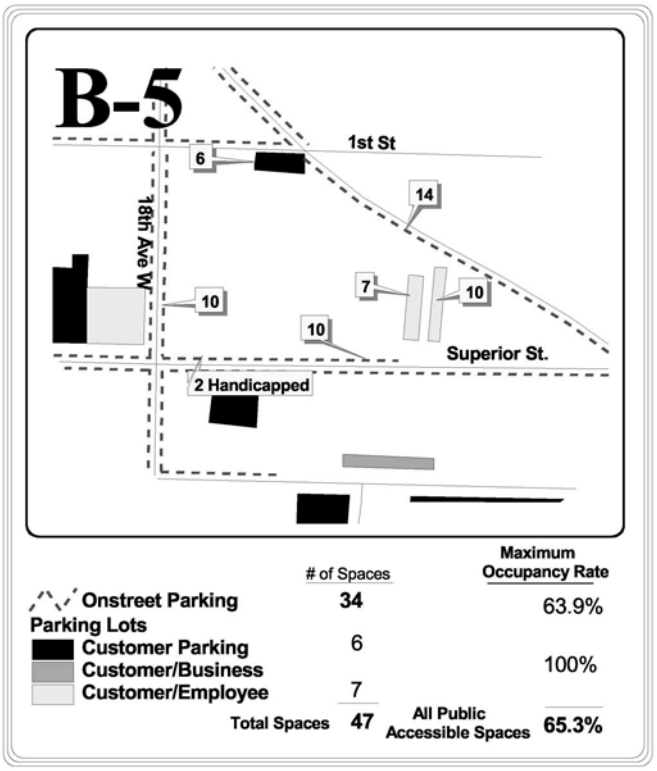


The off-street customer lots had a maximum occupancy rate of 68%, although the daily occupancy rate shows steady usage between 35% and 50%. On-street parking was observed as underutilized with a daily occupancy rate between 10% and 25%.

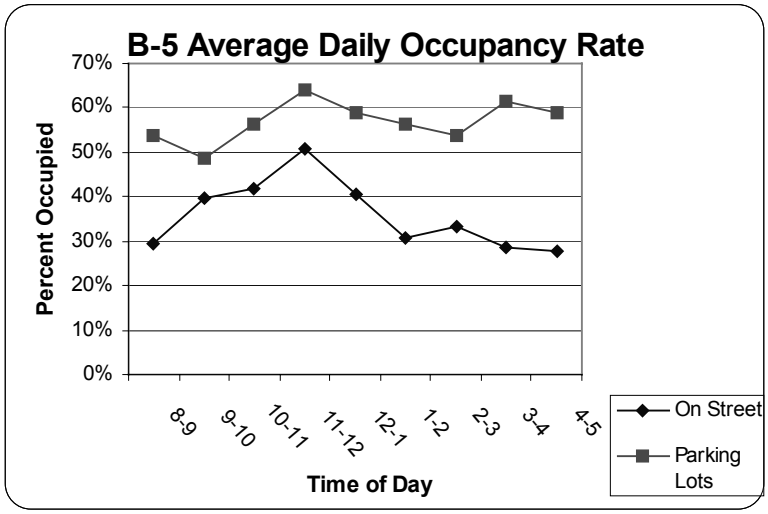


Block B-5

B-5: Block B-5 is located within the triangle of Superior Street, Piedmont Avenue, 1st Street and 18th Avenue West. This block is a mix of residential buildings and commercial businesses. There are a total of 47 public parking spaces on this block serving Peerless Auto Body (1718 W. First St.) and Elite Printing & Graphics (1701 W Superior St.). There are 36 free on-street parking spaces with no time limits. Census 2000 information indicates that 39 residents live on the block.

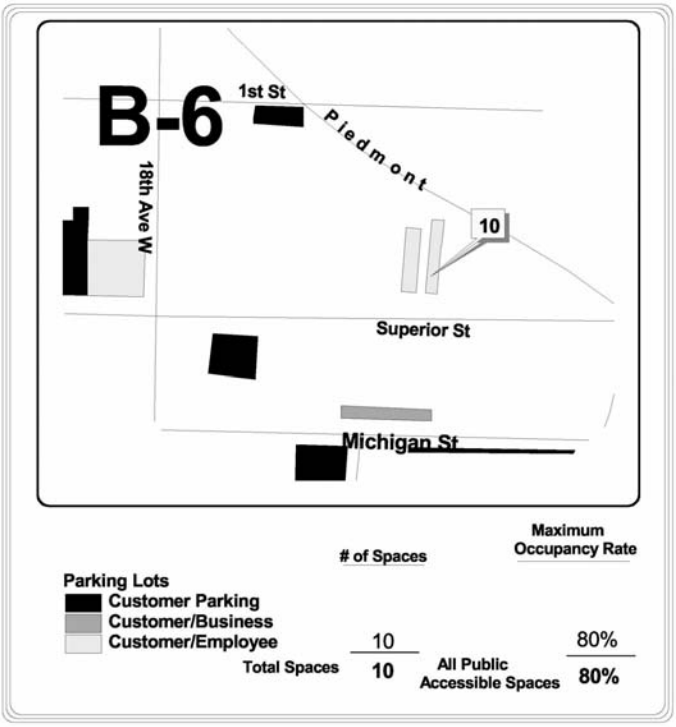


The businesses on this block have two off-street customer lots that provide a total of 13 spaces, which have a maximum occupancy rate of 100%. The average daily occupancy rate for these lots was between 50% and 65%. The on-street parking had a maximum occupancy average rate of 64% and a daily occupancy rate between 30% and 50%. The 14 on-street parking spaces along Piedmont Avenue were underused with an occupancy rate of only 25%. Areas of concern on this block include the reconstruction of Piedmont Avenue and the resulting changes in traffic, which may impact parking in this area.

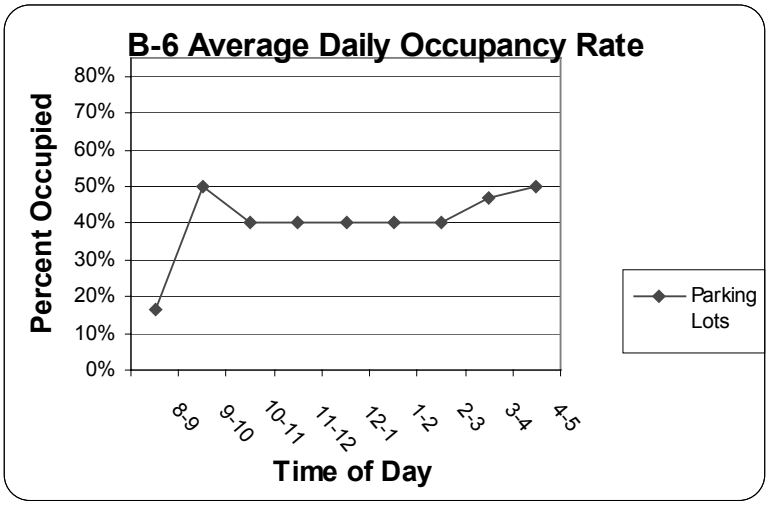


Block B-6

B-6: Block B-6 is located between 17 ½ Avenue West, Piedmont Avenue and Superior Street. There is no on-street parking allowed on Superior Street and there is only one public parking lot with 10 spaces owned by Elite Printing and Graphics. This lot is located on the northeast side of the graveled 17th Avenue West.



The maximum occupancy rate on this block was 80% for the single public parking facility, although the average daily occupancy rate never exceeded 50%.

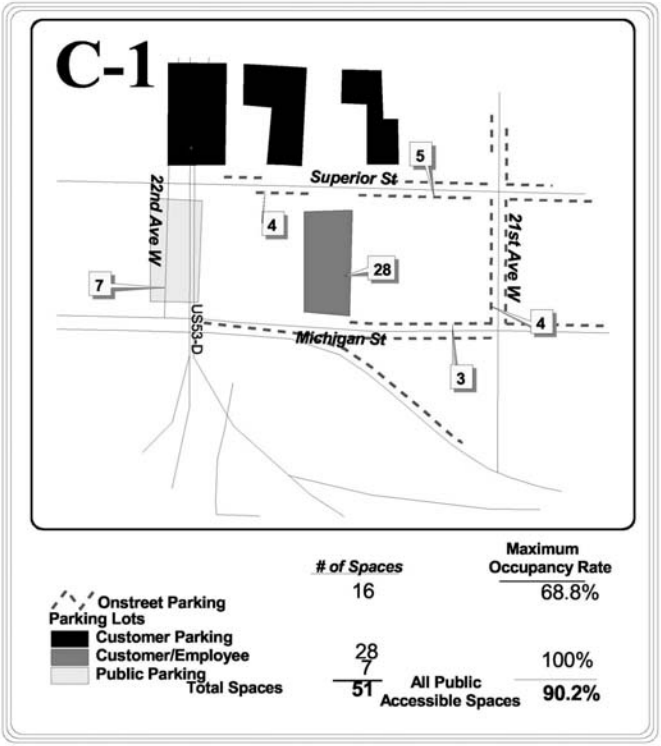


Block-by-Block Summary

Row "C" (Between Superior Street and Michigan Street from 22nd Avenue West to Garfield Avenue)

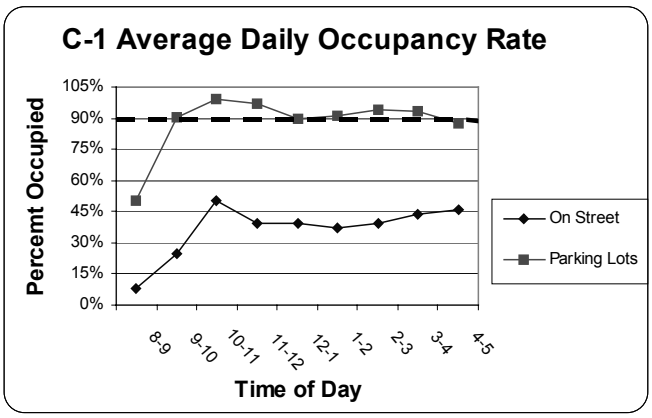
Row "C" is centrally located in the business district and is mix of retail and commercial businesses. There are a total of 223 parking spaces in this row including seven customer lots with 97 spaces, and 126 on-street parking spaces. The on-street parking is made up of 85 free spaces with no time limit and 41 metered two-hour spaces. Superior Street provides access to Lincoln Park businesses and a large amount of diagonal parking. Michigan Street is primarily used as a loading zone for local business. Since Lower Michigan Street has opened, traffic now has the option of bypassing the Lincoln Park Business District.

Block C-1



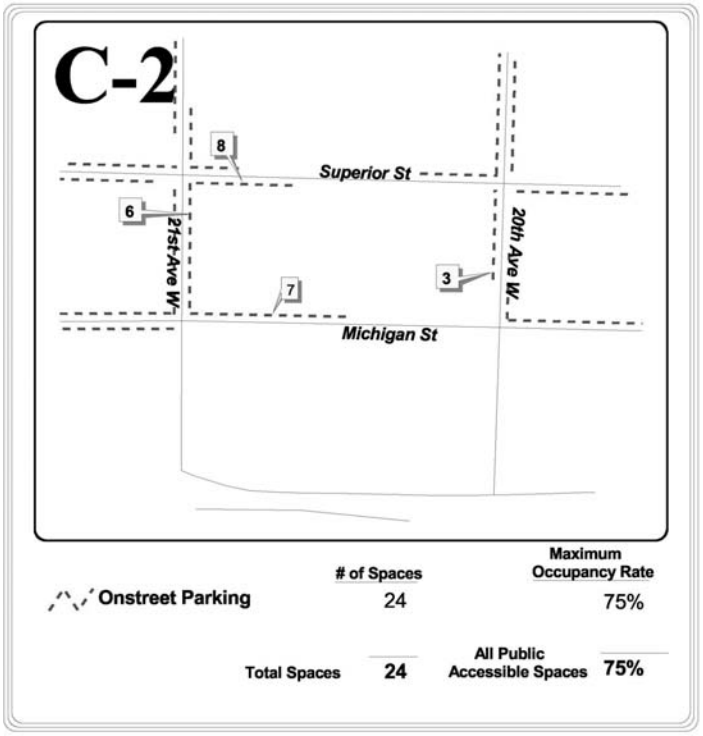
C-1: Block C-1 is located between Superior Street and Michigan Street from 22nd and 21st Avenues West. Trunk Highway 53 runs above 22nd Avenue West adjacent to this block. This area is served by 51 public parking spaces. These include 28 off-street spaces adjacent to Lakehead Mortgage (2114 W. Superior St.) and 16 on-street spaces. There is a public parking lot located under Highway 53 along 22nd Avenue West with seven spaces primarily used for employees of adjacent businesses, but is open to customers also. The 16 on-street parking spaces are comprised of four metered, fifteen-minute spaces, nine metered two-hour spaces on Superior Street and 21st Avenue West, and three free spaces with no time limit on Michigan Street. Census 2000 figures indicated 20 residents live on this block, which is the only block in the "C" row with residents.

The off-street parking lots in Block C-1 had a maximum occupancy rate of 100% and an average daily occupancy rate over 90% most of the day which is at effective capacity. Though these lots were at capacity there did not appear to be any overflow to the parking lot across Superior Street, under Highway 53. Recent changes in the businesses that occupy this block



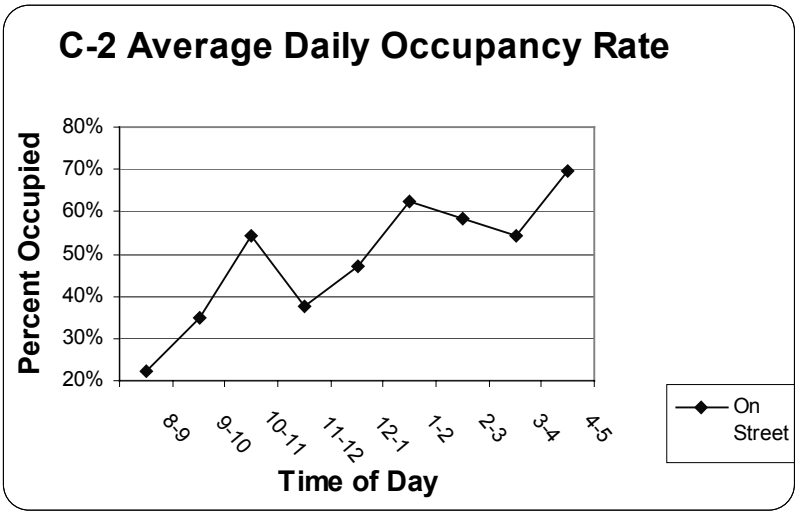
have freed parking spaces in the lot underneath Highway 53. The on-street spaces had a maximum occupancy rate of 69% and an average daily occupancy rate around 45%. Areas of concern in this block include paving and maintenance of the public lot under Highway 53.

Block C-2



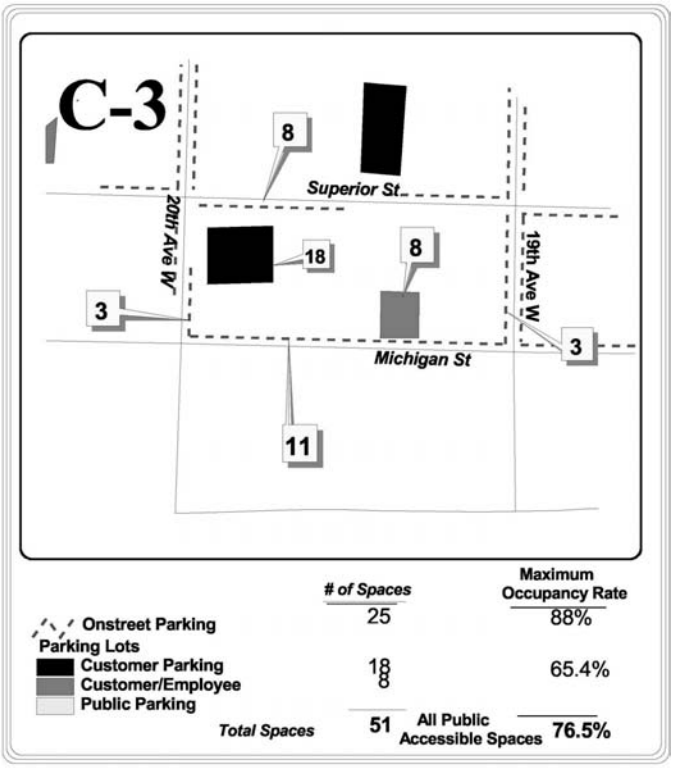
C-2: Block C-2 is located between Superior and Michigan Streets and 20th and 21st Avenues West. Anderson Furniture (2100 W Superior St.), VFW-137 (2024 W. Superior St.), Happy Sleeper (2010 W. Superior St.) and US Bank, are a few of the businesses found on the block. There are four small employee and business delivery lots, but no customer lots, therefore customer parking is all on-street. There are 24 on-street parking spaces available of which 17 are metered two-hour spaces and seven are free spaces located on Michigan Street.

The maximum occupancy rate for on-street parking on this block was 75%, with a varied average daily occupancy rate peaking at 70% between 4 and 5 p.m. The free parking along Michigan Street was at full capacity throughout the day indicating probable employee use. Areas of concern on this block include long-term loading zone parking and bus stop parking.

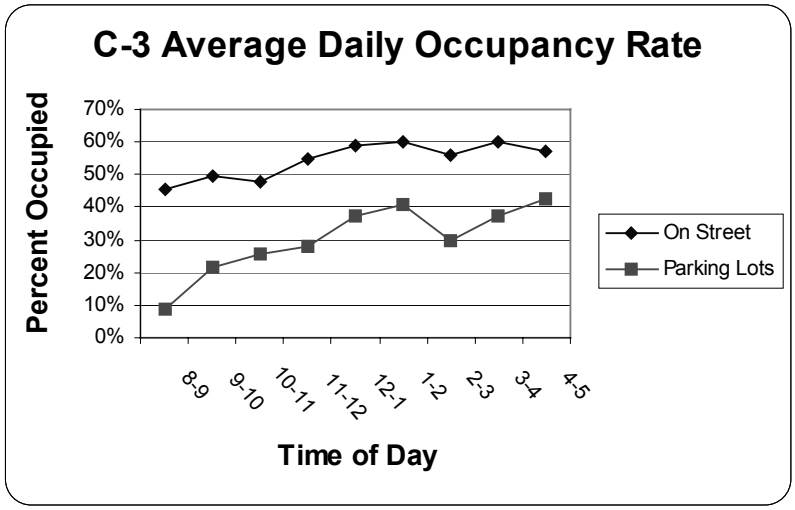


Block C-3

C-3: Block C-3 is located between Superior and Michigan Streets and 19th and 20th Avenues West. This block has a total of 51 public parking spaces with 26 spaces in two off-street lots and 25 on-street spaces. The off-street lots are comprised of customer parking for US Bank (130 W. Superior St.) and Minnesota Surplus (1910 W Superior St.). The on-street parking includes 11 free, two-hour spaces on Michigan Street and three free, two-hour spaces on 18th Avenue West.

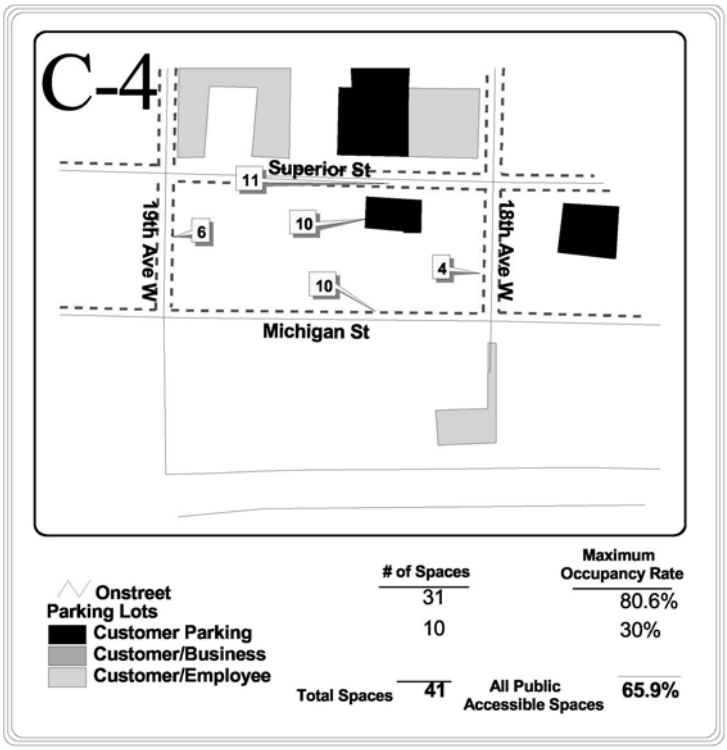


The off-street parking lots have a maximum occupancy rate of 65% and an average daily occupancy rate between 10% and 40% with a peak at mid-day and near 5 p.m. There have been concerns voiced from US Bank that non-customers are using this lot, however, the lot was found underutilized with a 31% maximum occupancy rate. The on-street parking had a maximum capacity of 88% and an average daily occupancy rate between 45% and 60%. There was an observed lack of enforcement of the two-hour parking limit. Areas of concern in this block include non-enforcement of the two hour time limits, the lack of utilization of Superior Street diagonal parking, and potential impacts to parking supply if development occurs in current parking areas.

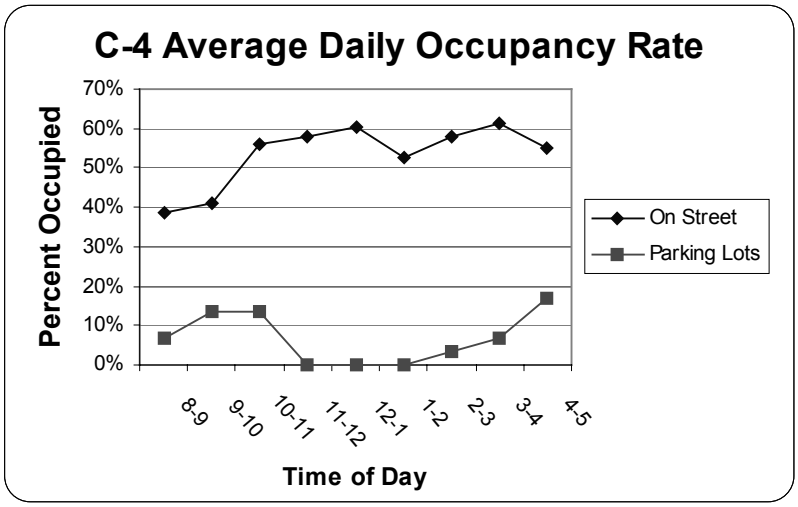


Block C-4

C-4: Block C-4 is located between Superior and Michigan Streets from 18th to 19th Avenues West. This block has a total of 41 parking spaces available to the public. The West Side Pet Clinic (1810 W. Superior St.) has the only customer lot offering 10 parking spaces. On-street parking is comprised of 31 free spaces, 17 of which have a two-hour limit.

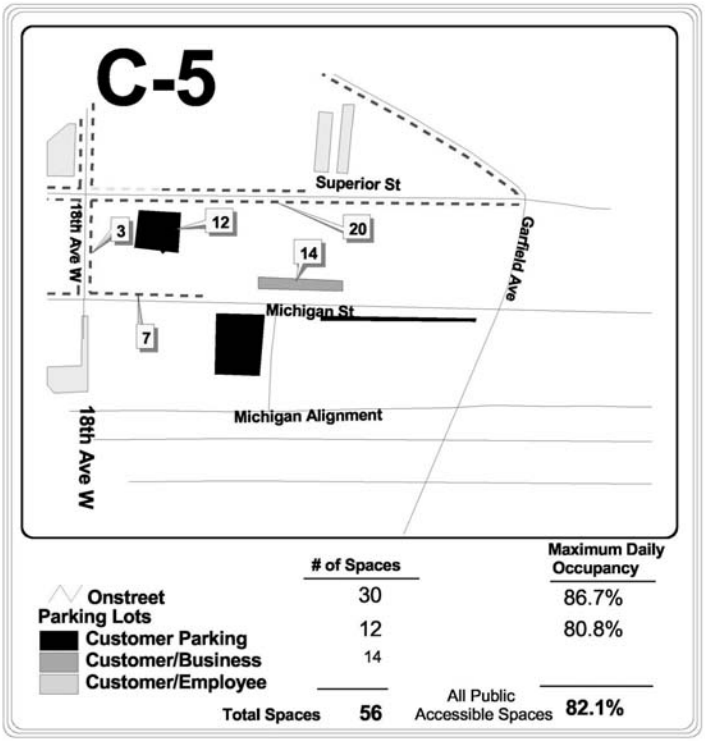


The off-street lot had a maximum occupancy rate of only 30%. On-street parking on this block reached a maximum occupancy rate of 80% and the average daily occupancy rate between 40% and 60%. Areas of concern in this block include parking on the sidewalk and long-term loading zone parking.

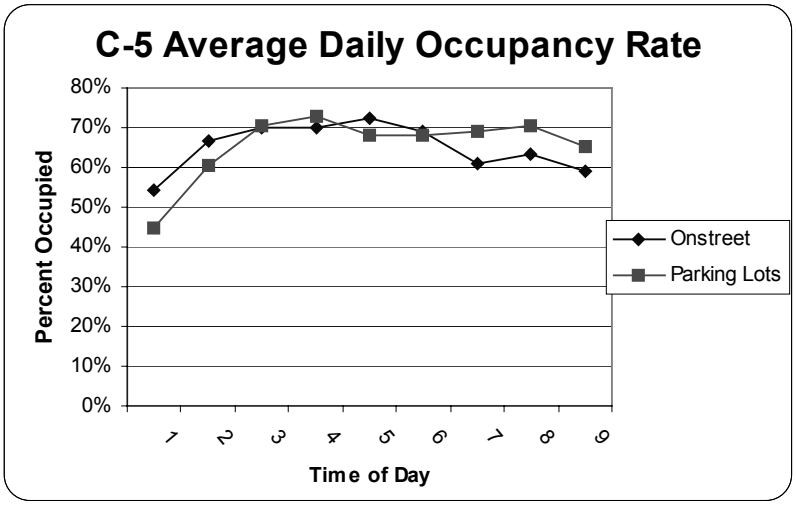


Block C-5

C-5: Block C-5 is located between Superior and Michigan Streets from 18th Avenue West to Garfield Avenue. The block has a total of 56 parking spaces available to the public. DCI Plasma (1720 W Superior St.) has a small lot providing customers with 12 parking spaces and KIA (1700 W. Michigan St.) has a lot in front of their service department with 14 spaces. There are 30 free on-street parking spaces around the block, of which 20 have a two-hour time limit.



The off-street parking lots, particularly the Plasma Center, were heavily used and had a maximum occupancy rate of 80%. The average daily occupancy rate for off-street lots was fairly steady from 10 a.m. to 5 p.m. at around 70%. The on-street parking spaces had a maximum occupancy rate of 87% and an average daily occupancy rate between 55% and 70%. Areas of concern in this block include lack of enforcement of the two hour parking limit on on-street parking and illegal parking on sidewalks.

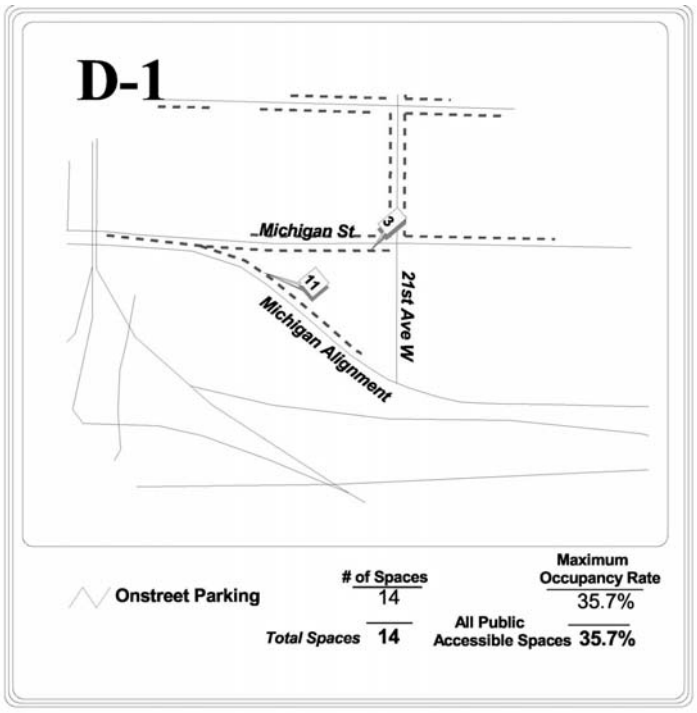


Block-by-Block Summary

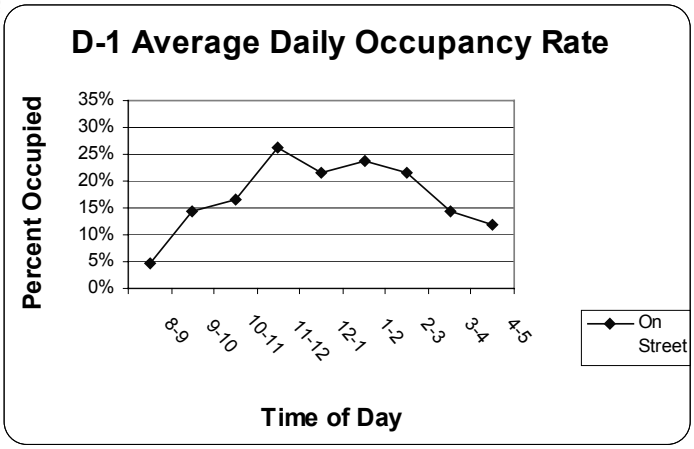
Row "D" (Between Michigan Street and Lower Michigan Street from 22nd Avenue West to Garfield Avenue)

Row "D" is located along the lower edge of the Lincoln Park Business District and has a total of 57 public parking spaces available. Off-street parking (lots) provides 43 spaces and on-street parking provides 14 spaces. Michigan Street is now blocked off underneath Garfield Avenue at the KIA dealership. This row has several business parking lots for Leef Services (17 N 20th Ave. W.) and Franklin Foods vehicles. Additionally, there is a contract parking lot with 74 spaces (occupancy counts were not conducted on this lot), which charges $10 a month for parking. The recent development of Lower Michigan Street has changed Michigan Street from a through street to an access street for business deliveries.

Block D-1



D-1: Block D-1 is located between Michigan and Lower Michigan Streets from 22nd to 21st Avenues West. The only parking available to the public are 14 free on-street parking spaces with no time limits. These on-street spaces had a maximum occupancy rate of 36%. The 11 spaces along Lower Michigan Street may be underutilized due to the higher levels of traffic and the availability of other parking nearer to businesses.



Block D-2

D-2: Block D-2 is located between Michigan and Lower Michigan Streets from 20th to 21st Avenues West. This block has no parking available to the public.

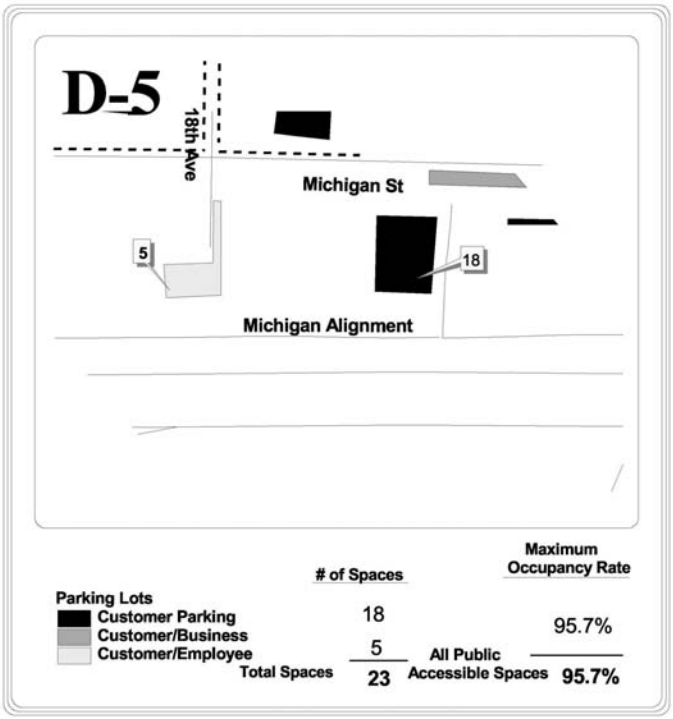
Block D-3

D-3: Block D-3 is located between Michigan and Lower Michigan Streets from 19th to 20th Avenues West. This block has no parking available to the public.

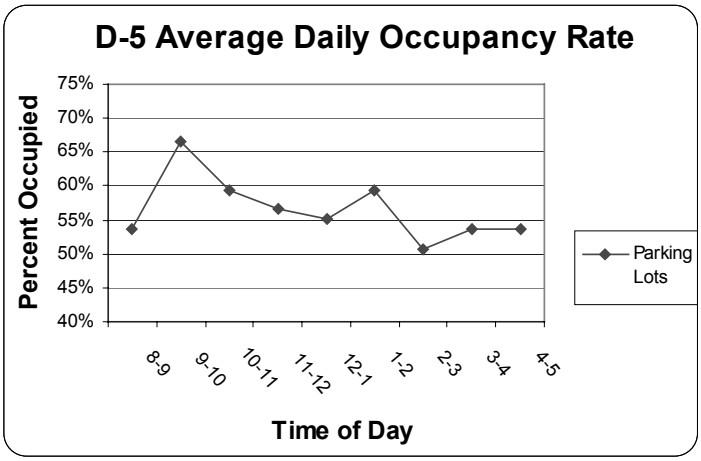
Block D-4

D-4: Block D-4 is located between Michigan and Lower Michigan Streets from 18th to 19th Avenues West. This block has no parking available to the public.

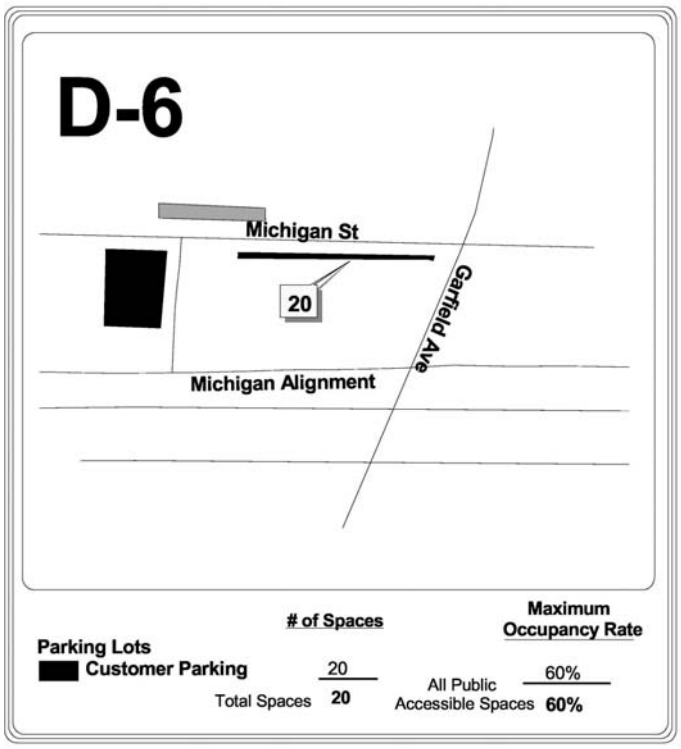
Block D-5



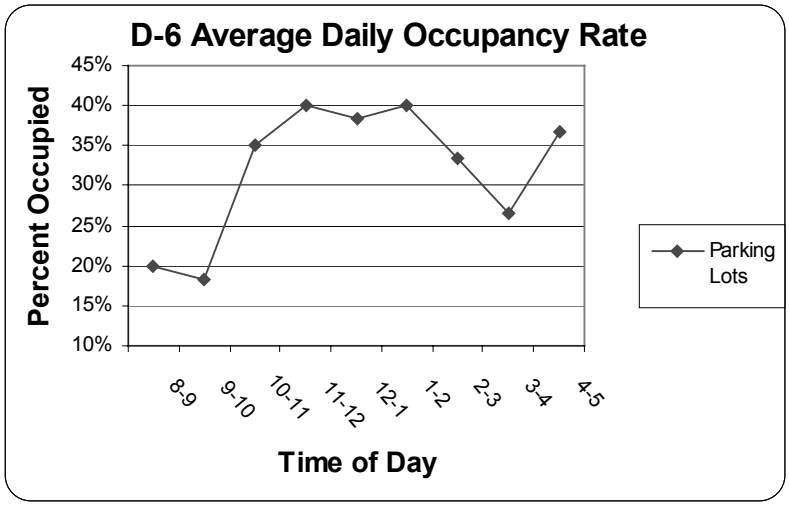
D-5: Block D-5 is located between Michigan and Lower Michigan Streets from 18th to 17 ½ Avenues West. The Auto Value Parts Store (1726 W Michigan St.) has a customer parking lot with 18 parking spaces. Franklin Foods owns a large vehicle storage yard with a small gravel lot adjacent to the back of Auto Value Parts Warehouse, which supplies five spaces for warehouse employees and customers. These 23 parking lot spaces had a maximum occupancy rate of 95%, although the average daily occupancy rate was between 50% and 65%. On-street parking is not available on this block.



Block D-6



D-6: Block D-6 is located between Michigan and Lower Michigan Streets. The entire block belongs to the KIA dealership. With through traffic blocked on Michigan Street below Garfield Avenue, KIA is able to offer 20 free on-street parking spaces with no time limit. This lot had a maximum occupancy rate of 60% and an average daily occupancy rate between 20% and 40%.



Areas of Concern

Row A

- Responsibility for snow removal and maintenance in the parking lot under Highway 53 should be defined. MnDOT, City of Duluth and Lincoln Park Business Group should formalize any existing agreements.
- Illegal parking of vehicles on sidewalks.
- Lack of on-street parking in areas with residential land use.
- Underutilized parking along 18th Avenue West.
- The reconstruction of Piedmont Avenue in 2003 will potentially impact parking along lower Piedmont from Superior Street to 3rd Street.

Row A is well served with free parking in a large lot under Highway 53, as well as on-street parking along the avenues and 1st Street. There is sufficient parking within a half block of all businesses.

Row B

- The unpaved lots under Highway 53 are in need of rehabilitation. As development expands in Lincoln Park, these lots will be an invaluable parking resource. Signage directing patrons to this free parking area is recommended.
- Off-street parking is underutilized.
- Illegal parking on sidewalks and long-term parking in loading zones.

Row C

- The unpaved lots under Highway 53 are in need of rehabilitation. Paving the parking surface and providing netting on the underside of the viaduct would make this parking area more desirable. Signage would alert customers to the free parking available. As development expands in Lincoln Park, these lots will be an invaluable parking resource.
- Illegal parking of trucks and vehicles on sidewalks along Michigan Street.
- Potential impacts on parking supply if development should occur on existing parking facilities.

Row D

- Potential impacts on parking supply if development should occur on existing parking facilities.
- Lack of public parking facilities along areas of Michigan Street.

Parking Recommendations

Short-Term Recommendations

Public Parking Lots under Hwy 53

- Facilitate discussions between MnDOT, City of Duluth and the Lincoln Park Business Group to clarify responsibilities such as snow removal and maintenance.
- Rehabilitate gravel parking areas under Highway 53 to provide additional parking for future development. Paving the parking surface and providing screening on the underside of the viaduct would make this parking area more desirable. Signage is also needed to alert customers to the available parking. Development of parking in this area will help alleviate parking shortages if development in blocks D-1 and D-2 impacts the parking supply.

Parking Enforcement

- Sidewalk parking should not be allowed at any time.
- Loading zones should be used for loading and unloading activities associated with adjacent businesses and should not be used for long-term parking.
- Time limits on parking meters and free parking areas should be enforced.
- Increased and consistent parking enforcement would eliminate illegal parking issues within Lincoln Park.

Shared Parking Opportunities

- There are underutilized off-street parking lots in the following blocks: A-1, B-1, B-2, B-3, B-4, and C-3. These blocks all have off-street parking capacities of over 25 spaces. Blocks A-1 and B-1 have a total of over 200 off-street spaces. Investigate opportunities to create shared parking in these blocks. A number of underutilized public and customer lots could be utilized more extensively through sharing agreements.
- Clean-up sites behind businesses for employee or tenant parking. Look for opportunities to create additional off-street parking without taking buildings down.

Miscellaneous

- Examine the option of creating parking under the freeway at 19th Avenue West. This area could be used as a remote employee parking area to help businesses that have outgrown their current parking facilities.
- Encourage employers to require employees not to park in the most desirable customer parking.
- Review loading-zone requirements and needs to identify areas where loading zones could be changed to on-street parking.
- As development occurs, time limits can be adjusted to encourage parking turnover and better utilization of individual parking spaces.
- Examine the need to adjust the locations of 15-minute parking meters to areas where rapid turnover is needed.

Long-Term Recommendations:

- Monitor traffic patterns along Piedmont Avenue above Superior Street after the Highway 53/Piedmont Avenue reconstruction is completed to ensure a balance between adequate residential parking and accommodation of traffic movement.
- As development expands in Lincoln Park and parking demand increases, or parking supply decreases, consistent parking enforcement will be critically important.
- Metered parking will become more relevant to increase parking turnover as customers continue to frequent the district. One option may be to change metered parking on Superior Street to one hour parking while leaving the Avenues at two-hour parking.
- To pay for parking lot improvements under Highway 53 consider metering spaces along Michigan Street.
- If long-term development in the Lincoln Park area considerably reduces parking supply or increases demand, measures such as Commuter Choice programs and instituting pricing systems may be necessary. Once the parking supply becomes constricted, reducing demand will become the only choice to alleviate parking shortages.

Conclusion

Currently the core Lincoln Park Business District has ample parking. There may be a perceived shortage of parking; however, this may equate to a shortage of parking directly in front of or within a few feet of a destination. The occupancy counts that were conducted in October 2001 indicate that parking exists within ½ block of almost all areas of the study area at most times of the day. The expectation that parking will always be available within a few steps of any destination is unrealistic in today's auto-oriented transportation system.

In a few cases where businesses have expanded beyond their ability to provide a parking space for every employee, options such as using alternatives modes of transportation, remote employee parking and shared parking opportunities should be examined.

The Lincoln Park Business District should advertise the fact that adequate parking is available. Combining this with the improved access to this area of the city and a marketing strategy of easy access and ample parking may give this area a competitive advantage over other retail/commercial areas in the city.

In the future, as land use intensifies with additional development, market forces will dictate the highest and best use for land parcels. In the future, the market may dictate that the land necessary to provide free parking will not be readily available. Creative solutions such as validated parking, constructing strategically placed parking structures, and Commuter Choice programs may be the best options to help alleviate any future parking shortages.

Concluding Chapter

Project Objective
This transportation assessment attempts to describe how the transportation system is currently functioning in the Lincoln Park area and to provide ideas for improving the system. Recent changes in the roadway network, along with the desire of the business and neighborhood communities to redevelop and enhance the area, were the impetus behind the City of Duluth's request for the MIC to examine the transportation network. This chapter draws on information from the preceding chapters to provide final thoughts and outline areas of needed improvements.

Past Planning Efforts
MIC staff began this transportation assessment by reviewing a large number of past planning efforts, which contained a number of excellent ideas for improving the Lincoln Park area. The intent of this review was to incorporate these ideas into this appraisal while tying many of the transportation-related ideas together with some of the more recent issues and to provide the community with recommendations and ideas to improve the transportation network.

Roadways
Recent improvements to the roadway system, such as intersection improvements along 27th Avenue West and the new Lower Michigan Street alignment, have improved access to the area for vehicle traffic. The new Lower Michigan Street has also provided greater visual access to businesses in the area. The business community is in the process of reorienting some of the buildings along the new stretch of road toward Interstate 35.

After Piedmont Avenue is reconstructed (2003-2004), traffic will move more efficiently up and down the hill. The current design includes a connection from Superior Street and Garfield Avenue up the residential portion of lower Piedmont Avenue to connect with Highway 53 near 8th Street. This route could potentially increase traffic along the residential section of Piedmont Avenue from Superior Street to 8th Street.

Residents of the West 3rd Street area have expressed concerns about the amount and speed of traffic along this street. West 3rd Street is functionally classified as a Major Collector and is on the Municipal State Aid System. As such, it is designed to carry a large amount of traffic to the higher classified routes such as Grand Avenue and 27th Avenue West. Although this street may carry a large volume of traffic, methods are available to reduce sight lines and slow traffic.

Key Recommendations

- Monitor the residential section of lower Piedmont Avenue from 1st Street to 8th Street to ensure efficient traffic movement and minimal neighborhood impact.
- Consider techniques such as boulevard plantings and curb bulbouts to reduce sight lines for motorists along West 3rd Street.

Pedestrian

One of the key components of any transportation system is the pedestrian environment. Crossing improvements on busy streets, providing connectivity to land uses and upgrading the condition of sidewalks will improve the environment for pedestrians. Crossings along West 3rd Street near Harrison Community Club, Lincoln Park City Park, and 24th Avenue West can be improved to provide better connectivity between residential areas and activity centers such as schools, parks, community centers, and commercial areas. The Duluth Sidewalk Inventory is a tool that the City can use to identify where best to invest scarce resources.

Key Recommendations

- Improve street crossings of West 3rd Street in the areas of Harrison Community Club, Lincoln Park City Park, and 24th Avenue West. Curb bulbouts along West 3rd Street would shorten crossings as well as allow pedestrians to see around parked cars.
- Utilize information from the Duluth Sidewalk Inventory to improve condition of sidewalks in the Lincoln Park area.
- Ensure connectivity of residential areas with activity centers such as community centers, schools, parks and commercial areas.

Bicycle

The development of the Duluth-Hermantown On-Street Bike Routes will provide opportunities for bicycle commuters. The routes connect Lincoln Park with Hermantown and other parts of Duluth which will give cyclists route options for riding to and through the Lincoln Park area. The development of a connection between the Munger Trail and the Lakewalk will bring trail users into close proximity to the core Lincoln Park commercial area.

Key Recommendations

- Encourage bike traffic to access the Lincoln Park area by providing amenities such as bike racks and signage.

Transit

Transit service in Lincoln Park is excellent, with four routes running through the Lincoln Park area en route to downtown Duluth. Most of the residential areas in Lincoln Park have a bus route within two blocks of the densest populations. Transit provides a mobility option for those who cannot drive or choose not to drive. Transit improvements are currently in the planning stages as the DTA updates the *Transit Vision.*

Key Recommendation

- Work with Lincoln Park stakeholders in updating *Transit Vision.*

Parking

Parking in the core Lincoln Park Business District is presently adequate; however, development plans may impact the current supply. The parking lots under the Highway 53 viaduct should be improved and will help alleviate future parking shortages. Employers with parking shortages should look at encouraging employees to utilize alternative modes of transportation and examine opportunities for shared and remote parking. A number of areas behind businesses could be cleaned up and converted to off-street parking. Consistent parking enforcement is also important to allow for turnover at meters and in the time-limited free parking areas. Good access, along with ample parking provides the area with a competitive advantage over other retail areas.

Key Recommendations

- Improve parking facilities under Highway 53 viaduct.
- Consistently enforce parking regulations.
- Identify opportunities to develop shared off-street parking facilities (particularly in underutilized lots).
- Examine locations of loading zones to look for opportunities for additional on-street parking.
- Encourage employees to not park in most desirable customer parking.
- Locate 15-minute meters only in areas where rapid parking turnover is needed.

Conclusion

The recommended transportation improvements, along with the planned improvements in the 3rd Street Corridor and the business district, will enhance the image of this area of town and should encourage additional development and re-development. Access to the area has recently improved and ample mobility options exist. The Lincoln Park area has the necessary transportation elements in place to realize the visions set forth in their recent planning efforts.


MLC