

COMPREHENSIVE PLAN

THE CITY OF LAKE FOREST

MARCH 1998

AMENDMENT ADOPTED 6/01

AMENDMENT ADOPTED 6/13

AMENDMENT ADOPTED 11/16



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The Comprehensive Plan¹ is the City of Lake Forest's official statement to guide its physical, economic, environmental and social development. The Plan provides a framework to preserve and protect the existing built environment, and to guide future growth so that it is compatible with the quality of existing development in Lake Forest. To this end, the Plan is a *guide* for policy making.

The Comprehensive Plan considers the existing land use pattern, development trends and patterns in areas surrounding the City, and the physical, topographical and ecological character of land within the City. The Plan addresses new growth areas, business districts, traffic conditions, and community facilities. The Plan analyzes these issues relative to their impact on the City, as well as the impact of development in contiguous areas within one and one-half miles from the corporate limits, which might be considered for annexation.

It is intended that the implementation of the Plan will help insure the continuance of a strong tax base which will enable the City to maintain, if not improve, existing levels of services and public facilities for its residents.

The Plan is intended to serve as a guide for future policy decisions, and its recommendations can be reconsidered in the presence of compelling circumstances. In addition, the Plan is advisory and should not, in of itself, be construed to control the use of private property, except as such part may be regulated by ordinances duly enacted by the City Council of The City of Lake Forest.

The Plan provides a framework to preserve and protect the existing built environment and to guide future growth.

The Plan is advisory and is intended to serve as a guide for future policy decisions.

¹The City of Lake Forest developed its first Comprehensive Plan in 1955. The City has continued to update the Plan as needed in 1978, 1981, 1986, 1988 and finally 1992. The revision of the current Comprehensive Plan began in October 1994.

1. RESIDENTIAL CHARACTER & DEVELOPMENT

Define clearly Infill Development so as to include the demolition/addition process, resubdivision of previously subdivided properties, and preservation of neighborhood character. Related issues include transitional zoning, multifamily development and housing for the elderly.

Maintain and promote a compatible and efficient land use pattern, which will help insure the continuation of a strong tax base for the City, and enable it to maintain existing or expanded levels of services and community facilities.

Goals and Objectives:

- i) Provide a land use pattern that takes into consideration the need for transitional zoning and is sensitive to unique land characteristics.
- ii) Maintain high standards in all new development and rehabilitation, including infill developments, giving special consideration to the unique character of each area of the City. This includes preservation of historic landmarks and architecturally significant structures.
- iii) Encourage the majority of residential development to be single family with provision for controlled expansion of other dwelling types which may include housing for the elderly.

Define Infill Development so as to include demolition/addition process, resubdivision and preservation of neighborhood character.

Related issues include transitional zoning, multi-family development and senior housing.



Determine land use and density of remaining growth areas.

Consider annexation in order to encourage positive impacts on the City and to promote high standards of development in the periphery.

Monitor the progress of the redevelopment of Fort Sheridan.

2. NEW GROWTH AREAS

Determine the land use and density of remaining undeveloped land. Integrate new developments into the existing community. New developments are to be planned in consideration of the character of surrounding areas as defined by unique natural and architectural features, densities and land uses. This is essential in order to maintain strong property values and in turn, a solid tax base.

Additionally, evaluate and, to the extent possible, influence the significant amount of development taking place outside the City limits to insure a positive impact on the community. Special consideration should be given to Fort Sheridan.

Goals and Objectives:

- i) Determine the land use and density of remaining growth areas within the City.
- ii) Assure that new developments are connected with existing ones in terms of street networks, access to facilities, and utilities.
- iii) Consider the annexation of additional land, adjacent to City limits and east of Illinois Tollway, in order to control its development and carry out the goals of this plan.
- iv) Monitor surrounding areas within one and one half miles of the City's corporate limits in order to encourage positive impacts on the community, and to promote high standards for developments in the periphery.
- v) Monitor the progress of the redevelopment of Fort Sheridan and, through all available means, influence that process to insure a reuse compatible with the character of Lake Forest. This will include an analysis of the impact of the redevelopment on the traffic patterns in the City.

3. ENVIRONMENTAL CONCERNS

Preserve and enhance natural features such as ravines, woodlands, bluffs, wetlands, floodplains, beaches and the shoreline of Lake Michigan. Diminish noise, visual, air and water pollution. Maintain the appearance of the community through landscaping and historic preservation.

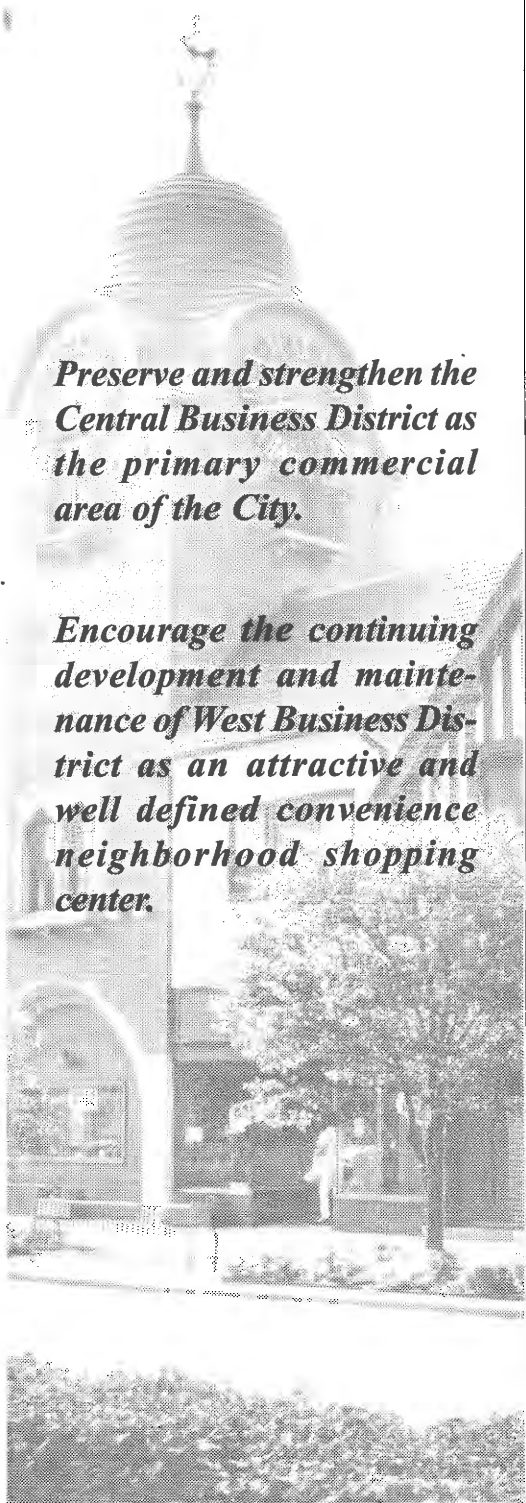
Goals and Objectives:

- i) Maintain standards and regulations pertaining to the development of bluffs, ravines, woodlands, wetlands, floodplains, beaches and shoreline of Lake Michigan. Coordinate with county, regional, state and federal agencies in their protection and preservation.
- ii) Acquire development rights and easements, where necessary, to preserve open space, scenic views, woodlands, wetlands, floodplains, and the like.
- iii) Enforce existing regulations regarding noise, signage, and natural or artificial lighting so that their intrusion on the built environment is minimal.
- iv) Require all development, including infill and new construction, within the Historic Residential and Open Space Preservation District to be compatible with existing developments in order to preserve the District's character. Preserve unique and quality environmental features so that they remain a valued part of the heritage of The City of Lake Forest.



Preserve and enhance natural features.

Maintain the appearance of the community through landscaping and historic preservation.



Preserve and strengthen the Central Business District as the primary commercial area of the City.

Encourage the continuing development and maintenance of West Business District as an attractive and well defined convenience neighborhood shopping center.

4. BUSINESS DISTRICTS

Areas of concern, relating to both the Central and West Business Districts, include their sizes and whether they should be service or retail oriented. This issue will have a direct bearing on the tax revenue generated for the City. Other concerns include parking, pedestrian circulation, historic preservation, overall aesthetics and economic vitality.

Goals and Objectives:

- i) Preserve and strengthen the Central Business District (CBD) as the primary commercial area of the City. Require new development to be compatible with the historic character of the CBD. Promote vitality and convenience of the CBD by encouraging a wide range and healthy mix of comparative and quality retail and service businesses.
- ii) Encourage the continuing development and maintenance of West Business District, as an attractive and well-defined convenience neighborhood shopping area. Consider the promotion of comparative retail and service businesses.
- iii) Continue to provide efficient pedestrian circulation and adequate automobile and bicycle parking facilities in the business areas through joint public and private financing.

5. TRANSPORTATION

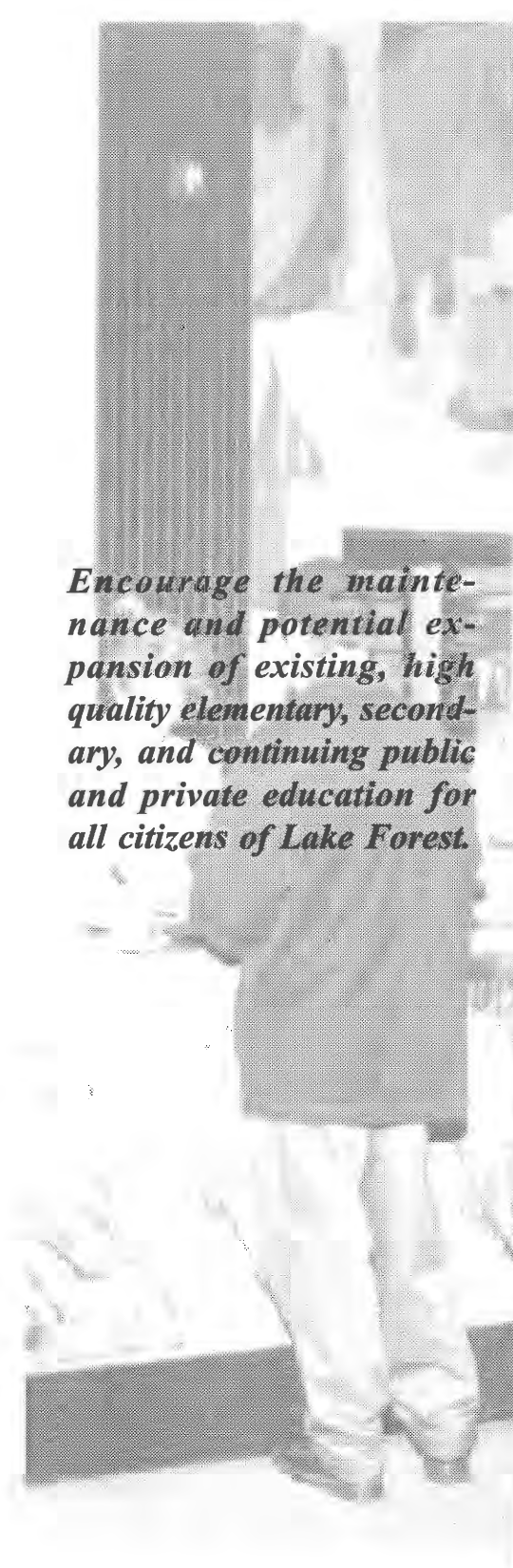
Address the traffic issues in the Central Business District, as well as the overall increase of traffic within the City, which has been caused primarily by growth in areas adjacent to the City, residential growth within the City, changes in the composition of the CBD, and increased use of the three major state highways bisecting the City. The analysis should include a review of the possible alternatives to improve the City's east-west circulation.

Goals and Objectives:

- i) Maintain and develop roads, streets, and highways in proper scale with their intended and adjacent land uses so they are capable of safely handling present or anticipated traffic volumes. Give specific consideration to areas in the vicinity of the hospital. Reserve adequate rights-of-way where inter- and intra - neighborhood traffic needs exist. This should relate to the goal under New Growth Areas, requiring new developments to be adequately connected with the existing neighborhoods.
- ii) Maintain and improve intersections and traffic control devices to provide adequate safety.
- iii) Formulate alternatives or improvements to the City's east-west circulation.
- iv) Consider immediate and future street and bridge improvements.
- v) Establish new, and maintain and improve existing, bicycle and pedestrian systems including the provision of adequate street and sidewalk connections.
- vi) Consider the implementation of convenient, public transportation for residents.

Maintain and develop roads, streets and highways so that they are capable of safely handling present or anticipated traffic volumes.

Establish new and maintain and improve existing bicycle and pedestrian systems.



Encourage the maintenance and potential expansion of existing, high quality elementary, secondary, and continuing public and private education for all citizens of Lake Forest.

6. COMMUNITY SERVICES AND RESOURCES

Being in the final build-out phase of the community, the maximum population potential should be analyzed to evaluate future needs in terms of additional facilities and essential services. Existing facilities like schools, public buildings, parks etc., should be assessed to determine if they are adequate for current and future needs. This will include a parks/open space plan for maintenance and enhancement of existing facilities and new acquisitions.

Goals and Objectives:

i) Education and Culture

- a) Encourage the maintenance and potential expansion of existing, high quality elementary, secondary, and continuing public and private education for all citizens of Lake Forest.
- b) Encourage constructive programs through the City's Recreation Department and the like, for all citizens.
- c) Encourage the continued use of high quality City library services in conjunction with local, private and public educational resources.

ii) Parks and Open Space

- a) Maintain cooperative use and provision of school/ park sites and other public and private recreational facilities to provide maximum recreational opportunities that are handicap accessible, and thereby avoid expensive duplication.
- b) Encourage the preservation of open space, where deemed appropriate, through all means.

- c) Provide passive and active recreational facilities at the community and neighborhood level.
- d) Maintain and enhance the City's cemetery and recreational facilities including golf, beach, and boating.

iii) Community Facilities

- a) Continue the orderly maintenance and expansion of the sanitary sewer and storm drainage system and the water filtration and distribution system, to satisfy existing and future needs.
- b) Maintain adequate refuse collection including review of present and future use of City's compost center.
- c) Maintain, at a minimum, the existing level of fire and police protection.
- d) Maintain all other City services, commensurate with sound fiscal policy. Seek new sources of revenue for the continued provision of these services at current or expanded levels.



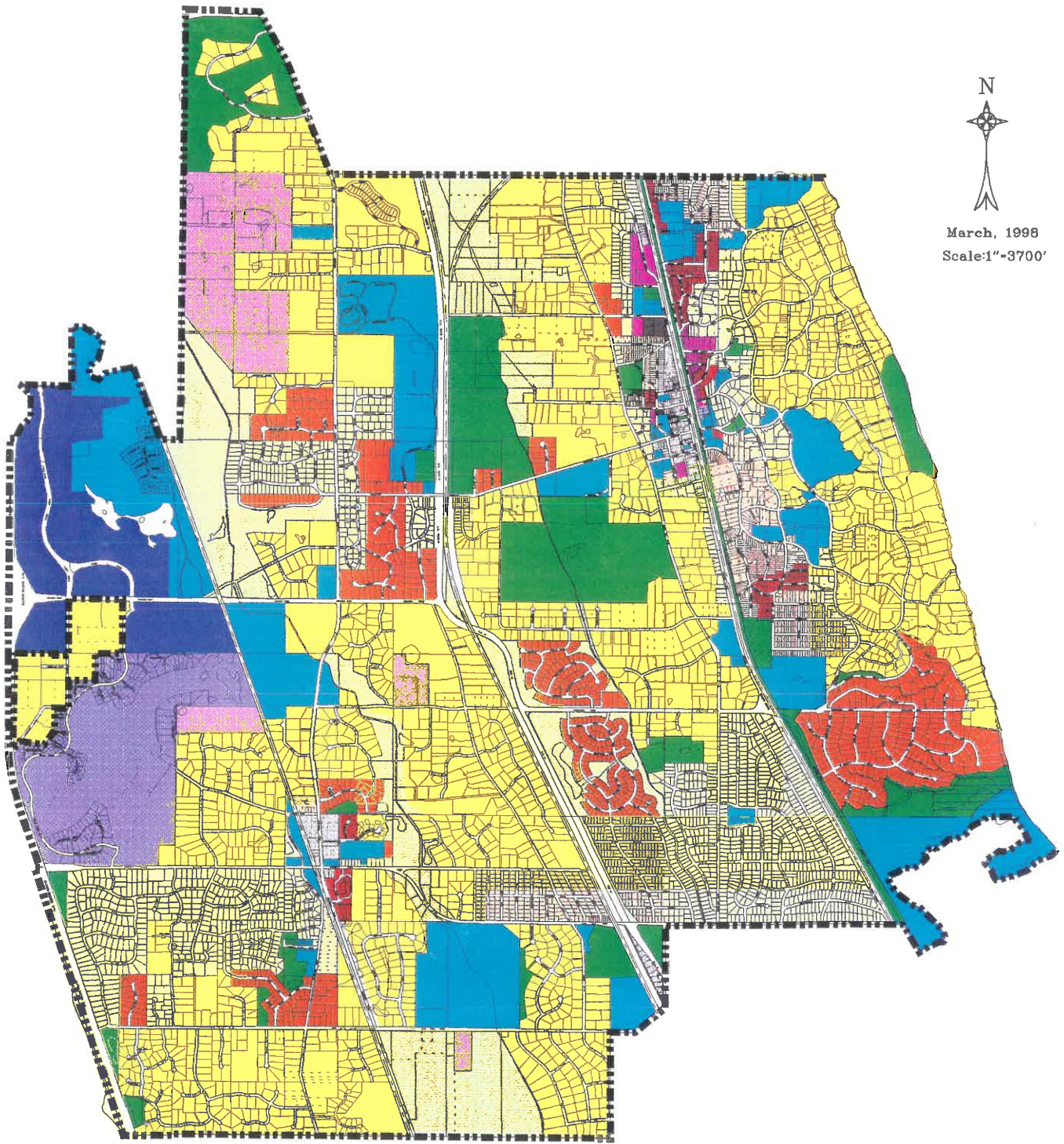
Encourage preservation of open space.


















Provide passive and active recreational facilities at the community and neighborhood level.

FIGURE 3.0 COMPREHENSIVE LAND USE PLAN



March, 1998
Scale: 1"=3700'



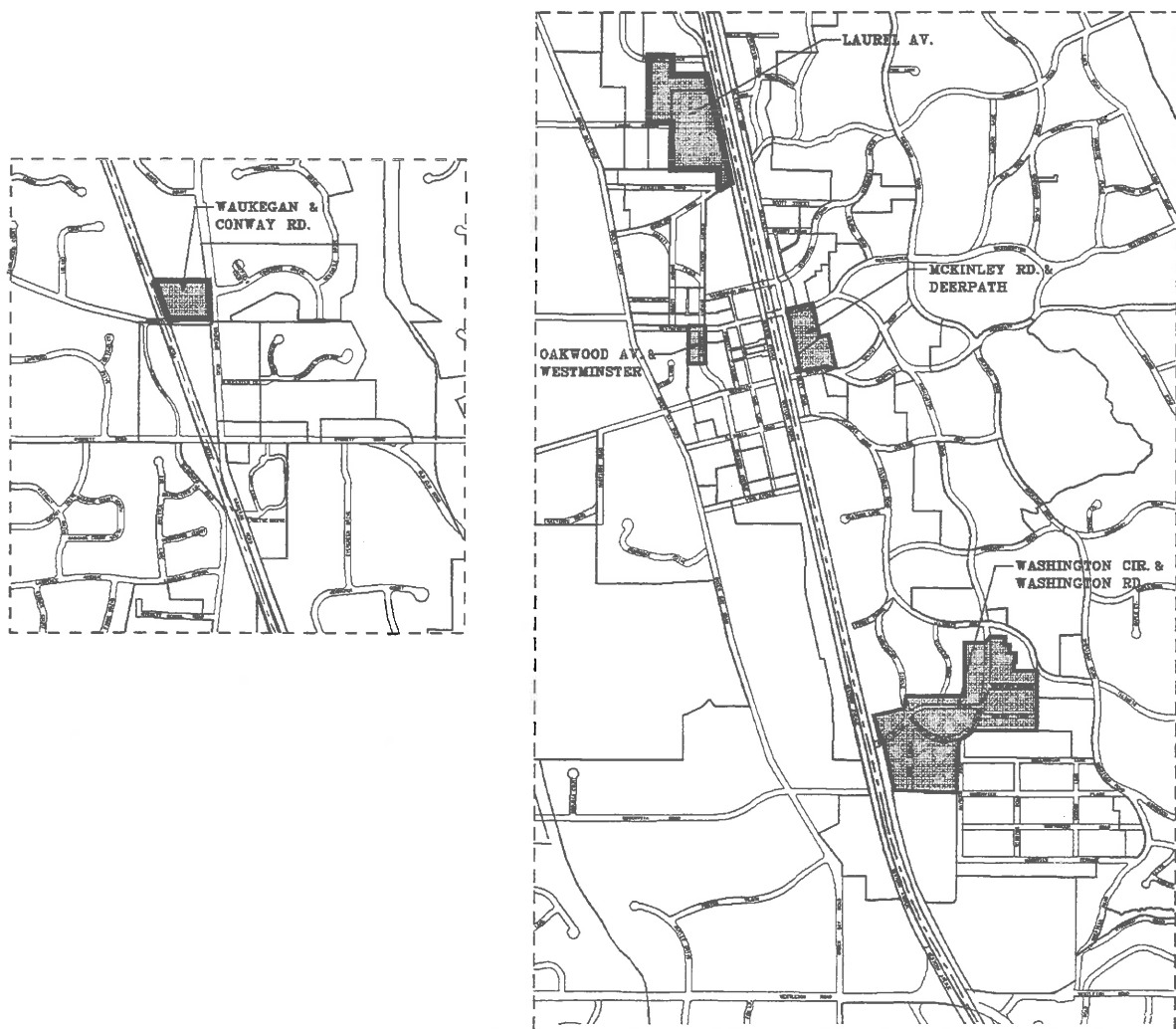
- | | | | |
|---|--|---|-------------------------------------|
|  | RESIDENTIAL OPEN SPACE |  | PUBLIC AND/OR PRIVATE INSTITUTIONAL |
|  | SPECIAL ESTATE RESIDENTIAL (1 D.U./ 1.5 AC. MINIMUM) |  | PROFESSIONAL OFFICE |
|  | ESTATE RESIDENTIAL (1 D.U./1.5 AC. MINIMUM) |  | OFFICE RESEARCH |
|  | SINGLE FAMILY RESIDENTIAL (1 D.U./AC. MAXIMUM) |  | RETAIL COMMERCIAL |
|  | SINGLE FAMILY RESIDENTIAL (2 D.U./AC. MAXIMUM) |  | SERVICE COMMERCIAL |
|  | SINGLE FAMILY RESIDENTIAL (4 D.U./AC. MAXIMUM) |  | PARK AND RECREATIONAL |
|  | ATTACHED SINGLE AND TWO FAMILY RES. |  | OPEN SPACE |
|  | MULTIPLE FAMILY RESIDENTIAL |  | RAILROAD |
|  | MULTIPLE FAMILY AND COMMERCIAL/RETAIL | | |

1. TRANSITIONAL ZONES

Transitional zones are buffer areas between different land uses and/or densities. Additionally, these are areas which may be subject to redevelopment. Please refer to Figure 4.1.

In keeping with this definition five areas in the City have been defined as transitional zones.

Figure 4.1. TRANSITIONAL ZONES



The existing multiple family land use design should be maintained for this zone.

The area along June Terrace and north of Woodlawn Avenue should be changed from duplex to single family residential land use designation with a density of 4 dwelling units to the acre.

The remaining parcels within the transitional zone should maintain their existing land use and densities.

1.1 Oakwood and Westminster

This zone includes the area along the west side of Oakwood Avenue, between Westminster to the north and the City's parking lot on Deerpath to the south (refer to Figure 4.1.1).

The existing multiple family land use designation should be maintained for this zone. This block serves as a long standing transition area from the commercial uses to the east, to the single family residential uses to the west. It also consists of some of the affordable and more accessible housing units in the City. This existing housing should be preserved, given the lack and/or decreasing supply of smaller housing in the City in close proximity to the Central Business District. In addition, the higher density of this development is appropriate given its proximity to the train station and retail/commercial areas. The location of the housing also contributes directly to the ambiance and vitality of the Central Business District.









1.2 Area East of Western Avenue Around Washington Circle and Washington Road

This zone includes the area east of Western Avenue around Washington Circle and Washington Road (refer to Figure 4.1.2). The transitional area is developed with single family residences and duplexes which are well maintained and of moderate size relative to larger residences which generally characterize the east side of Lake Forest.

A study conducted by the City in 1990, showed that there were approximately 160 properties in this area of which 65% were single family units and 30% were duplexes. At that time there were 8 vacant lots. The predominant concentration of duplexes is centered around Ivy Court, Cherry Avenue, Woodlawn Avenue, and between Ryan Place and Washington Circle. An analysis in 1995 showed that there has not been any significant change in the location or ratio of single family to duplex units over the past 5 years. In fact, the study shows that more duplex units have been converted to single family use, than vice versa.

FIGURE 4.1.1
TRANSITIONAL ZONE ON
OAKWOOD AVENUE AND WESTMINSTER



- | | | |
|---|-------------------------------------|--------------------------|
|  | ESTATE RESIDENTIAL | (1 D.U./1.5 AC. MINIMUM) |
|  | SINGLE FAMILY RESIDENTIAL | (2 D.U./AC. MAXIMUM) |
|  | SINGLE FAMILY RESIDENTIAL | (4 D.U./AC. MAXIMUM) |
|  | ATTACHED SINGLE AND TWO FAMILY RES. | |
|  | MULTIPLE FAMILY RESIDENTIAL | |
|  | PUBLIC AND/OR PRIVATE INSTITUTIONAL | |
|  | PARKS AND RECREATION | |
|  | RETAIL COMMERCIAL | |

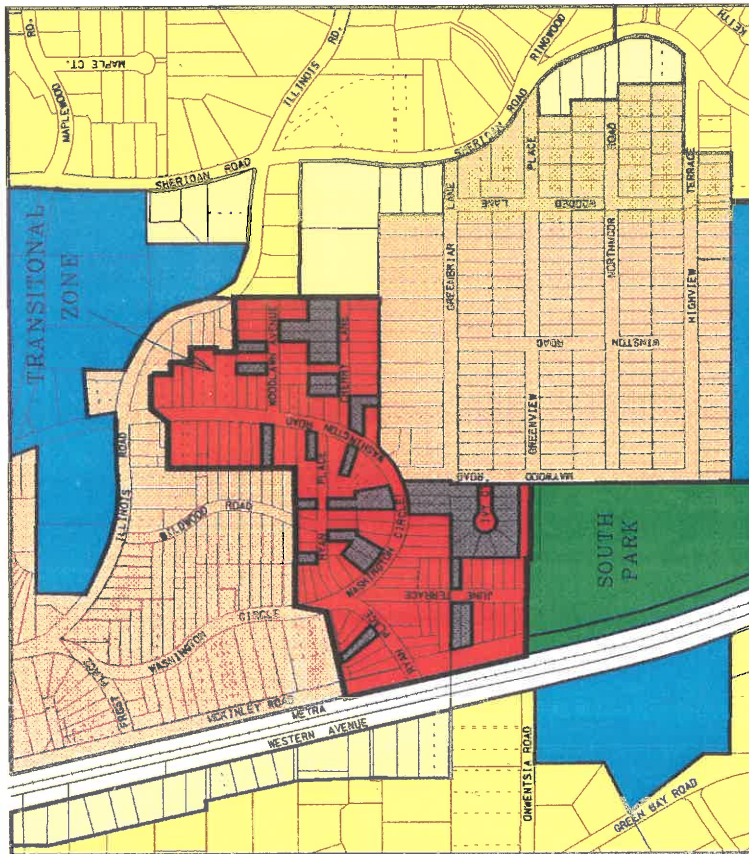


December, 1997
 Scale: 1"=570'

FIGURE 4.1.2

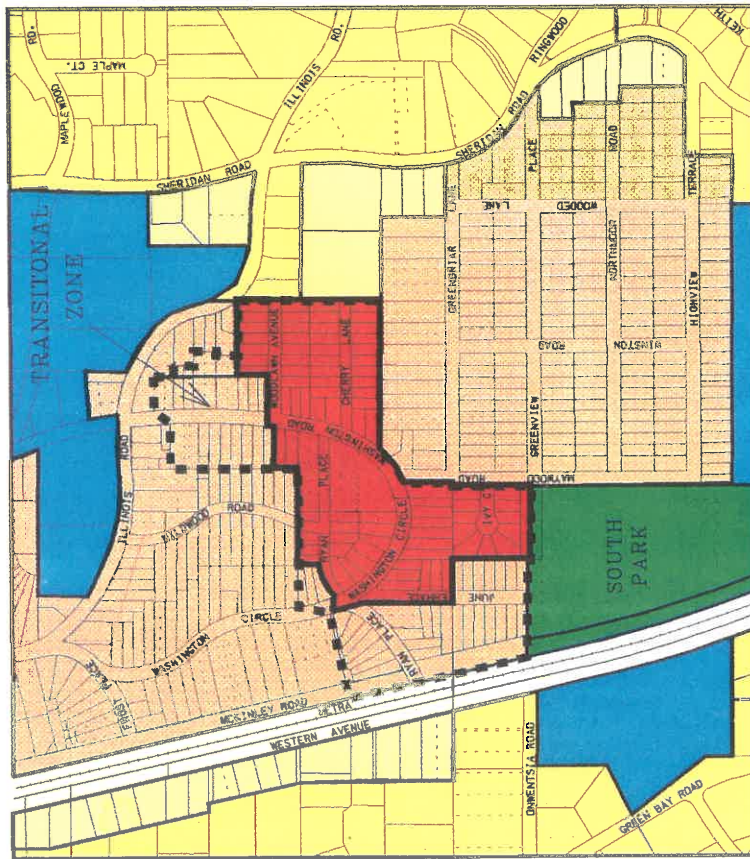
TRANSITIONAL ZONE AROUND WASHINGTON CIRCLE & WASHINGTON ROAD

EXISTING LAND USE



- ESTATE RESIDENTIAL (1 D.U./1.5 AC MINIMUM)
- SINGLE FAMILY RESIDENTIAL (2 D.U./AC MAXIMUM)
- DUPLEX UNITS (1990)

PROPOSED LAND USE



- SINGLE FAMILY RESIDENTIAL (4 D.U./AC. MAXIMUM)
- ATTACHED SINGLE AND TWO FAMILY RES.
- PUBLIC AND/OR PRIVATE INSTITUTIONAL
- PARK AND RECREATION

The expressed desire of the City is to maintain the predominantly single family character of this neighborhood. Therefore, conversions of single family homes to duplex units would not be appropriate in the predominantly single family residential areas around June Terrace and north of Woodlawn Avenue. On the other hand, there is a need to preserve the potential for development of the more reasonably priced housing stock in the City, which could include duplex development. Moderate size housing has been steadily decreasing due to demolition/rebuilds and conversions to larger, more modern structures. The transitional zone in question currently includes housing which is relatively accessible to young families. This is particularly true of the duplex units. In addition this transitional area is advantageously located, particularly for young families, as it is close to several community facilities including South Park, the Central Business District, train station, and the library.

The Plan recommends that the two sections of the existing transitional zone referenced above, specifically along June Terrace and north of Woodlawn Avenue, should be changed from a duplex to single family residential land use designation with a density of 4 dwelling units to the acre. These areas are delineated in Figure 3B and are further described as follows:

- i) **Washington Road (both sides of the street), from Woodlawn Avenue to the northern limits of the transitional zone.**

All the residences included in this area are single family units. In addition the subject area is surrounded by single family residences with a density of 4 units to the acre

on its north, east and west borders. It would therefore be appropriate to change the land use designation of this area to complement the surrounding single family residential use, and to maintain the existing character of Washington Road.

- ii) **Both sides of June Terrace and Ryan Place to the northern limits of the transitional zone.**

The residences on these streets are predominantly single family in use and in all likelihood will remain. The existing single family residential character of June Terrace is of a distinguished quality and therefore, should be preserved. As such, it would be appropriate to change the land use designation of this area from duplex to single family residential.

The remaining areas within the transitional zone should maintain their existing land use and densities. These areas contain a higher percentage of duplexes which should be maintained given the limited supply of more modestly priced housing available in the City.

1.3 Parcel on the Northwest Corner of Waukegan and Conway Roads

This transitional zone is bounded by Conway Road on the south, Waukegan Road on the east, and the railroad tracks on the west (see Figure 4.1.3).

The land use of the subject parcel should be changed from single family residential with a maximum density of four dwelling units per

The land use for the parcel should be changed to attached single and/or multifamily residential.

The northern section of this zone should be redesignated for multi-family residential use.

Single family residential designation should be maintained for the parcel facing Westminster, on the northeast corner of the zone.

The area in front of Masonic Lodge should be designated as open space. The area occupied by Masonic Lodge should be redesignated as public-private institutional use.

acre, to attached and/or multi-family dwelling units. The suggested change in the residential land use designation could support a zoning change.

In 1996-97 the subject parcel was developed with attached single family residences, consistent with the recommended land use.

1.4 Area Adjacent to and East of McKinley Road, Bounded by Westminster on the North and Deerpath on the South.

The subject area acts as a transition from commercial uses on the west to single family residences on the east, and from single family residential uses on the south to duplex and multifamily uses to the north. The area on the north side of Westminster has a landuse designation for multifamily and attached single family residences. The south half of the zone and the area across Deerpath, are designated as public and private institutional. The area on the east of the transitional zone is designated as single family residential with a maximum density of two dwelling units to the acre. Refer to Figure 4.1.4.

A church and the library are located immediately north of Deerpath. The parcels originally designated with a two family residential land use are occupied by the Masonic Temple and a public open space fronting on Westminster. Most of the lots within the original professional office designation have been developed with two-story office buildings with parking to the rear. The remaining parcels in the zone, around the southeast corner of Westminster and McKinley have modest, single family houses which are likely to be redeveloped in the near future given their size, age and location.

The intent of the original professional office designation was to provide for a mixed development, consisting of a combination of offices on the ground floor with residences above. This is further articulated under the Zoning Code's requirements for this area, which is zoned O1, Office. However, this area has been primarily redeveloped with offices without

**FIGURE 4.1.3
TRANSITIONAL ZONE ON WAUKEGAN
AND CONWAY ROADS**

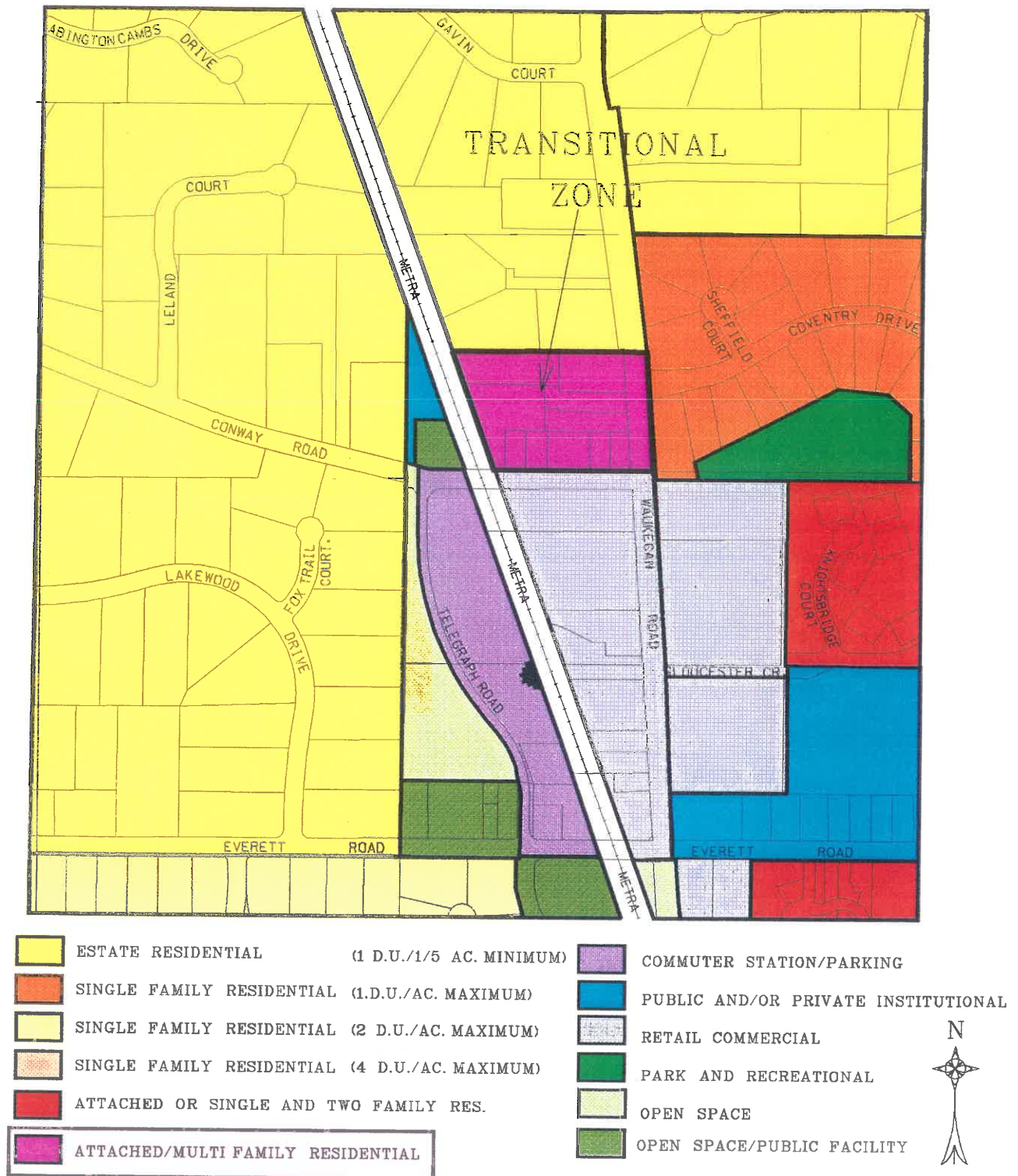
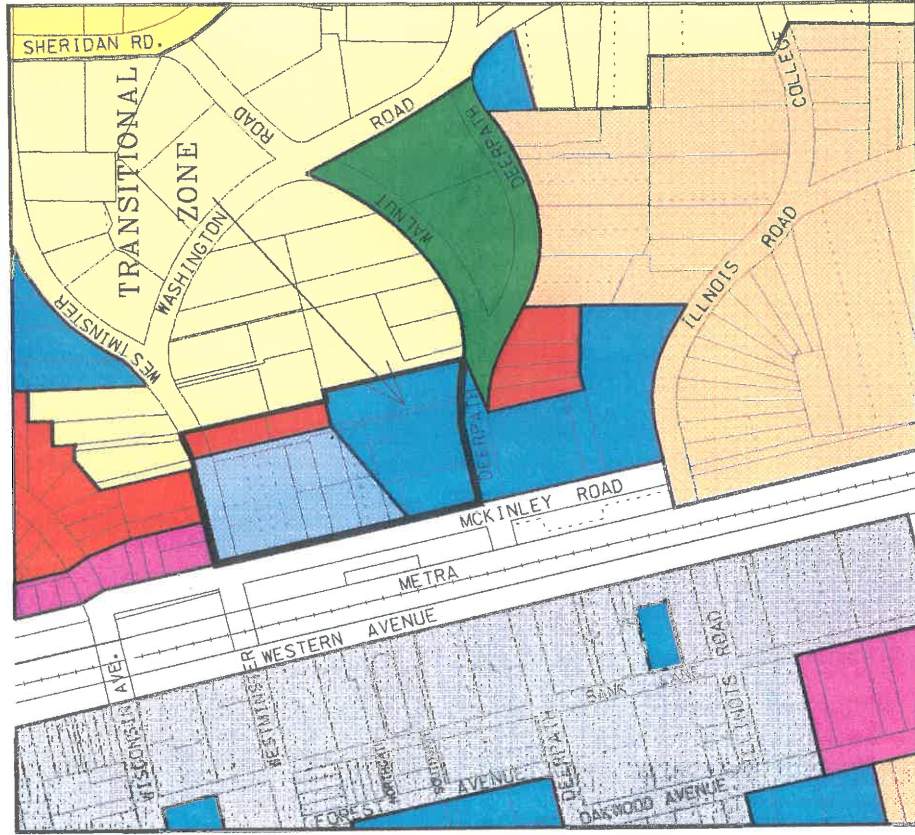


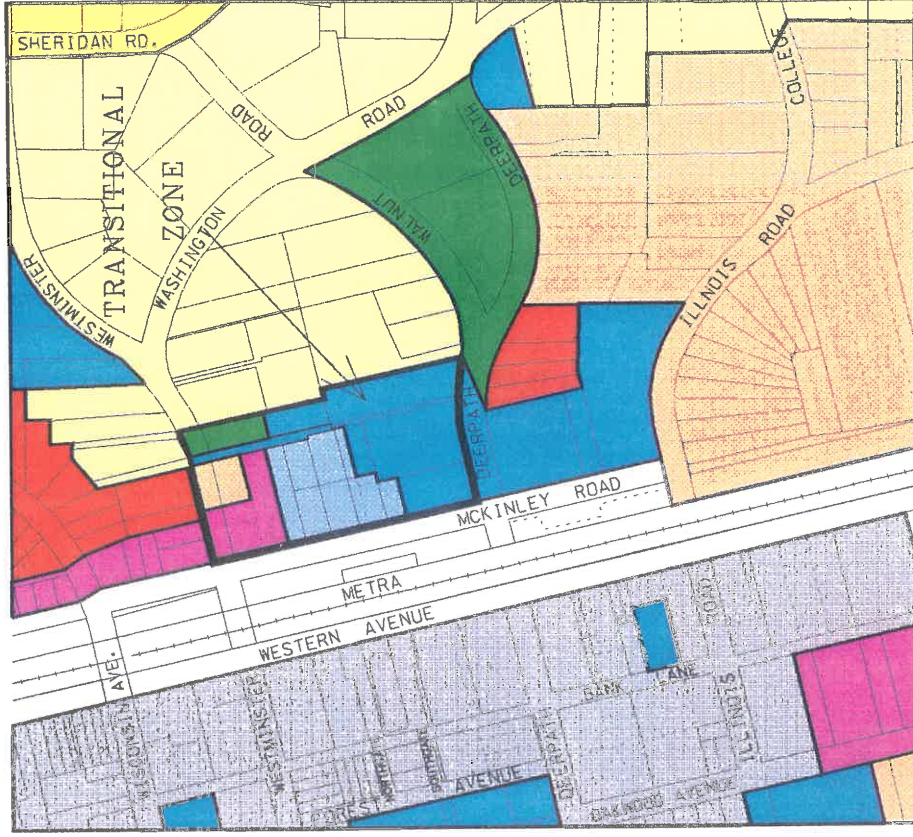
FIGURE 4.1.4 TRANSITIONAL ZONE EAST OF MCKINLEY ROAD

EXISTING LAND USE



- SINGLE FAMILY RESIDENTIAL (4 D.U./AC MAXIMUM)
- MULTIPLE FAMILY RESIDENTIAL
- PROFESSIONAL OFFICE
- PUBLIC AND/OR PRIVATE INSTITUTIONAL
- PARKS AND RECREATION

PROPOSED LAND USE



- ESTATE RESIDENTIAL (1 D.U./1.5 AC MINIMUM)
- SINGLE FAMILY RESIDENTIAL (2 D.U./AC MAXIMUM)
- ATTACHED SINGLE AND TWO FAMILY RES.
- RETAIL COMMERCIAL



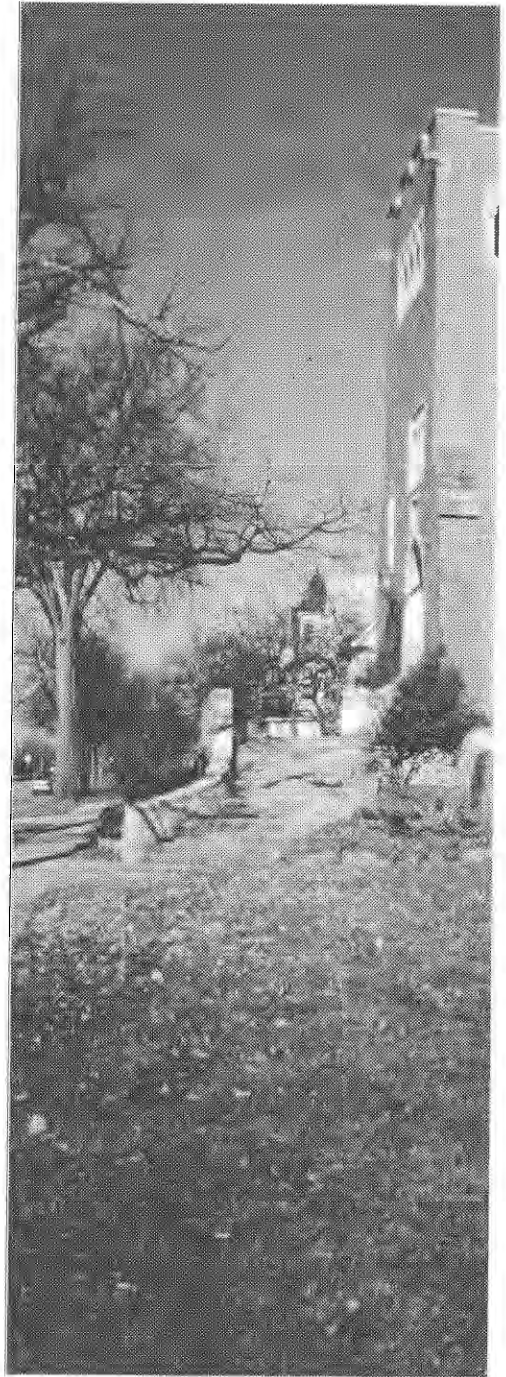
December, 1997
Scale: 1"=510'

residential units. Nonetheless, this zone ideally should include multi-family units, given its proximity to the train station, several religious institutions, the library, the Gorton Community Center and the Central Business District. This housing would be attractive to young adults, empty nesters and seniors, who desire relatively smaller, low maintenance living units that are well situated to public facilities.

Given the existing office space within the transitional zone, the Plan recommends that the northern portion of this area be redesignated for multifamily residential use. With this land use redesignation there would still be a mix of office and residential use, as originally envisioned, within the entire zone. In addition, these parcels should be developed as a single, planned development to ensure continuity of form and design.

However, a single family residential designation should be maintained for the parcel facing Westminster, on the northeast corner of the zone. This parcel is developed with a well-maintained, single family residence, which should be preserved. This structure would serve as an appropriate transition between the proposed multi-family use on the west, to single family residences on the east.

Additionally, the City supports the restoration of the Masonic Temple located on the east side of the zone, to house the Lake Bluff-Lake Forest Historical Society or a similar use. The City also intends to maintain the open space along Westminster in front of the Masonic Temple. Both are low intensity uses which complement the existing character of that area of Westminster. Therefore the original duplex residential designation of this area, should be changed to open space for the area in front of Masonic Lodge, and to public-private institutional use for the remaining area.



1.5 Area to the West of the Western Avenue - Laurel Avenue Intersection

The area to the west of the intersection of Western and Laurel Avenue consists of approximately 16 acres of land. The land use designation for this parcel, as specified in the 1989 Comprehensive Plan, included a mix of service, commercial and public-private institutional uses. In 1995, the three major users within the study area were, Blanchards, Knauz Motors and the Municipal Services Building. Both Blanchard's and Knauz have substantial outdoor storage area which greatly impact the visual character of the neighborhood. The north and west sides of the Knauz property are bounded by the Municipal Services Building. The City's facility has a landscaped area fronting onto Laurel Avenue, Western Avenue and Franklin Place, but generates a substantial amount of traffic in the area due to the nature of its operation. Condominiums on the south side of Laurel Avenue, and three single family residences adjacent to Knauz and north of Laurel Avenue, are the remaining uses within the study area.

The land uses surrounding the study area (refer to Figure 4.1.5) are primarily residential, consisting of a mix of multifamily units to the west and north, the railroad tracks and bike path on the east, and single family units to the southwest. The uses to the west of the study area include three condominium buildings, developed at an average density of approximately 12 units per acre. Crystal Point is developed at a density of 20 units per acre and is located north of the Municipal Services site. To the south of Blanchard's, along the north side of Atteridge Road, are single family residential units developed at densities of approximately

4 units per acre. To the east is the Chicago and Northwestern Railroad line and duplex residential areas.

The parcels mentioned above have been identified because they are likely to be subject to redevelopment in the near future and because their location between six land use classifications, including the Central Business District to the south and residential districts to the north, east and southwest, forms a natural transitional zone.

The Plan Commission first studied this transitional area in 1981, when amendments to the Comprehensive Plan were considered. At that time it was felt that this area would be appropriate for businesses requiring greater area, e.g., a grocery store. It was also felt that non single family residential, along with office, might be appropriate usage for the area.

With the development of the Jewel grocery store south of the study area, the need for another business no longer remains a viable consideration. In addition, other large business uses would not be desirable due to their adverse impact on the surrounding residential neighborhood, particularly in terms of traffic.

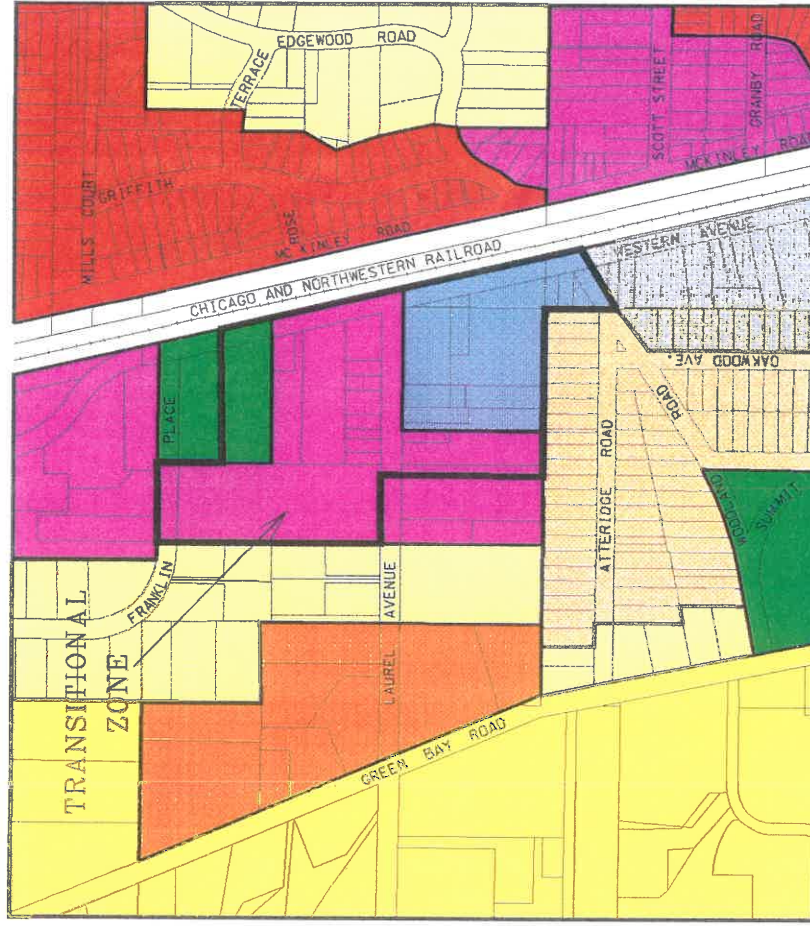
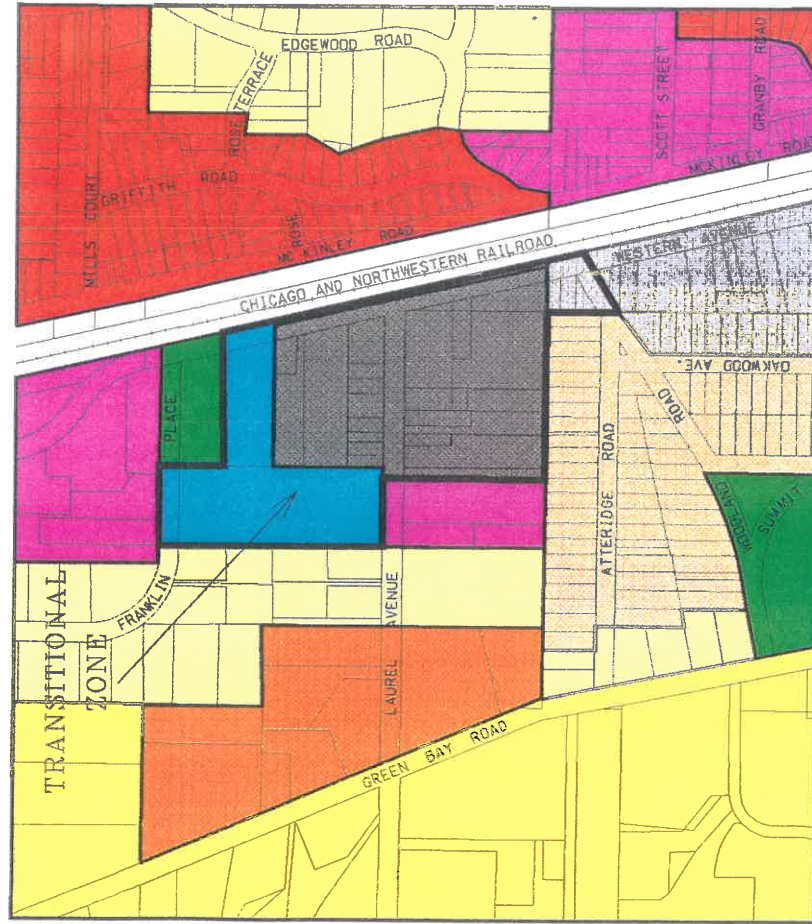
Therefore, multifamily residential units, with a mix of retail and/or office uses limited to the frontage on Western Avenue, should be designated for the parcels north and south of Laurel Avenue. A portion of the municipal services property fronting Western Avenue and south of the Franklin Place Park should be designated with park and recreation use.

These land use changes are recommended for the following reasons:

FIGURE 4.1.5
TRANSITIONAL ZONE ON WESTERN AVENUE & LAUREL AVENUE

EXISTING LAND USE

PROPOSED LAND USE



- ESTATE RESIDENTIAL (1 D.U./1.5 AC MINIMUM)
- SINGLE FAMILY RESIDENTIAL (1 D.U./AC. MAXIMUM)
- SINGLE FAMILY RESIDENTIAL (2 D.U./AC MAXIMUM)
- SINGLE FAMILY RESIDENTIAL (4 D.U./AC. MAXIMUM)

- ATTACHED TWO FAMILY RES.
- PUBLIC AND/OR PRIVATE INSTITUTIONAL
- SERVICE COMMERCIAL
- RETAIL COMMERCIAL

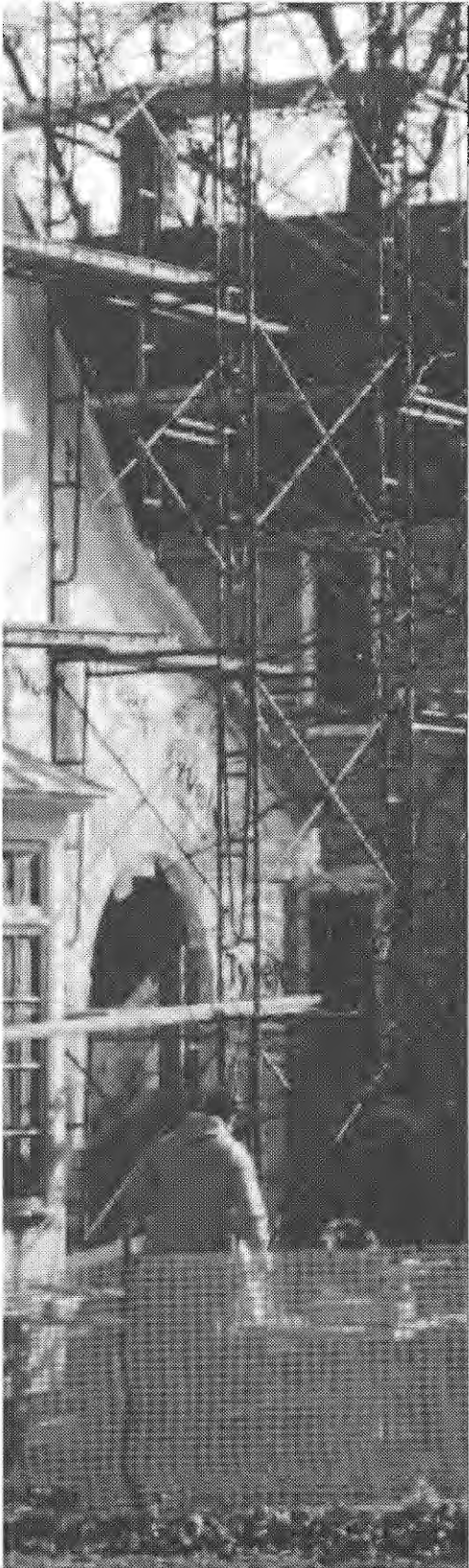
- MULTIPLE FAMILY RESIDENTIAL
- MULTI FAMILY AND COMMERCIAL /RETAIL
- PARK AND RECREATIONAL



- i) Traffic resulting from a full redevelopment of the area per the existing land use plan, would adversely effect traffic patterns in the neighborhood, particularly in the area of the Woodland Road-Western Avenue intersection.
- ii) A study done by the City shows that the Central Business District has grown by approximately 55% during the period from 1974-1994. Office space increased from 25% to approximately 50% of the total CBD area over the two decades. In contrast, the area used for retail decreased from roughly 75% to 50% during the same period. Further expansion of office uses should be minimized in order to maintain the character of the Central Business District. In addition, there might not be a substantial need for additional commercial space in the future, given the past 20 year's expansion of the Central Business District, and the potential sites available in the Settler's Square Business District.
- iii) In Lake Forest there is a need for lower maintenance, more affordably priced housing, which can be realized in the form of multifamily units, and which is located in close proximity to the Central Business District, to transit facilities, and other community facilities like the library, and religious institutions. In addition the study area is surrounded by residential uses, and if designated for multifamily use, would serve as a transition from single family residences on the southwest to multi-family units on the north and east.

Given these factors, the original service commercial land use designation of the subject area should be changed to park and recreation, and a mix of multifamily and commercial use, with the commercial uses being limited to the frontage along Western Avenue. This would be compatible with the density of other multi-family developments on Laurel Avenue. In addition, the parcels south of Laurel Avenue should be redesignated for a mix of multi-family and retail/office use, with the commercial uses limited to the frontage along Western Avenue.

Multifamily residential units, with a mix of retail and/or office uses limited to the frontage on Western Avenue, should be designated for the parcels north and south of Laurel Avenue. A portion of the municipal services property fronting Western Avenue and south of the Franklin Place park should be designated with park and recreation use.



2. INFILL DEVELOPMENT

Infill development consists of construction on parcels in older, more established neighborhoods which are characterized by an older housing stock, smaller lots, and mature landscape. Therefore, infill would not include construction in newer subdivisions that are in their final phases of development. Infill may include new construction, additions to existing structures, and demolition and redevelopment. Successful infill may include the preservation and renovation of smaller, more affordable housing that will preserve and enhance rather than alter or contradict the existing character of a given area.

Key considerations guiding the design process of infill development are as follows:

i) Context:

Infill responds to the historical significance and architectural themes and how each contributes to the character of an area.

ii) Architectural Vocabulary:

Infill responds to the prevailing architectural style, design, material types, texture and color within a neighborhood. This includes sensitive facade treatment in terms of size and arrangement of windows and doors on the street facing elevation. This does not however, exclude a sensitive interpretation of traditional forms and styles in a more contemporary manner.

iii) Building Scale:

Infill respects the prevailing scale, height, setbacks, bulk, gross floor area of existing structures in the neighborhood.

iv) Landscape and Streetscape:

Infill respects the established landscape and streetscape patterns in the neighborhood.

3. SENIOR HOUSING

Senior housing consists of residential units which in terms of location, amenities and cost, meets the special needs of the retired and elderly population of Lake Forest. *Affordable* senior housing refers to housing owned or rented at/or below fair market rates.

In 1984, a senior citizen survey conducted by the Recreation Department revealed community concern regarding availability of affordable senior housing. Senior housing, especially that which was affordable, remained an important consideration for the following years. In June 1991, the Lake Forest Strategic Planning session identified "Development of Senior Housing" as a community issue. An Ad Hoc Senior Housing Committee was formed in September 1993, and its findings stated that there continued to be a lack of housing which met the needs of the elderly population of Lake Forest, particularly that which was affordable. The Committee stated that the existing housing stock suitable for seniors such as rental apartments and smaller single family homes, had been decreasing over the past 20 years. This reduction was largely due to the conversion of rental units to office use and/or the expansion or demolition of smaller residences. The Committee found that the dwindling supply of appropriate and affordable housing was forcing senior residents of Lake Forest to locate elsewhere¹. In May 1995, a Senior Citizen Housing Commission was established to investigate potential sites within the City for affordable senior housing².

The development of senior housing in Lake Forest should consider the following:

3.1 Senior Housing Options

Housing for seniors should have smaller living

quarters than an average single family residential unit in Lake Forest, a first floor master bedroom, and be easy to clean and maintain.³ Additionally, the housing should be equipped with elevators and a security system.

In terms of cost, there is a market in Lake Forest for senior housing ranging in price from affordable to more expensive units⁴. Within this range there are several options:

i) Independent Living

Ownership and Rental Housing: Encompass a full range of housing types including single family homes, townhouses, condominiums or cooperatives.

ii) Community Living

Active Adult Communities: Large, master planned communities which offer a variety of housing types and include a number of centralized amenities that cater to retired, recreation-oriented buyers.

Congregate Care Facilities: Housing complexes that offer residents a variety of on-site services, including meals, transportation, housekeeping, and social activities. They may incorporate health and/or nursing care facilities.

Skilled Care Facilities generally offer skilled nursing care, with 24-hour supervision and medical assistance.

3.2 Programs For Developing Senior Housing

The development and preservation of Senior Housing, especially that which is affordable, should be supported and encouraged by both public and private agencies. Programs which provide financial incentives for developing af-



fordable housing (such as the Illinois Housing Department Authority tax credit program⁵.) should be considered to defray overall costs. The feasibility of such programs would be significantly increased if the cost of the land is contributed by either public or private sources.

3.3 Location Characteristics

The preferred location of senior housing, especially affordable senior housing, should have all or some combination of the following qualities:

- i) **easy access to commercial and retail facilities, religious institutions, medical care facilities, recreation and community institutions.**
- ii) **easy access to transportation.**
- iii) **safe environment.**

In 1995, the Senior Citizen Housing Commission identified potential sites for affordable senior housing, based largely on the above criteria⁶

¹ Based on results of the 1992 Alternate Housing Survey, distributed by the Plan Commission.

² Senior Housing Commission Report; October 26, 1995.

³ Based on results of the 1992 Alternate Housing Survey, distributed by the Plan Commission.

⁴ Tracy Cross & Associates, Inc.; *An analysis of the Market Potential for Affordable Rental Housing Directed Toward Senior Citizens in Lake Forest Illinois*; June 1994.

⁵ Tracy Cross & Associates, Inc.; *An analysis of the Market Potential for Affordable Rental Housing Directed Toward Senior Citizens in Lake Forest Illinois*; June 1994

⁶ Senior Housing Commission Report; October 26, 1995.

1. NEW GROWTH AREAS

New growth areas are developments that create new residential neighborhoods or add substantially to existing neighborhoods.

Historically, growth in Lake Forest has been incremental rather than large scale development over a brief span of time. The western section of Lake Forest, specifically the area west of Green Bay Road, has experienced the most dramatic growth in the past 25 years and will continue to bear development pressures. All remaining undeveloped areas are located in the west and northwest quadrants of Lake Forest.

1.1 Potential New Growth Areas

The new growth areas consist of large vacant parcels and smaller land holdings which are primarily designated for residential use. A few parcels on the west side of the City are also designated for Office Research use.

The Plan recommends that most of the new growth areas should be developed with Estate Residential land use with a maximum density of 1 dwelling unit per 1.5 acres. Some of these parcels have been identified with a "Special Estate Residential" land use designation which also has a maximum density of 1 dwelling unit per 1.5 acres. The parcels designated as "Special Estate Residential" have an underlying R5 residential zoning with a maximum density of 1 dwelling unit per 3 acres, unlike the "Estate Residential" parcels which have an underlying R4 residential zoning with a maximum density of 1 dwelling per 1.5 acres.

Any consideration of a request for rezoning these parcels from the existing R5 zoning densities of 1 dwelling unit per 3 acres to the recommended land use densities of one dwelling per 1.5 acres, will be based on the merits of the proposed subdivision plan. Approval of a request for a change in zoning from R5 is not a matter of right, but rather an issue to be considered based on the achievement of certain development standards. Furthermore, approval of a rezoning does not

Most of the new growth areas should be developed with "Estate Residential" land use with a maximum density of 1 dwelling unit/1.5 acres.

Some parcels have been identified with a "Special Estate Residential" land use with an underlying 1 unit/3acre residential zoning. If rezoning is requested, it will result in a development somewhere between 1unit/3acre and 1unit/1.5 acre densities, and will be considered based on achievement of certain development standards.

necessarily imply a sanction of the maximum of 1 dwelling unit per 1.5 acres. If rezoning does occur it will result in a development somewhere between R5 and R4 zoning densities. Determination of the appropriateness of a rezoning and resulting densities shall be evaluated on the successful fulfillment of the following criteria:

- i) the lot sizes and overall density of the proposed subdivision must respect the character and density of the surrounding developments.
- ii) greater building scale and height restrictions, than otherwise required, could be imposed in order to integrate the proposed development with the surrounding neighborhoods.
- iii) the proposed subdivision must preserve and maintain existing and/or restored on-site natural features such as, but not limited to, wetlands, woodlands, prairies, and savannas.
- iv) the proposed subdivision must provide an extraordinary buffer (like conservation easements) around the perimeter of the proposed development, in order to minimize its impact on any surrounding natural features, open spaces and forest lands.
- v) open space should be preserved especially if it is adjacent to other open areas, donation should be encouraged and may be required, where appropriate.

Innovative design and site planning solutions are encouraged when contemplating development to achieve the above stated purposes.

The areas originally classified as "Estate Residential" and to be redesignated with the "Special Estate Residential," land use, are indicated in purple in Figure 5.1.1, and include the following:

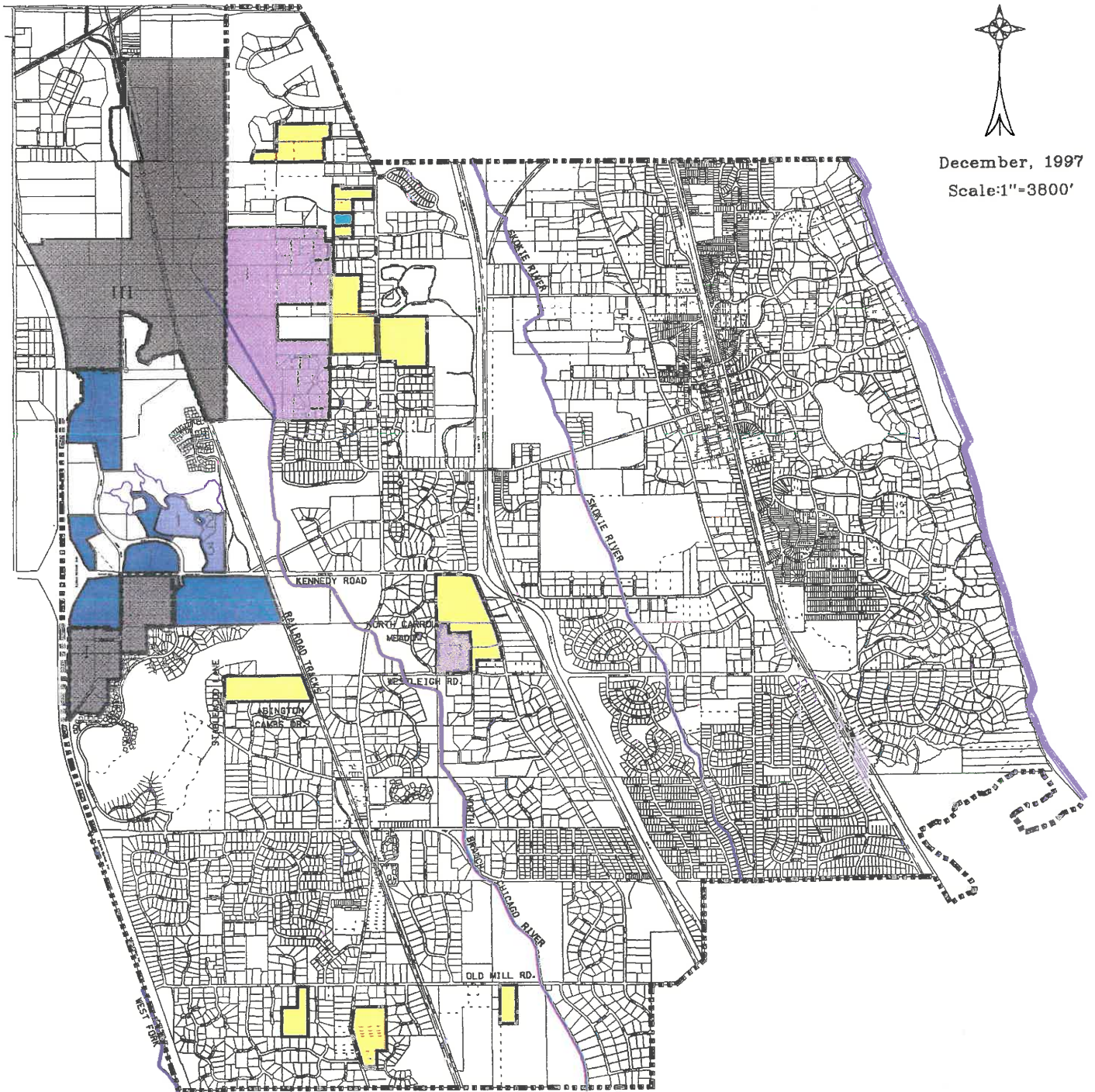
- i) **Parts of the largest developable area in the northwest quadrant of the City**
This is the largest remaining growth area and includes approximately 279 acres of land area. The subject area is adjacent to the forest preserve to the west and southwest. In addition this area has limited accessibility.
- ii) **Parcel south of Old Mill Road**
This approximately 9.5 acre parcel is surrounded by the Lake County Forest Preserve on its east, south and west. In addition there is Open Area (OA) zoning to its north.
- iii) **Parcel located to north of Westleigh Road and east of North Carroll Meadows**
This 22 acre parcel is surrounded by residential use on all four sides. The wetlands around the middle fork of the Chicago River run along the southwest corner of the property.
- iv) **Parcel located north of Abington Cambs Drive, bounded on the east by the railroad tracks and on the west by Stablewood Lane**

This parcel was originally designed as Residential Open Space. This 32 acre parcel was mistakenly shown as part of the Conway Farms development in the 1989 Comprehensive land use map. It was therefore designated with a "Resi-

FIGURE 5.1.1
NEW GROWTH AREAS
WITH PROPOSED LAND USE



December, 1997
 Scale: 1"=3800'



- | | |
|---|-------------------------|
| SPECIAL ESTATE RESIDENTIAL | OFFICE RESEARCH |
| ESTATE RESIDENTIAL (1 DU./1.5 AC) | OPEN SPACE |
| PUBLIC/PRIVATE INSTITUTIONAL | ANNEXATION AREAS I, III |
| OFFICE RESEARCH/PLANNED RESIDENTIAL DEVELOPMENT (Refer to text) | |

dential Open Space" land use with an R5 zoning classification (one dwelling unit per 3 acres). This Residential Open Space designation was an error and not the intended land use.

The land use recommendations for the parcel located north of Kennedy Road are as follows:

i) Parcel located to the north of Kennedy Road and west of the Metra Railroad tracks

This 32 acre property has an underlying R5 zoning, and a land use designation of Estate Residential in the previous Comprehensive Plan. It is surrounded by office uses to the west and south and by a lake along its northern boundary. The Lake Forest Academy and residential uses are located to the east and further north.

The subject area consists of 3 parcels (Parcel 1, Parcel 2 and Parcel 3) and has very limited access. It is currently accessed from Kennedy Road by means of a private drive, in an easement area, which runs along the eastern edge of the Brunswick office development. These existing access conditions and the surrounding land use makes this property unique and also a difficult land use planning proposition. The existing drive cannot be used to access any future development in this area due to the proximity of the Field Court and Academy Road signalized intersections on Kennedy Road. Therefore, future access conditions will play an important role in determining the potential land use of this area.

Parcel 1 is the largest and the western most section of this area. It is surrounded predominantly by office developments. If access can be obtained from Field Court, then Office-Research would be the preferred future use for this parcel. Field Court services the Conway Farms office development, and will be a signalized intersection. Access from a non-residential street and surrounding office uses would make Office-Research the most appropriate use for Parcel 1.

Parcel 2, in conjunction with Parcel 3, forms the eastern 'leg' of this property. These parcels are surrounded predominantly by residential uses of Lake Forest Academy. If access can be obtained from Academy Road, then these two parcels should be consolidated and preferably designated for Planned Residential Development, consisting of a mix of multi-family and single family residential units. This designation would be consistent with the residential character of Academy Road, the residential development in Lake Forest Academy on the north, and the parcel's scenic setting. The exact development densities would be determined when a petition is submitted to develop this area.

Alternatively, if Parcel 1 can obtain access from Academy Road, then it could also be considered for Planned Residential Development. Similarly, if Parcel 2 and Parcel 3 can get access from Field Court, then they could be considered for Office Research development.

The subject area is also designated as a

Parcel 1 should be designated with Office-Research use. Parcels 2 and 3 should be consolidated and developed with Planned Residential use, consisting of a mix of multi-family and single family residential units.

potential community park site by the Lake Forest Comprehensive Park and Facilities Plan¹.

The remaining residential new growth areas should maintain their existing land use densities of 1 dwelling unit per 1.5 acres. These remaining areas are generally smaller and are situated primarily in areas with R4 zoning densities. Preserving this density for the remaining parcels would insure that their development is consistent with the character of the surrounding neighborhoods.

1.2 Planning and Development Principles

Planning and Development Principles act as guidelines to insure that the new growth areas provide a desirable living environment for future residents and that they become an asset to the community as a whole.

1.2.1) Planning Principles

Planning principles guiding the development of new growth areas are outlined below. The precise application of these principles might vary for different areas depending on their existing level of development, natural features, and surrounding uses.

- i) New developments should respect the character of surrounding areas with regard to architectural and natural features, topography, and streetscape.
- ii) New developments should be integrated with existing neighborhoods through street and pedestrian networks, and presence of community facilities and services.
- iii) New developments should be provided with sanitary sewer and storm drainage systems, water supply, and other essential services. In addition, they should have convenient access to school and park facilities that are equipped with adequate passive and active recreational opportunities. Expansion of existing facilities to accommodate new growth areas could be considered.

- iv) New neighborhoods should not be bisected by major traffic arteries; rather the traffic should be limited to the periphery of and be appropriately buffered from the residential developments.
- v) The arrangement of streets within neighborhood should be consistent with the anticipated level of local traffic, and access to the neighborhood should be located so as to minimize the volume of through traffic on local streets.

1.2.2) Zoning and Subdivision Policies

Development policies for new growth areas are based on general neighborhood planning principles and economic considerations. Development in accordance with these policies is intended to insure quality residential environments with efficient use of resources.

- i) Permitted density and land use for individual parcels should generally be consistent with the predominant density of the neighborhood as specified in the Comprehensive Plan.
- ii) Within an individual parcel some variation in lot size should be considered in order to provide transitions to adjacent uses, to protect significant natural features, to provide usable recreational areas or community facilities, and to respond to other conditions unique to the site.
- iii) New areas should connect with the existing road systems in order to maintain continuity of the internal circulation system.
- iv) New residential areas should be accessed from secondary arterial or collector streets. Access from primary streets should be limited.



Annexation should be a means to maintain and/or create sound living environments for residents and property owners of both Lake Forest and the annexed areas.

The remaining areas to be annexed include portions of Area I and Area III.

2. ANNEXATION AREAS

Annexation should be a consequence of specific planning considerations, objectives and policies. It should be a means to maintain and/or create sound living environments for residents and property owners of both Lake Forest and the annexed areas.

2.1 Potential Annexation Areas

The remaining areas to be annexed include portions of Area I and Area III, as identified in the 1989 Comprehensive Plan. The character of these areas is compatible with that of adjacent developments within the City. In addition, while the existing development patterns of annexation areas do not completely conform to the City's land policies, there is potential for them to do so. Please refer to Figure 5.2.1 for the proposed land uses for these areas.

2.1.1) Remaining parts of Area I:

Area I was designated with Estate Residential land use with a density of 1 dwelling per 1.5 acre in the 1978 Comprehensive Plan. Subsequently, in October 1988, the City Council approved the annexation of Area I, including Conway Farms, with a residential density of 1 dwelling unit per acre, and low intensity Office/Research development along Route 60. A section of Area I, south of Kennedy Road remains to be annexed, and is designated with the original Estate Residential land use of 1 dwelling unit per 1.5 acres in the 1989 Comprehensive Plan.

The following land uses are recommended for the remaining portion of Area I:

- i) Parcel located to the east of the I-94 Tollroad and generally near Saunders Road:
This approximately 69 acre parcel should be developed with Estate Residential land use with a density of 1 dwelling unit per 1.5 acres.

ii) Parcel immediately south of Route 60:

This approximately 40 acre parcel is surrounded by office research uses to the north, west and east. Given that the surrounding use is predominantly office research, the subject property should also be developed for Office-Research use.

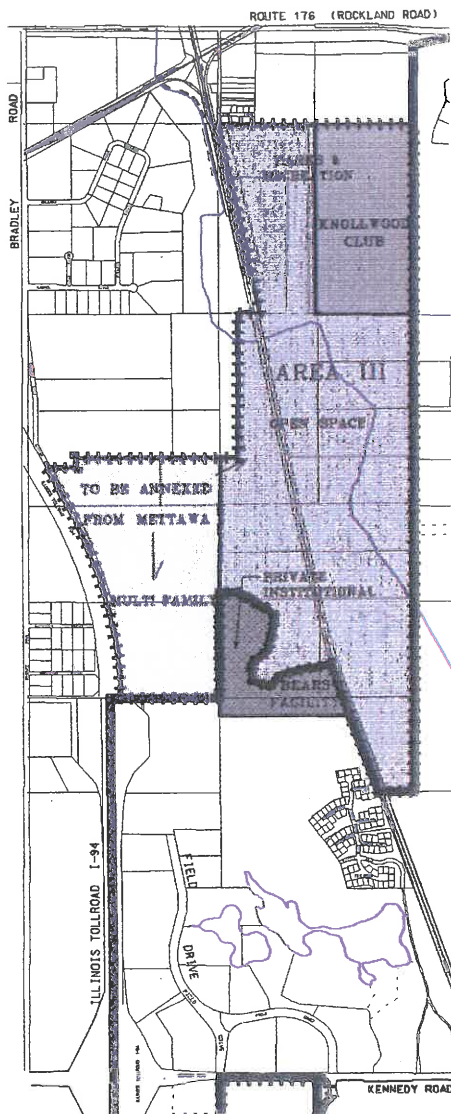
However, if the adjoining parcel on the east is developed with multi-family residential use, then a Planned Residential development, consisting of a mix of multifamily and single family residential units, should be considered as an alternative use for the subject parcel. A multifamily / single family residential development for the subject parcel would be consistent with the possible use of the parcel to the east for multi-family development, and the existing Conway Farms single family residential development to the south. This use would also be advantageous given the significant impact of office/research facilities on the traffic. In addition, the suggested development would serve as an ideal transition from the office-research uses on the north, to the residential uses on Conway Farms to the south. This transition could be achieved by varying either the residential densities and/or the types. The exact densities would be determined when a petition is submitted to develop this area.

The parcel should be designated as Office-Research use. However, if the adjoining parcel on the east is developed with residential use, then a Planned Residential development, consisting of a mix of multi-family and single family residential units may be an alternative use for the parcel.

2.1.2) Area III

Area III consists of the parcels lying east of the I-94 tollway and to the northwest of the current City limits. Area III is not separated from Lake Forest by any natural or artificial boundary, and thus its development will have a direct impact on the City. In addition, the portion of Area III located east of the Milwaukee Railroad tracks should be annexed as soon as possible so as to insure that its future land use will remain consistent with the surrounding use; specifically, the rural character of the adjacent forest preserve and Knollwood Club.

Area III was reviewed by the Plan Commission in 1988.



The Plan Commission recommended that the section of Area III lying east of Milwaukee Road Railroad tracks, should be developed with Estate Residential and Open Space land uses. However, in the current context, Estate Residential land use would not be appropriate for this area given the adjoining forest preserve and Knollwood Club uses. This area should be developed primarily as Open Space and Parks and Recreation use.

In addition, the 1988 Plan Commission recommendations stated that the area west of the railroad tracks should be developed consistent with the prior development of properties in the annexed areas or adjoining areas in The City of Lake Forest. The staff would recommend a mix of Private-Institutional (for the Chicago Bears property), Open Space (for areas adjoining the forest preserve), and Multifamily Residential (for the area to be annexed from Mettawa) for the stated area.

The following land uses are recommended for Area III:

- i) Parks and Recreation land use for the area currently occupied by Knollwood Club. The portion of Knollwood Club included within The City of Lake Forest limits is designated as parks and recreation. Therefore the remaining sections of the Knollwood Club suggested for annexation should be designated with the same land use.
- ii) Open Space land use for the remaining area east of the railroad tracks, and for the area north of the Chicago Bears facility and west of the railroad tracks. The majority of the subject area is owned by the Lake County Forest Preserve. Therefore, this area should be maintained as forest preserve and hence designated as open space.
- iii) Private Institutional land use for the area to be developed with the Chicago Bears facility. (Annexed by the City in February 1995.)
- iv) Multifamily Residential and Open Space land use for

the parcel currently within the City of Mettawa limits and zoned as Office Research. This area if developed with Office Research uses, would have a significant adverse impact on The City of Lake Forest, particularly in terms of traffic. Annexing this parcel would accomplish two important things:

Annexation would allow the City to connect Field Drive through Conway Farms, north to Bradley Road. This would provide an alternative means of ingress and egress for traffic to and from Conway Farms. This would substantially alleviate existing traffic problems on Route 60. However, Conway Farms has stated that it would not allow the extension of Fields Drive if the subject area was developed with Office Research use. Based on these considerations, it is important to discourage office-research development of the subject area.

Annexation would allow the City greater control over the development of the subject parcel. The City could then rezone this area for a use other than Office Research.

The City of Lake Forest has discussed the possible annexation of this area from Mettawa. As part of the recently executed inter-governmental agreement, Mettawa has agreed to de-annex the property, at the joint request of The City of Lake Forest and the property owners of the subject area. Discussions with the existing property owners have led the City to believe that the property owners will agree to be annexed to Lake Forest, only on the condition that they be granted multifamily residential use for their properties.

The subject parcel should therefore be shown for development as multifamily residential use. The subject area might include significant wetlands and other natural features. Therefore, the development of the parcel should be in an ecologically sensitive manner, and should preserve existing woodlands, wetlands and other significant natural features. In addition,

Park and Recreation use for area currently occupied by Knollwood Club.

Open Space use for remaining area east and west of railroad tracks.

Private Institutional use for Chicago Bears facility

Area to be annexed from Mettawa should be developed with a mix of multifamily residential and open space use.

the densities of development should be determined based on the net area available after deducting for wetlands and other natural features.

The section of the property adjacent to the railroad tracks, which is probably owned by the Lake County Forest Preserve, should be designated as open space. Most of this area includes woodlands, and should be maintained as such given the surrounding forest preserve property.

2.2 Policies and Planning Considerations for Annexation

The Illinois Tollroad I-94 should be maintained as the City's western limits. Therefore, the City should not annex any property west of the tollroad.

2.2.1) Policies for Annexation

The following policies should be considered for future annexations:

- i) Annexation areas should be or have the potential to be compatible with the character of Lake Forest.
- ii) Annexation should not result in undue hardship, economic or otherwise, for the City, specifically regarding provision of sewage, water, street repair and maintenance, police and fire protection.
- iii) Annexed properties should be served by identical government taxing bodies and Commissions like schools, fire districts, etc., as far as possible (ex-

cept for properties to be developed or zoned residential, which shall have coterminous school district boundaries with the corporate limits of The City of Lake Forest).

2.2.2) Planning Considerations for Annexation

Planning considerations for annexation include both technical issues and broader socio-economic concerns. Therefore, some considerations might be more significant than others in arriving at annexation decisions. Annexation areas should be evaluated based on the following planning considerations:

- i) Location relative to existing corporate limits and other municipalities;
- ii) Location within the same jurisdictional districts;
- iii) Land use relative to adjacent developments and the City as a whole;
- iv) Physical characteristics and development potential;
- v) Development trends, influenced by both external and local factors, and their affect on future land use;
- vi) City's ability to control future development of annexation areas;
- vii) Location of utilities to determine infrastructure requirements;
- viii) Ability to provide adequate services and facilities;
- ix) Location of major thoroughfares to determine access requirements;
- x) Socio-economic characteristics and pattern of ownership;
- xi) Fiscal impact of annexation in terms of cost-benefit analysis; and
- xii) Contribution to City's goals and objectives.

FIGURE 5.2.1 ANNEXATION AREAS WITH PROPOSED LANDUSES

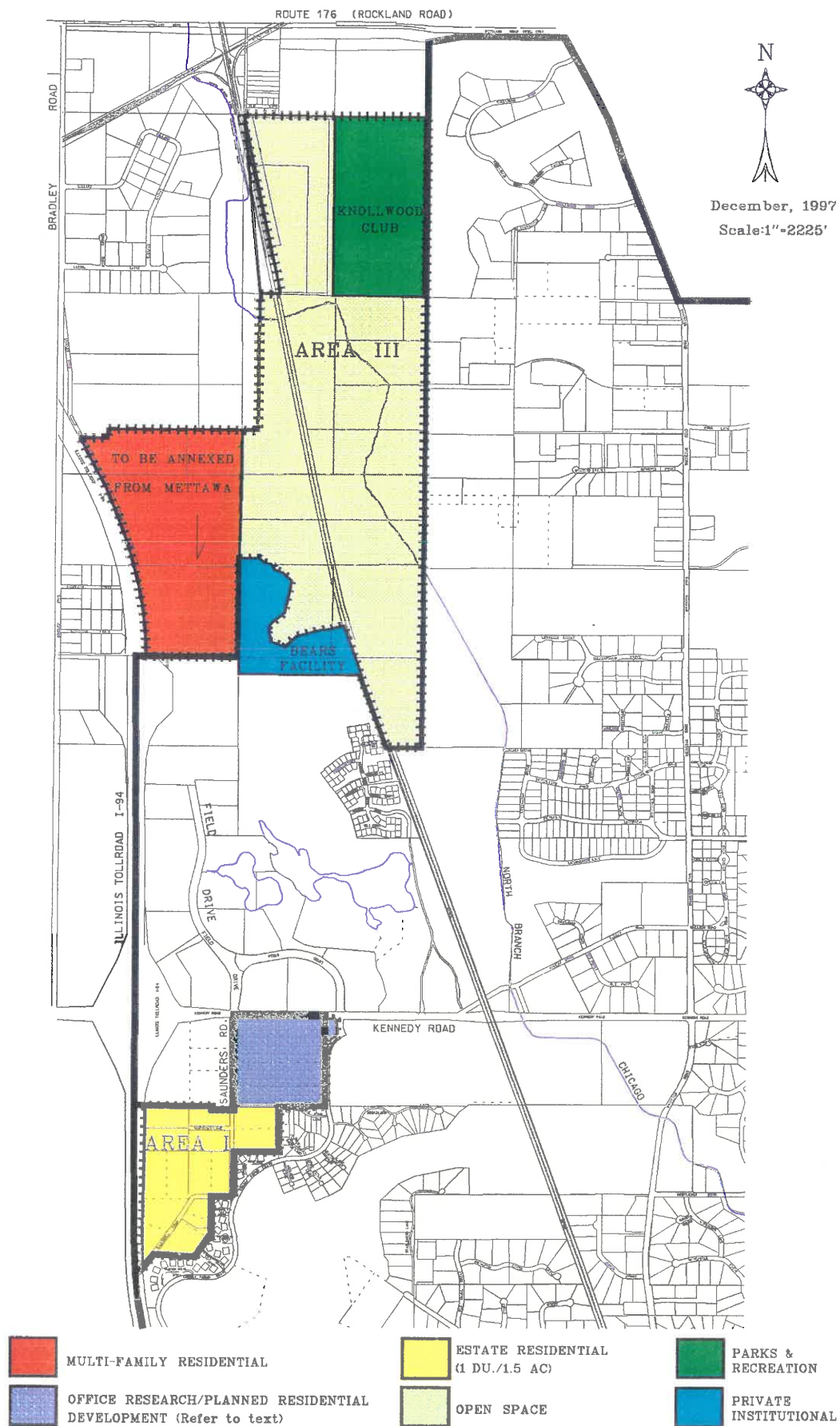
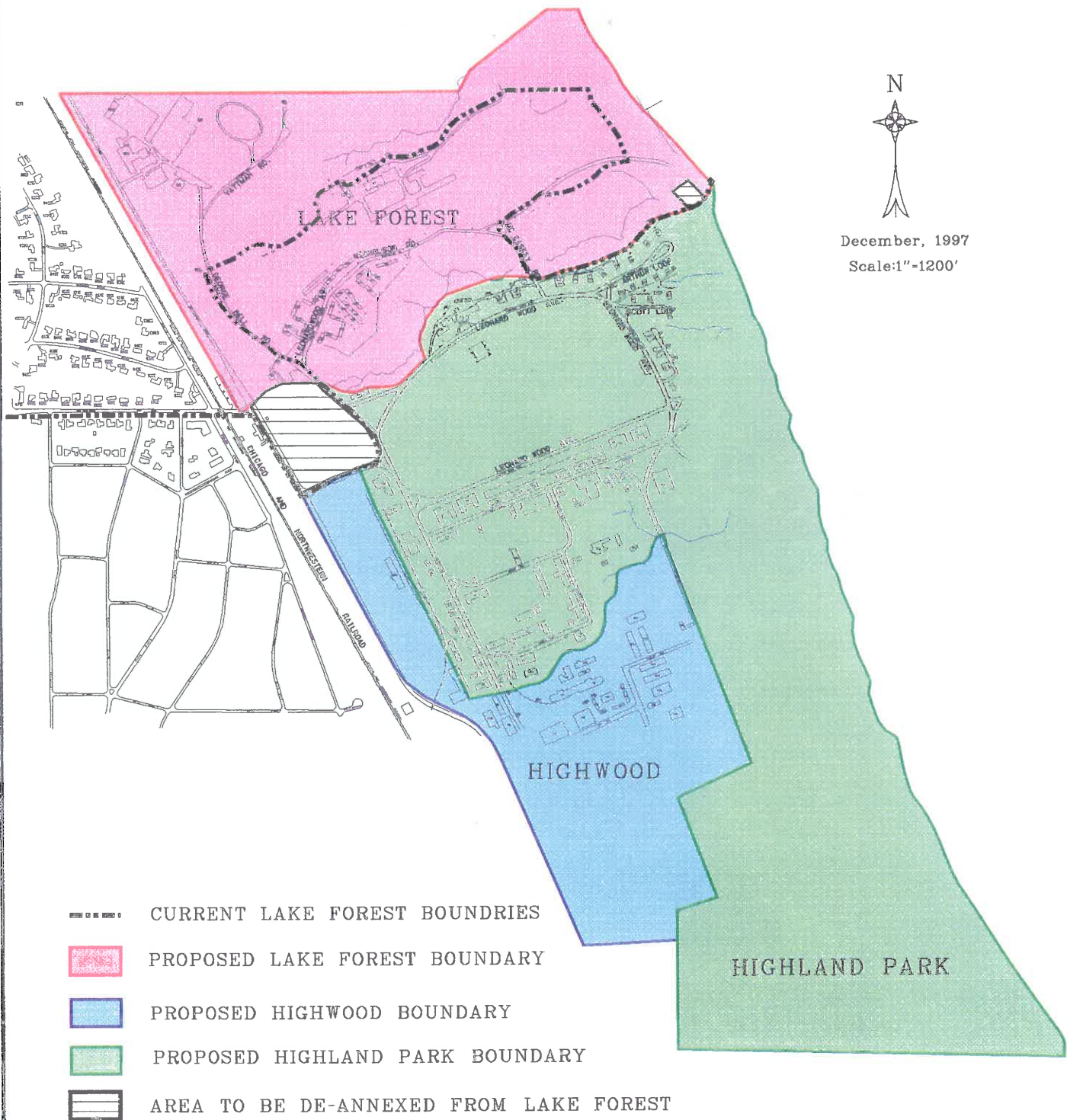


FIGURE 5.3 **FORT SHERIDAN BOUNDARY PROPOSAL**



NOTE: Boundaries as shown are for illustration purposes only and are not exact. For an accurate boundary map, please contact the City Of Lake Forest.

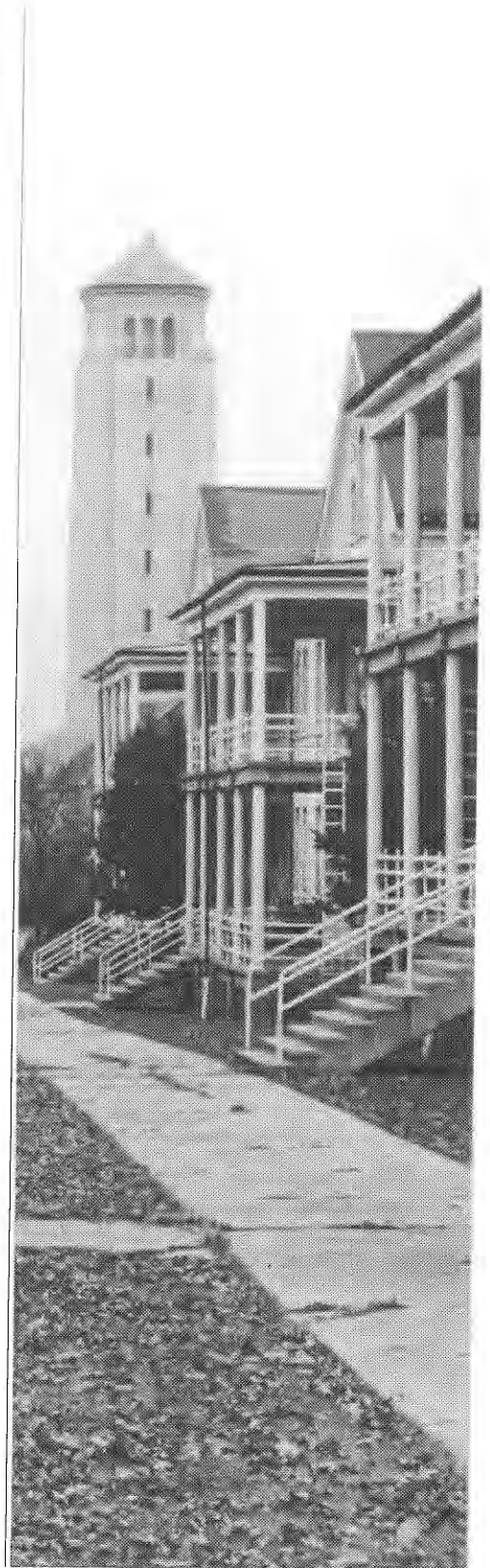
3. POLICIES FOR FORT SHERIDAN DEVELOPMENT

Fort Sheridan is an approximately 712 acre military base that was established on February 27, 1888. The northern portion of Fort Sheridan, which abuts The City of Lake Forest, consists predominantly of a golf course, a cemetery, a Army Reserve Center and some residential structures. The central portion of the base largely consists of the Fort Sheridan Historic District. The southern portion contains a larger Military Reserve area, housing and miscellaneous buildings.

Fort Sheridan was targeted for closure under the Base Alignment and Closure Act in 1988. Since that time, the communities of Highland Park, Highland Park, Highland Park, Lake Forest and Lake County have been planning for the redevelopment and reuse of surplus Fort Sheridan property.

The Comprehensive Plan supports the attached Fort Sheridan boundary proposal (refer to Figure 5.3). According to this proposal The City of Lake Forest would annex the northern section of Fort Sheridan, consisting of the golf course, cemetery and the Army Reserve Center. This would give the City control over more open space that is adjacent its current southeast limits. A small section of Fort Sheridan, located adjacent to the main entrance of the base, would be de-annexed. This would allow the relocation of the main entrance of Fort Sheridan, which historically represents the southern City limit, to align with Old Elm Road. Furthermore, the water plant would be deannexed and incorporated by Highland Park. The remaining areas of Fort Sheridan would be annexed by the communities of Highland Park and Highland Park.

The Comprehensive Plan recommends that the northern section, proposed for annexation by the City, be maintained for park and recreation use. Specifically, the golf course and the cemetery should be retained as part of the City. The Military Reserve Center represents approximately 14 acres of property, and could be used by the City for relocating its Municipal Services complex. All bluffs, ravines and vegetation should be preserved, and public access should be limited to existing roadways where possible.



¹ Land Design Collaborative Inc.; Comprehensive Park and Facilities Plan, October 1995.

The Environmental Plan acts as a guide for improving the overall environment of the City of Lake Forest. Its primary focus is to preserve and enhance the existing natural features; to maintain and encourage landscaping and historic preservation; and to diminish noise, visual, air and water pollution.

1. NATURAL FEATURES

The eastern section of the City has several ravine systems which run in a west to east direction to culminate at the Lake Michigan shoreline. The ravines are part of the inherent character of the City, and should be maintained and preserved as such. In keeping with this objective, the City published a brochure in 1995 entitled "Living in a Ravine and Lakefront Community"¹. This publication serves as a homeowner's guide to managing and protecting the ecology and other natural features of ravine environs. It included recommendations on plantings, information on preventing erosion and other damage to ravines, and guidelines for new construction on ravines as specified by the City's Steep Slope Ordinance. Similar efforts, which encourage the home owners to maintain and protect their ravine environments, should be continued.

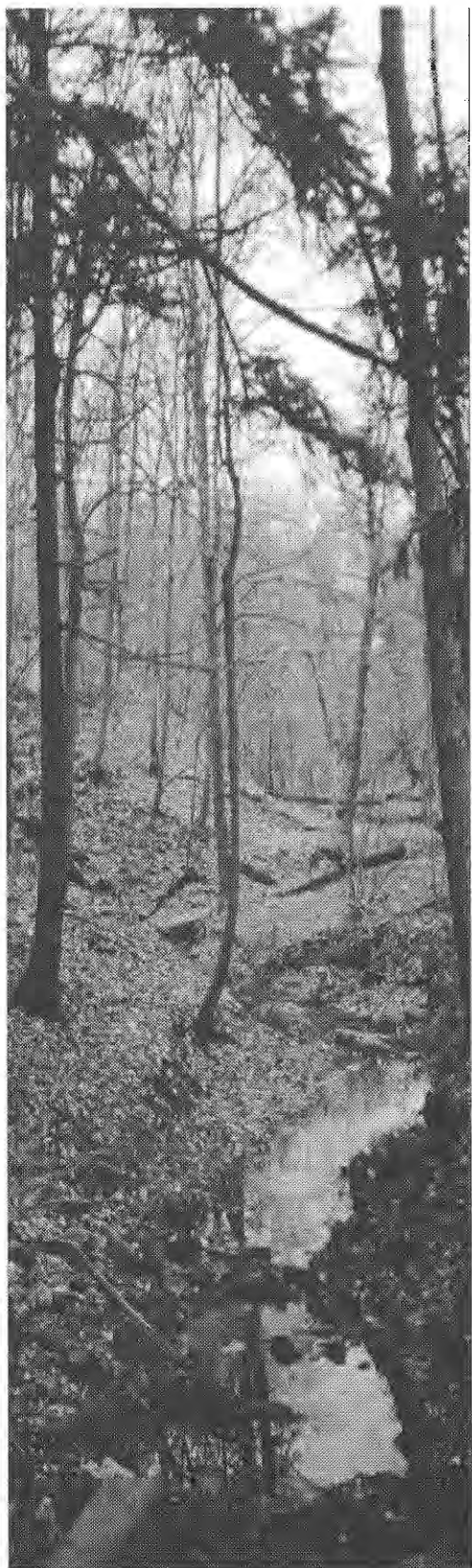
In addition, the City has successfully completed a lake shore/bluff protection and beach restoration program. During May 1986-87, the City designed and created four acres of new beach with associated amenities such as a boat launch basin, parking lots, and picnic areas. The shore protection for this beach project consists primarily of a series of six off-shore breakwaters. A Beach Monitoring Program was undertaken by the City, during 1991 to 1995, to monitor the impacts of the project, and to ensure that there was no measurable erosion of the shoreline or lake bottom south of the project.

The riverine flood plains form natural corridors extending from the northwest to southeast of Lake Forest. They are located along the East Skokie Drainage Ditch (Skokie River), the West Skokie Drainage Ditch (Middle Fork), and the West Fork of the North Branch of the Chicago River. The lines of highest elevation in the City are generally located along Green Bay Road, Ridge Road and Estate Lane. They define the four watershed areas within the City, spe-

The primary focus of the Environmental Plan is to preserve and enhance the existing natural features; to maintain and encourage landscaping and historic preservation; and to diminish noise, visual, air and water pollution.

The ravines are part of the inherent character of the City, and should be maintained and preserved as such.

These areas are an essential feature of the City's character, and should be maintained and preserved to the extent possible. Any future development in these areas should ensure preservation or adequate mitigation of the wetlands

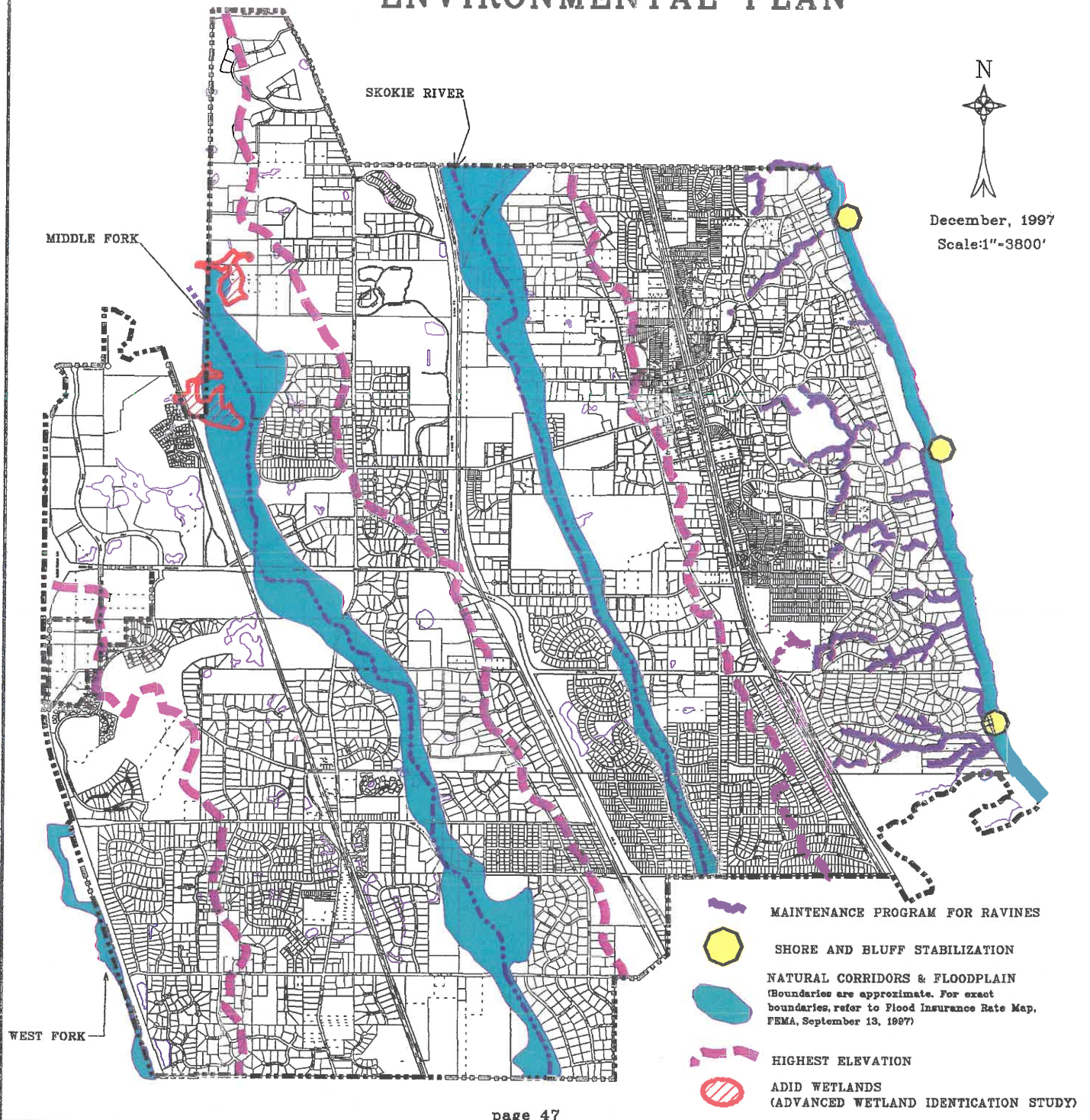


cifically the area east of Green Bay Road which drains into Lake Michigan, the area between Green Bay Road and Ridge Road which drains into the Skokie River, the area between Ridge Road and Estate Lane which drains into the Middle Fork, and finally the area west of Estate Lane which drains into the West Fork of the Chicago River.

The wetlands are largely open and undeveloped. These areas are an essential feature of the City's character, and should be maintained and preserved to the extent possible. Any future development in these areas should ensure preservation or adequate mitigation of the wetlands. In addition, the City will complete and protect the natural corridor running along the Middle Fork of the Chicago River (Middle Fork Savannah). The City will continue to coordinate with other governmental agencies and surrounding communities to preserve and protect wetlands within and outside of Lake Forest.

Fig 6.1 illustrates the natural features within the City of Lake Forest.

FIGURE 6.1 ENVIRONMENTAL PLAN



STORMWATER MANAGEMENT & WATER USAGE

Lake Michigan and the Great Lakes are the world's largest source of fresh water with 20% of the earth's available supply. In addition to providing abundant recreational opportunities for residents, Lake Michigan is the source of Lake Forest's potable or drinking water.

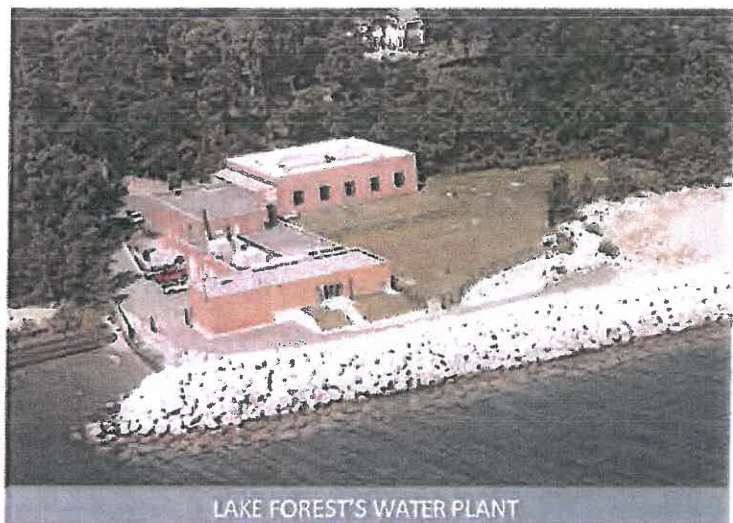
The City cleans and purifies its potable water at the Lake Forest water treatment plant, originally constructed by private residents in 1890 as the Lake Forest Water Company, and later purchased by the City in 1921. In 2004, the City converted from a sand filtration system to an ultrafiltration or membrane system, the first of its kind in Illinois. Two water intake pipes (one $\frac{1}{4}$ mile and the second $\frac{1}{2}$ mile into the lake) supply the treatment plant, which can process 12 – 14 million gallons of water per day.

In recent years, the water plant has nearly exceeded its capacity during the hot summer months when irrigation and lawn watering are at its peak. The City subsequently adopted watering restrictions from May 15 through September 15 to defer the need for costly upgrades to the plant and water system.

Lake Forest's wastewater—that is water flushed down the toilets, sinks and drains of City homes and businesses—flows through the City's sanitary sewer system to a large collector pipe under Highway 41 and to the North Shore Sanitary District plant on Clavey Road in Highland Park. At this plant, a series of processes separate the solid and liquid waste while cleaning and sanitizing the water to meet all applicable state and federal water standards. Ultimately, the treated wastewater empties into the Skokie River and lagoons just south of the Chicago Botanic Gardens, flowing to the Chicago River, connecting to the Illinois River, to the Mississippi River, and eventually to the Gulf of Mexico.

Lake Forest's stormwater system is completely separate from its wastewater sewer system, and two unique features distinguish stormwater flow in Lake Forest.

First, the sub-continental divide between the Great Lakes and Mississippi River watersheds bisects Lake Forest with Green Bay Road as the natural divider. This means that rainfall landing on the east side of Green Bay Road will, with assistance from the City's storm sewer system, naturally make its way to Lake Michigan. Rainfall on the west side of Green Bay Road will naturally flow through the storm sewer system to the Skokie River or the Middlefork of the North Branch of the Chicago River.





The thirteen miles of ravines in eastern Lake Forest, which serve as natural channels into Lake Michigan, are the second distinguishing feature of the City's stormwater flow. Most of the City's stormwater runoff east of Green Bay Road flows through the stormwater sewer system into the ravines before emptying into Lake Michigan.

Many of Lake Forest's buildings, streets, driveways, and parking lots are impermeable and stormwater washes over these surfaces collecting sediment, oil, chemical pollutants, and other dirt and debris. East of Green Bay Road, this polluted runoff flows directly through the ravines and directly into Lake Michigan, the source of Lake Forest's drinking water.

Increasing volumes of rain from severe storms, exacerbated by residents connecting their downspouts and draining their swimming pools directly into the storm sewer system, increase ravine and land erosion, degrade wildlife habitat, and degrade water quality.

Green infrastructure—such as trees, native plants, bioswales, rain gardens, rain barrels, permeable surfaces and green roofs—absorbs rainwater, reduces stormwater runoff, protects ravine stability and habitat health, and improves Lake Michigan water quality.

The following goals and actions reflect Lake Forest's priorities for conserving and protecting the unique water resources of our community. While Lake Michigan and the Great Lakes may currently offer an abundant supply of fresh water, we recognize that they are not infinite resources and, as a lakeshore community, must treat them responsibly. The goals and actions also reflect the importance of minimizing the downstream effects of what enters Lake Forest's wastewater and stormwater systems.

Goals

- Reduce the volume of stormwater entering the ravines, Skokie River, and Middlefork of the Chicago River North Branch using stormwater infrastructure best management practices
- Improve the quality of water entering Lake Michigan through the ravines
- Increase water conservation
- Educate residents on the importance of Lake Forest-specific water issues

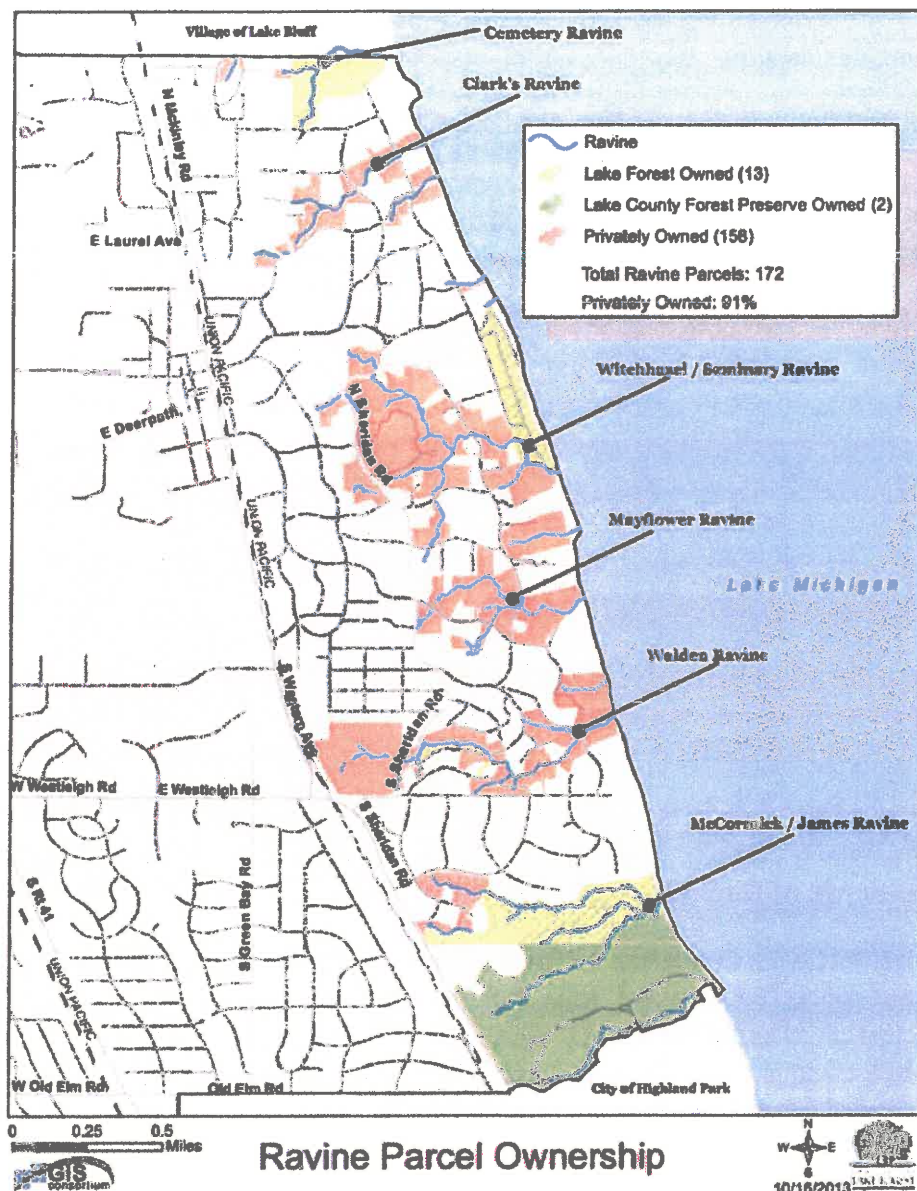
Measurements of Success

- Decreased water usage per household and business per year
- Increased number of households with downspout disconnection and/or rain barrels
- Increased square footage/number of bioswales and rain gardens
- Increased square footage of permeable surfaces
- Increased public awareness of water issues

ECOSYSTEM VITALITY & RAVINE CONSERVATION

Lake Forest has a natural beauty with abundant trees, wetlands, prairies, savannas, ravines, gardens, and parks. The City is home to 3.5 miles of lakefront, over 11 miles of bike trails, 446 acres of public parks, over 800 acres of protected open space, and 13 miles of nature preserve trails.

Lake Forest's thirteen miles of ravines, the majority of which are on private property, are a unique and beautiful natural landform that helps to define our City's character. The ravines function as natural drainage systems for stormwater runoff flowing towards Lake Michigan, habitat for many rare plants and animals, and as physical support for many homes.



Unfortunately, accelerated erosion is occurring along ravine slopes as a result of excessive stormwater runoff, residential and commercial development, and invasive species compromising the resilience of ravines to maintain their structure. The erosion from stormwater and private drainage results in slumping of ravine slopes, poor water quality, and destroyed natural habitat.

Residents can help conserve and protect our ravines by reducing the volume of water entering the City's stormwater sewer system, limiting the watering of lawns, using organic fertilizers, planting native plants, minimizing land paving and irrigation, addressing direct drainage of pools and other stormwater, and by properly disposing of yard waste.

Lake Forest also faces a significant threat from the devastating Emerald Ash Borer, in addition to increasing threats to other tree species. Our community expects to lose over 100,000 ash trees in the next 5 – 10 years. Reforesting the community with diverse, native species for the future has become a critical priority for the City.

Finally, in recognition of the environmental and health benefits of locally grown food, the City has expanded its Open Air Market and increased the development of school and community gardens.

The following goals and actions reflect the City's commitment to ecosystem vitality and preservation of our unique natural spaces.

Goals

- Preserve, protect, and when possible, expand open spaces and parks, particularly ravines
- Use sustainable land management practices throughout the community
- Increase native plantings
- Preserve existing trees and increase native tree canopy coverage, particularly oak varieties.



Measurements of Success

- Enacted Ravine Conservation/Steep Slope Ordinance, Pesticide Protocol, Landscaper Certification Program, and Noise Pollution Ordinance
- Increased linear feet of restored ravines
- Increased square footage of lawns converted to native plantings
- Increased number of school and community gardens

WASTE MANAGEMENT

Waste management includes the collection, transportation and disposal of garbage and other unwanted materials. Unless diverted through recycling, reuse, composting or other means, Lake Forest's waste ends up in a landfill where it is buried and left to decompose, a process that can take hundreds of years. Waste items made from plastic and polystyrene can take millions of years to decompose.



According to a 2014 Illinois Environmental Protection Agency report, the six active landfills serving the Chicago metropolitan region have only 13 years of capacity remaining at current disposal rates.² Therefore, the continuation and expansion of recycling, composting, and hazardous and electronic waste management programs are critical to reduce the strain on existing facilities.

Lake County officials have recognized the need to significantly reduce the volume of material sent to landfills and established a goal of increasing the countywide recycling rate to 60% by 2020.

A recent local survey reported that Lake Forest residents create 702 pounds of household waste per person annually, the second highest of seven North Shore communities analyzed.³

Lake Forest currently operates a comprehensive waste management program. City staff collects refuse from residents twice weekly and disposes it at the Advanced Disposal Services Landfill in Zion. Yard waste is also collected twice weekly, transported to Lake Forest's Compost and Recycling Center on Route 60 ("Recycling Center"), and composted on site. Recycled items are collected once per week, trucked to the Recycling Center and reloaded into transfer trailers. The trailers are transported to the Resource Management facility in Chicago Ridge, where the material is separated and sold to other businesses worldwide.

The Recycling Center is open on weekends for residents to drop off refuse, yard waste, recyclables, metal, electronics, clothing, shoes and textiles. Residents can also pick up mulch, compost and wood chips at the center for free.

Lake Forest residents can drop off hazardous household waste—including household chemicals, oil-based paint, medications, and electronics—at the Solid Waste Agency of Lake County (SWALCO) permanent facility in Gurnee. SWALCO also holds a collection event at Lake Forest Municipal Services Building every September.

² <http://www.epa.illinois.gov/Assets/iepa/waste-management/landfills/landfill-capacity/landfill-capacity-report-2015.pdf>, p. 11

³ <http://jwcdaily.com/2015/05/07/garbage-in-garbage-out>

The Lake Forest Police Department collects unwanted medications and prescription drugs at the Lake Forest Police Station in secure drop boxes seven days a week.

The Public Works Department provides residents with the opportunity to purchase compost containers (also termed earth machines) from the City at a below market rate. Sanitation employees deliver the compost containers to residents.

In addition to backyard composting, Lake Forest residents interested in composting food waste can have it picked up weekly or biweekly by Collective Resource, Inc., a food scrap pickup service based in Evanston. This company provides residents with a bucket to fill with food waste and leave at the door, reducing household garbage volume by at least 30%. Collected waste is delivered to a commercial composting site to become useful compost. Unlike backyard composting, Collective Resource has no dairy, meat, animal waste, or food-soiled paper restrictions.

The following goals and actions reflect Lake Forest's commitment to expand its existing waste management programs and to further reduce the volume of material sent to the landfill.

Goals

- Reduce the amount of landfilled waste
- Improve recycling rates and increase awareness of recycling and responsible disposal alternatives
- Increase composting
- Increase material reuse

Measurements of Success

- Recycling rate of 60% by 2020, consistent with the Lake County goal
- Increased residential and commercial composting
- Decreased use of plastic bags and polystyrene

ENERGY EFFICIENCY & RENEWABLE ENERGY

Energy is something taken for granted in our daily lives—we switch on the lights, turn on the stove, or watch television without even thinking about where the energy comes from to run them. Yet the negative air, water and climate impacts from conventional energy production are significant. Recent technology advances now provide opportunities to reduce the harmful impacts of conventional energy by decreasing our energy usage and increasing the amount of renewable energy we consume.

The primary forms of energy used in Lake Forest's homes and businesses are electricity and natural gas. Electricity powers lighting, air conditioning, appliances, electronics, computers, and phones. Lake Forest's electricity is currently supplied and delivered by Commonwealth Edison ("ComEd") and usage is measured in kilowatt hours (kWh).

Natural gas is the primary fuel for furnaces or space heating in Lake Forest and is also commonly used for hot water heaters, clothes dryers, and cooking in the residential sector. Our natural gas is supplied and delivered by North Shore Gas, and usage is measured in therms.

A 2010 study by CNT Energy found that Lake Forest households use significantly more energy than the typical Lake County home, and our residents have some of the highest energy bills in the region. The average electricity usage per household in Lake Forest is 87% higher than a typical home in Lake County, and the average natural gas usage per household in Lake Forest is 120% higher than the County average. Factors that affect electricity usage include square footage; efficiency of air conditioning, lighting, appliances and electronics; and occupant behavior. Factors that affect natural gas usage include building size and age, building envelope efficiency, efficiency of the furnace and water heater, and occupant behavior.

Average Annual Energy Consumption		
	Lake Forest	Lake County
Average electricity usage per household (kWh)	21,571	11,524
Average natural gas usage per household (therms)	2,708	1,229

Source: CNT Energy 2010 Municipal Energy Profile Project

Lake Forest residents are aware of an energy and cost savings potential, as 82% of the 2015 Sustainability Survey respondents agreed or strongly agreed with the statement, "I have an opportunity to reduce my household's energy consumption."

ComEd began installing advanced digital "smart meters" in Lake Forest in 2016, which will create additional opportunities to obtain real-time energy usage information and more easily reduce household electricity consumption and peak demand.

ComEd's 2015 Environmental Disclosure Statement reveals that the fuel sources for electricity supplied to its customers in 2015 were 37% coal, 36% nuclear, 23% natural gas, and 3% wind and hydroelectric.⁴

Declining costs for solar panels and installation, together with creative financing options from developers, make solar photovoltaic (PV) an increasingly viable alternative for homes, businesses and institutions in Illinois who wish to reduce their consumption of electricity from conventional sources and increase their renewable supply.



The following goals and actions reflect Lake Forest's commitment to expanded energy efficiency and renewable energy.

Goals

- Reduce energy consumption in homes and businesses
- Expand the use of renewable energy throughout the community

Measurements of Success

- Increased number of homes and businesses with renewable energy installations
- Increased participation in ComEd's energy efficiency and demand response programs
- Installed community (shared) solar project and/or model renewable energy system at a municipal facility
- Enacted Sustainable Development Incentive Program

⁴ https://www.comed.com/documents/about-us/environmental-commitment/environmental_disclosure_12mons_ending_20151231.pdf

TRANSPORTATION & AIR QUALITY

Transportation is the largest source of air pollution in the U.S., leading to significant risks for human health and the environment. Major pollutants from the burning of gasoline and diesel fuel in motor vehicles and other equipment include:

- Particulate matter (PM). These particles of soot and metals give smog its murky color. Fine particles—less than one-tenth the diameter of a human hair—pose the most serious threat to human health, as they can penetrate deep into lungs.
- Nitrogen oxides (NO_x). These pollutants cause lung irritation and weaken the body's defenses against respiratory infections such as pneumonia and influenza.
- Hydrocarbons (HC). These pollutants react with nitrogen oxides in the presence of sunlight to form ground level ozone, a primary ingredient in smog.
- Carbon monoxide (CO). This odorless and poisonous gas is formed by the combustion of gasoline and diesel and is emitted primarily from cars and trucks.
- Sulfur dioxide (SO₂). Power plants and motor vehicles create this pollutant by burning sulfur-containing fuels, especially diesel fuel. SO₂ can react in the atmosphere to form fine particles and poses the largest health risk to young children and asthmatics.
- Greenhouse gases. Motor vehicles also emit carbon dioxide, a potent greenhouse gas.

The 2015 Urban Mobility Scorecard ranked Chicago as having the third worst automotive travel delays among very large urban areas (behind only New York and Los Angeles), with 303 million extra hours of travel time each year due to congestion.⁵ This translates to 61 hours of travel delay per commuter each year and results in 147 million gallons of excess gasoline consumed.

Lake Forest experiences its own congestion, particularly on weekday mornings and afternoons during the school year. The drop off and pickup of Deerpath Middle School students leads to significant traffic bottlenecks on Deerpath Road twice each weekday. Similarly, traffic flow on McKinley Road is



impaired each school day due to the arrival and departure of the high school students.

⁵ <http://d2d15nnlptf0r.cloudfront.net/tti.tamu.edu/documents/mobility-scorecard-2015-wapps.pdf>

Local air pollution also comes from idling vehicles and gas-powered landscaping equipment. Idling occurs at schools, train stations, parking lots and roadways throughout the City. With over 300 professional landscaping companies licensed to work in Lake Forest, emissions from lawn care and snowplowing are significant.

The following goals and actions reflect Lake Forest's commitment to reduce negative air quality impacts from transportation.

Goals

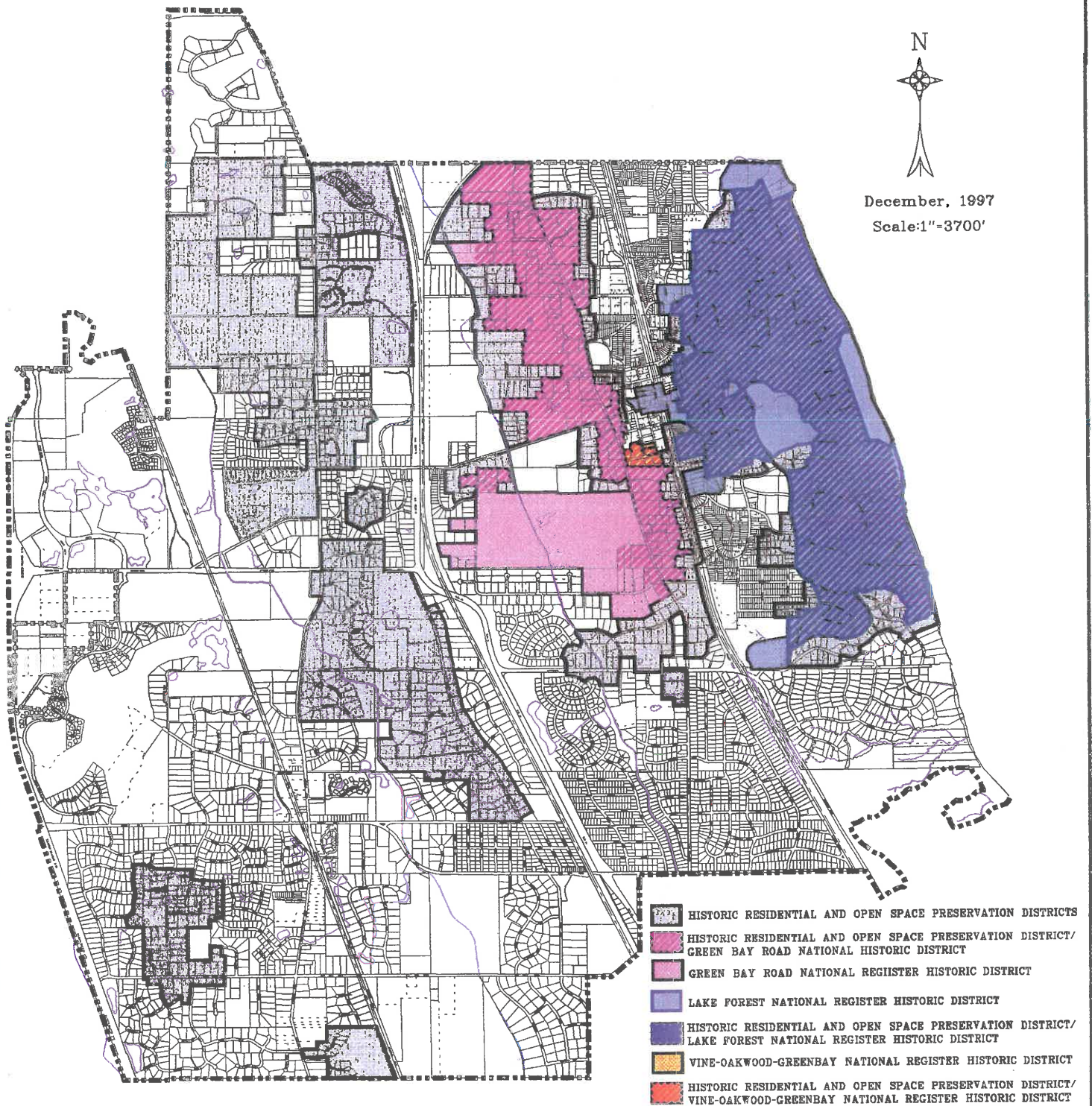
- Reduce traffic congestion
- Reduce idling
- Reduce air pollution from the City's fleet and equipment
- Increase bicycling and utilization of other non-automotive forms of transportation



Measurements of Success

- Enacted Anti-Idling policy
- Increased percentage of City fleet that is hybrid or electric vehicles
- Reduced traffic counts on Deerpath and McKinley during school days
- Achievement of the Bicycle Master Plan goals

FIGURE 6.2 HISTORIC DISTRICTS



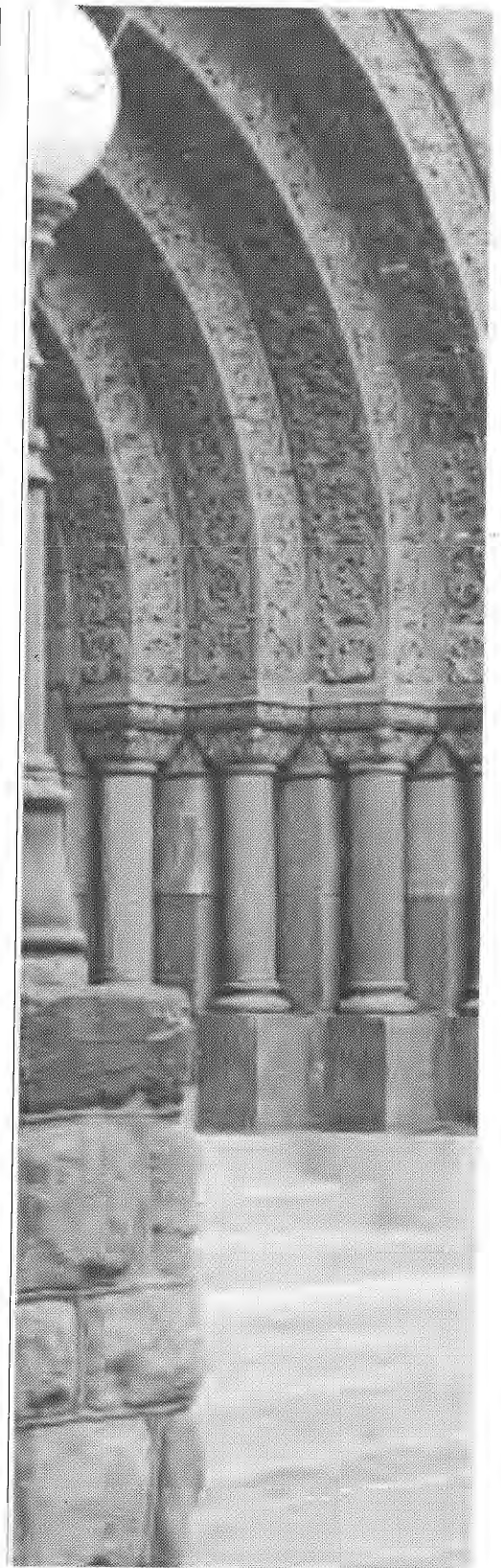
2. ARCHITECTURAL AND HISTORIC PRESERVATION

In 1981, the City Council approved an ordinance which delineated specific areas within the City as Historic Residential And Open Space Preservation Areas. Figure 6.3. depicts the location of these areas. Generally, the property and structures within these preservation areas have special historic, architectural and cultural significance, and their preservation is important for maintaining the unique character of the City. The homes and estates embody high standards of architectural design and craftsmanship, and represent a significant period of residential development in American history.

The Historic Residential And Open Space Preservation Areas include, but are not limited to, three other historic districts specifically, the Green Bay Road National Register Historic District, the Vine-Oakwood-Green Bay Road National Register Historic District, and the Lake Forest National Register Historic District. Specific references to architectural features and properties found in these Historic Districts are included in the following studies:

- i) National Registry information for the Green Bay Road Historic District, September 1995.
- ii) National Registry information for the Vine-Oakwood-Green Bay Road Historic District, March 1980.
- iii) National Registry information for the Lake Forest Historic District, 1978.
- iv) State of Illinois Advisory Council report to National Register of Historic Places, September 1976.
- v) Illinois Historic Landmarks Survey Interim Report, April 1975.
- vi) Illinois Historic Structures Survey Interim Report, October 1974.

The City compiled an inventory of approximately 1200 historical houses within Lake Forest, during 1994-1997. This inventory includes most of the houses built before 1944 in The City of Lake Forest
March 1998



Due to the significance of the historic preservation areas, innovative design and site planning solutions should be used in the review and approval of developments in these areas, to achieve the objectives of this section. Special guidelines should be developed to direct the property owners and the City in the use and maintenance of the Historic Districts.

Forest³. The documentation includes important information, to the extent possible, for each of the houses regarding the architecture, building materials, the date of construction, the architect, the original owners, and a photograph. This inventory shall act as an important tool for encouraging and guiding preservation of the historic districts, and should be upgraded on a continuous basis.

Due to the significance of the historic preservation areas, innovative design and site planning solutions should be used in the review and approval of developments in these areas, to achieve the objectives of this section. Special guidelines should be developed to direct the property owners and the City in the use and maintenance of the Historic Districts. (See Historic Residential and Open Space Preservation section in The City of Lake Forest Zoning Code, 1972, as amended.) This will ensure that the Historic Districts, which are an intrinsic part of the character of Lake Forest, are appropriately developed and preserved. In addition, it is desirable to establish similar controls in areas other than those already mentioned, if so indicated by future studies.

3. LANDSCAPE PLAN

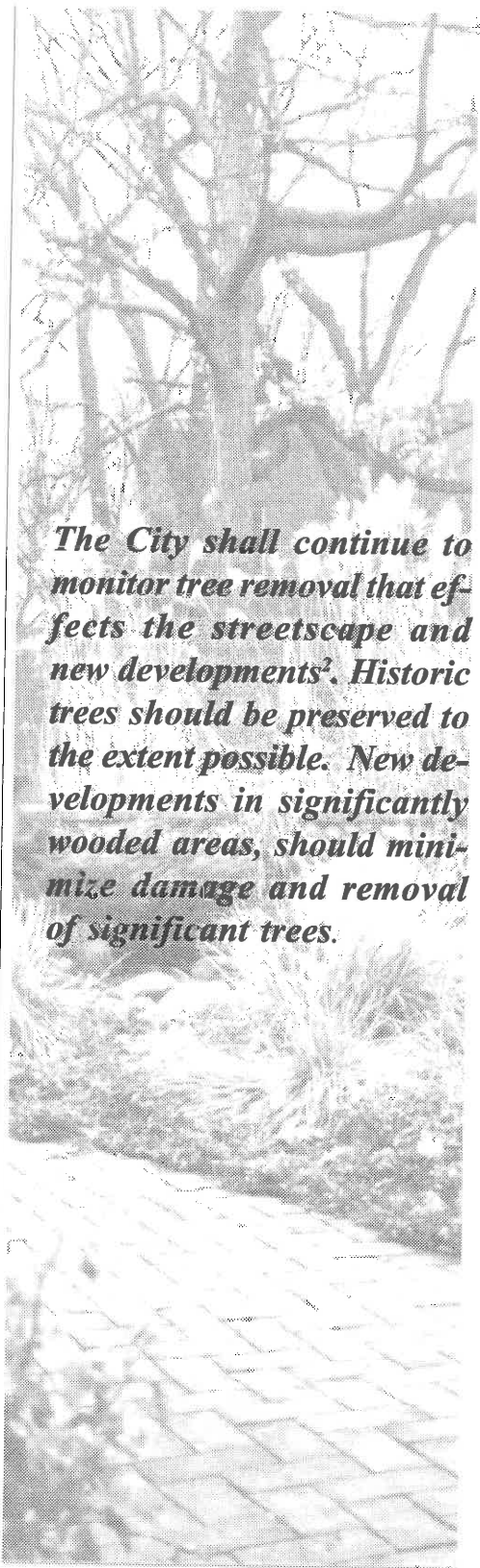
The City shall work towards establishing a fully stocked, healthy and safe landscape. The City shall continue to monitor tree removal that effects the streetscape and new developments². Historic trees should be preserved to the extent possible. New developments in significantly wooded areas should minimize damage to and removal of significant trees. The City should encourage and educate the public about the maintenance and preservation of trees. This will help protect the landscape which determines, to a large extent, the character and ambiance of Lake Forest.

City plantings should not consist of more than 10% of any one species, to the extent possible. This planting diversity will safeguard trees against potential insect or disease problems. Furthermore, plantings should be done so as to enhance or blend with the surroundings. All planting projects on City property shall be low maintenance, high quality, and be designed to ensure pedestrian and vehicle safety.

All large trees should be trimmed at least once every 10 years, to ensure their health and safety. Small trees should be trimmed at least once every five years. Dead trees should be removed for the safety of pedestrians and vehicles.

All newly developed areas should be landscaped to ensure maximum screening from all major roads and existing residential developments. This screening should consist of at least 60% evergreen material to ensure year round screening.

New parking lots should be screened where possible, by a combination of berms and plant material. Good examples of this is the parking lot west of City Hall on Oakwood and Deerpath, Settlers Square parking lot, and the West Lake Forest Train Station parking lot.



The City shall continue to monitor tree removal that effects the streetscape and new developments². Historic trees should be preserved to the extent possible. New developments in significantly wooded areas, should minimize damage and removal of significant trees.

¹ Living in a Ravine & Lakefront Community. A homeowner's guide to managing and protecting the unique geology, ecology and other natural features of ravine and bluff environs. The City of Highland Park Lakefront Task Force and the Department of Community Development. 1995.

² *Tree Preservation Ordinance, Chapter 42, Article III, Section 42-38 and Section 42-38A of the City Code.*

³ *List of Addresses in the Historical District, 1987. (Part of this list was included in the 1989 Comprehensive Plan.)*

The three business districts in the City include the Settler's Square Business District, the Central Business District and Conway Park. These districts contribute to the vitality of the City. The historic Market Square area of the Central Business District establishes a strong positive identity and sense of place for the City.

In 1996, the City and Chamber of Commerce jointly commissioned a study of the business districts entitled "Making a Good Thing Even Better: A Strategic Plan for Enhancing the Business Districts of Lake Forest¹." This Strategic Plan discusses the unique character of each business district and makes recommendations regarding their development. The Comprehensive Plan accepts the general intent of this Strategic Plan, however, the specific recommendations and proposals should be viewed on an individual basis and only as examples of how to carry out the Strategic Plan. Their adoption would require further discussions and public hearings.

1. SETTLER'S SQUARE BUSINESS DISTRICT

The Plan objective for the Settler's Square Business District is to encourage the growth of a functionally and visually unified center with high quality development which establishes a strong positive identity and a sense of place for the area. The District should provide convenience retail and commercial uses which can be sustained by the area neighborhood, and which enhance the vitality in the area.

Settler's Square Business District also functions as a transportation center for the area, including a Metra commuter train station. The development of the Settler's Square Business District should insure an integrated transportation system that provides safe and coordinated circulation and access for vehicles, pedestrians, and bicyclists within the District. This would include an improved pedestrian crossing on Waukegan Road at the intersection of Everett Road, Gloucester Crossing and Conway Road. Please refer to the Transportation Component section for greater detail.

Consistent with these objectives, the recommendations for the re-

The development of Settler's Square should establish a strong positive identity and a sense of place for the area.

It should insure safe and coordinated circulation and access for vehicles pedestrians and bicycles within the District.

maintaining underdeveloped parcels in the Settler's Square Business District is outlined below. The recommendations for the Plan have been divided into three categories, 1.1) Underdeveloped Parcels between Waukegan Road and the Railroad Tracks, 1.2) City Owned Property West of the Railroad Tracks, and 1.3) Underdeveloped Properties East of Waukegan Road. Please refer to Figure 7.1 for the land use recommendations for the Settler's Square Plan.

1.1 Underdeveloped Parcels between Waukegan and the Railroad Tracks

The underdeveloped parcels should be developed consistent with the permitted uses under the B1 Neighborhood Business zoning district. They should be developed by the private sector and be guided and regulated by design standards formulated by the City. The design standards have been developed to achieve the desired quality and physical image for this area, as stated in the Plan objectives, and included in the TIF Plan guidelines. The design guidelines are as follows:

i) Encourage buildings to orient their frontage toward Waukegan Road.

The design aim is to create a definite and continuous edge along Waukegan Road so as to define the corridor and give it visual cohesiveness and identity. The buildings should relate to the roadway with openings and entrances to the establishments, display windows, etc., facing Waukegan Road. The building design should respect and complement the quality and character of existing developments along Waukegan Road.

ii) Encourage two story buildings.

This would help unify the scale of existing and new structures along the Waukegan Road corridor. In so doing, a cohesive visual character along the highway could be achieved. The first floor should be reserved primarily for customer-oriented uses, either service or retail. The second story should be reserved primarily for complementary office uses. This will increase the overall activity within the area.





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iii) Parking lots should be placed to the rear of the building envelopes.

The parking lots should be screened and not be directly visible from Waukegan Road. The aim is to provide a sense of enclosure to the Waukegan Road corridor and to prevent visual sprawl that results from fronting parking lots onto the streets. In addition, the absence of large parking areas along Waukegan Road will create an opportunity for increased pedestrian activity on the sidewalks. The parking lots of adjacent properties should be contiguous if possible. Parking lot entrances should be creatively designed to clearly indicate the presence of lots behind the buildings.

iv) Settlers Square Court should be further enhanced as a useable public space.

A focus or center should be created for the Business District. This could be achieved through improved landscaping in the central area of the court, visual enhancement of the train station access, and the addition of visual design elements such as banners, flags, benches, etc. This will encourage increased activity levels in what is presently a highly underutilized space.

v) Appropriate landscaping should be provided along Waukegan Road.

Landscaping should be provided in order to buffer pedestrians from the traffic and also create a sense of enclosure for Waukegan Road.

1.2 City Owned Property West of the Railroad Tracks.

1.2.1) Commuter Station and Parking

The existing parking space near the train station should be sufficient to meet the future needs of Lake Forest. According to a City survey, future parking demand could be accommodated by using only 35% of the existing parking capacity, or 38% of the ca-

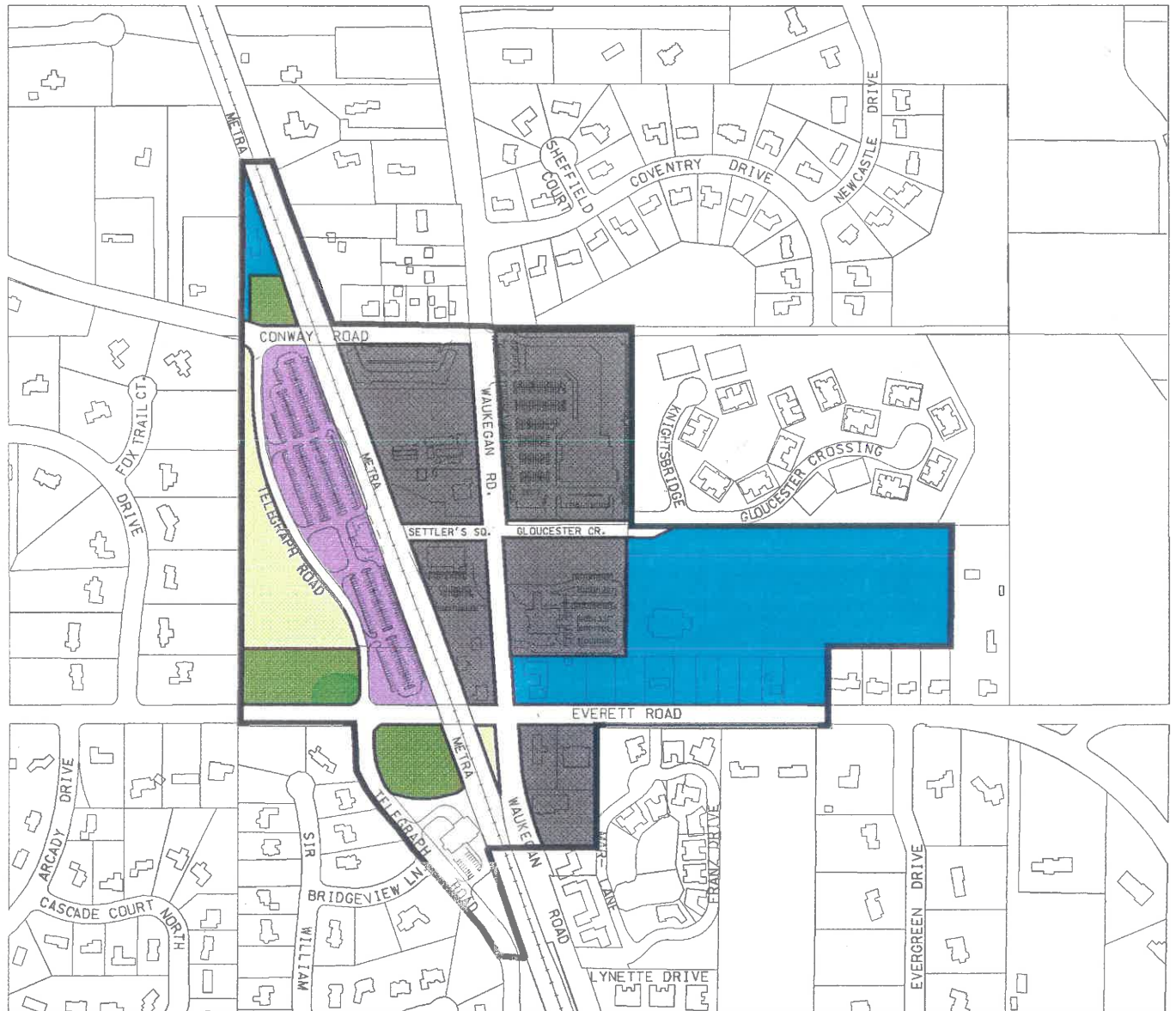







capacity, if the lot adjacent to the West Side Fire Station was removed. In addition, the nonresident use of the parking facility will stabilize, if not decline with the opening of the Lake Cook Road station which will have a larger parking facility, and the new Wisconsin Central line to the west. Given these factors and the excess parking capacity already available, a further expansion of the existing parking facilities should not be required to accommodate future demand.

1.2.2) Public Facilities

- i) *The property north of the West Side Fire Station, on the southwest corner of Everett and Waukegan Roads, should be preserved as open space with the option of developing it for public or quasi-public facilities should the need present itself. These facilities, if needed, should be developed to be compatible with the residential character of the neighborhood, and the site plan design should ensure that the traffic and circulation created by the new use, will not adversely impact the safety requirements of the fire station.*
- ii) *The parcel located on the northwest corner of Conway Road and the Railroad Tracks (south of Glenkirk School) should be developed as open space, which could be landscaped to create a focal point or a northern terminus to Telegraph Road. The subject parcel could also be developed with a public or quasi-public facility, which could include parking should the need present itself.*
- iii) *The parcel on the northwest corner of Everett and Telegraph Roads, should be developed as landscaped open space. The subject parcel could also be developed with a public or quasi-public facility should the need present itself. Specifically, this would exclude a parking facility as it would not be appropriate to allow this use to encroach upon the residential areas west of Telegraph Road. The public / quasi-public facilities, if needed, should be devel-*

FIGURE 7.1 **SETTLER'S SQUARE** **BUSINESS DISTRICT LANDUSE PLAN**



- | | | | |
|---|--------------------------------------|--|-----------------|
|  | COMMUTER STATION/PARKING |  | PUBLIC FACILITY |
|  | OFFICE/RETAIL/
SERVICE COMMERCIAL |  | OPEN SPACE |
|  | PRIVATE
INSTITUTIONAL | | |



December, 1997
 Scale: 1"=570'

oped to be compatible with the residential character of the neighborhood, and the site plan design should ensure that the traffic and circulation created by the new use, will not adversely impact the safety requirements of the West Side Fire Station.

1.2.3) Open Space

The area located west of Telegraph Road, bounded on the north by Conway Road and the south by Everett Road, is currently developed with a large detention pond. This area could be further enhanced and developed as a usable public open space with improved accessibility.

1.3 Underdeveloped Properties East of Waukegan Road

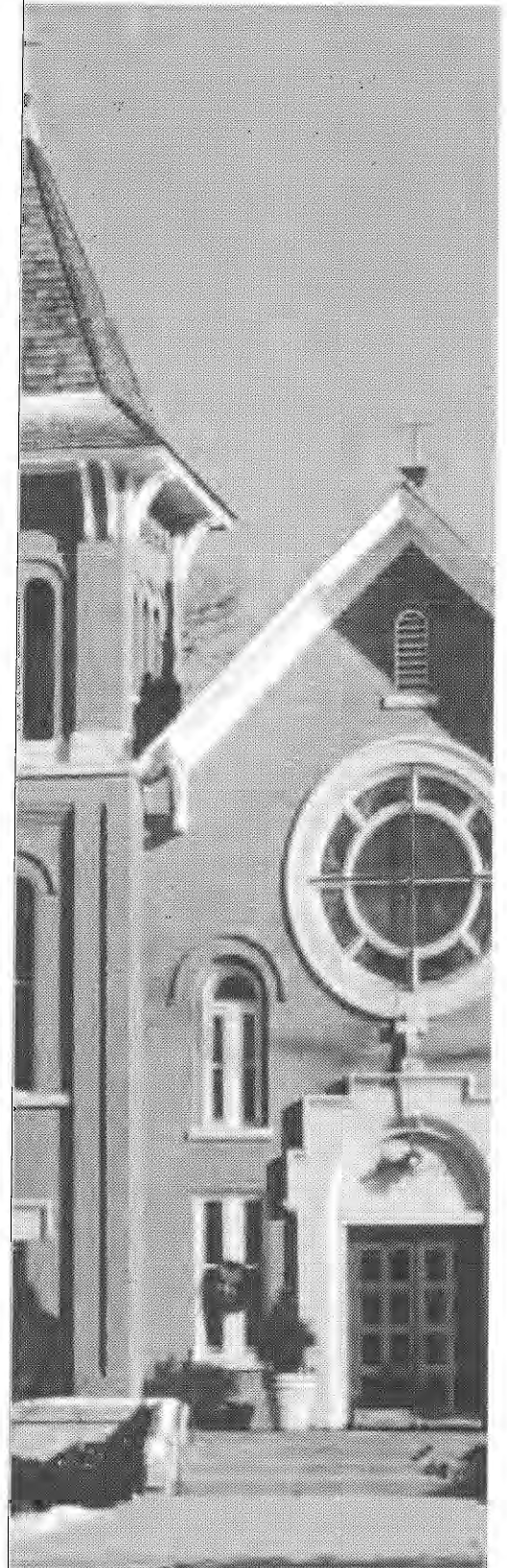
This area includes the vacant parcel north of the Northern Trust Bank, the large property owned by St. Patrick's Church, and the Pasquesi Home and Farm Suppliers site.

- i) **The vacant parcel north of the Northern Trust Bank and the Pasquesi Home and Farm Suppliers sites** are adjacent to existing commercial development and therefore their current commercial zoning should be maintained.

In 1997, a restaurant facility was approved for the vacant parcel north of Northern Trust Bank, consistent with the commercial land use designation.

- ii) **The large property owned by St. Patrick's Church** has always been developed with private institutional uses. The institutional character of this property is well established, and should remain as such.

In 1996-97, the subject parcel was developed with a church and school facility, consistent with the above recommended land use.



2. CENTRAL BUSINESS DISTRICT

The primary goals for the Central Business District are:

- i) to preserve and strengthen the CBD as the primary commercial area, a transportation center, a hospitality center and a residential area for the City.
- ii) to promote the vitality and convenience of the CBD by encouraging a wide range and healthy mix of quality specialty retail and service businesses.
- ii) to preserve the character of historic Market Square. Market Square serves as a City center that establishes a strong positive identity and a sense of place for the City. All new development in the CBD should be compatible with its historic character.

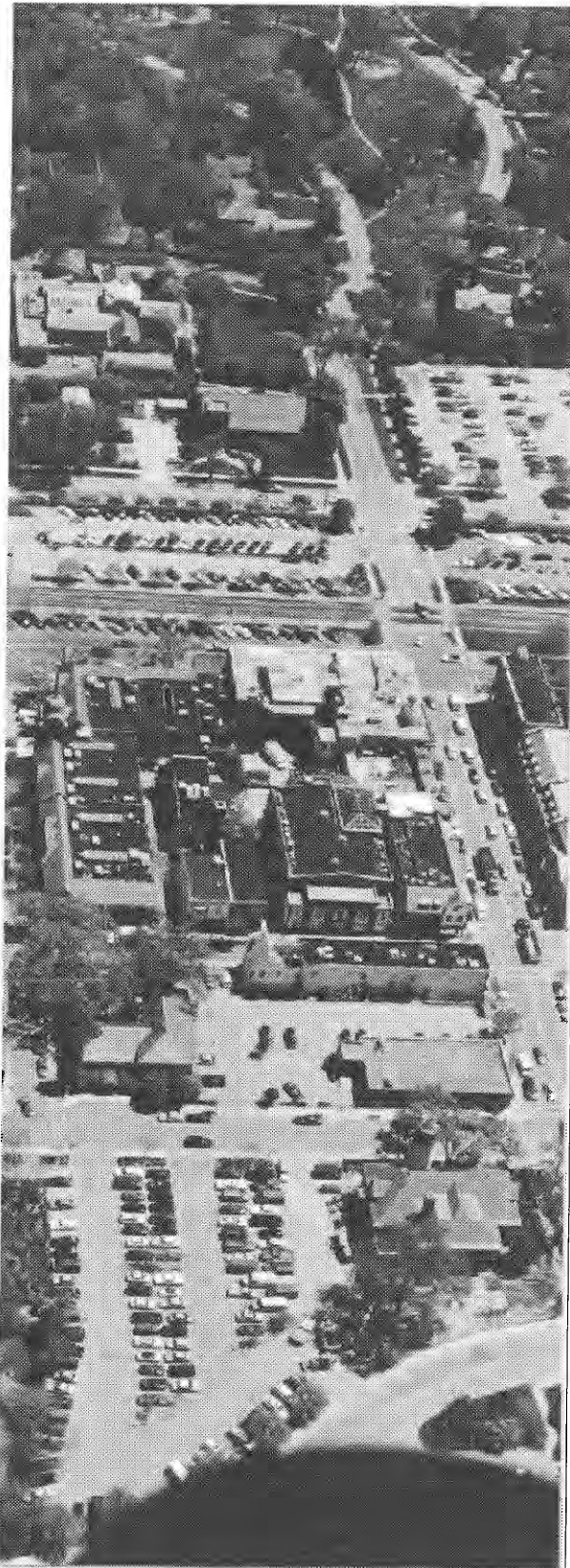
The Central Business District (CBD) is the area encompassed by Franklin Street on the north, Vine Avenue on the south, Oakwood Avenue on the west, and the Union Pacific Railway Station on the east. It also includes the small commercial area located generally around Thomas Place and fronting Western Avenue, and the area located east of McKinley Road, between Westminster on the north and Deerpath on the south, which has office zoning and is partly developed as such.

The CBD is surrounded by sound residential neighborhoods, and an expansion of the above stated CBD boundaries is not expected to be necessary or considered desirable in the foreseeable future. Please refer to Figure 7.2 which illustrates the landuse development pattern for CBD.

The Comprehensive Plan makes the following recommendations for the CBD:

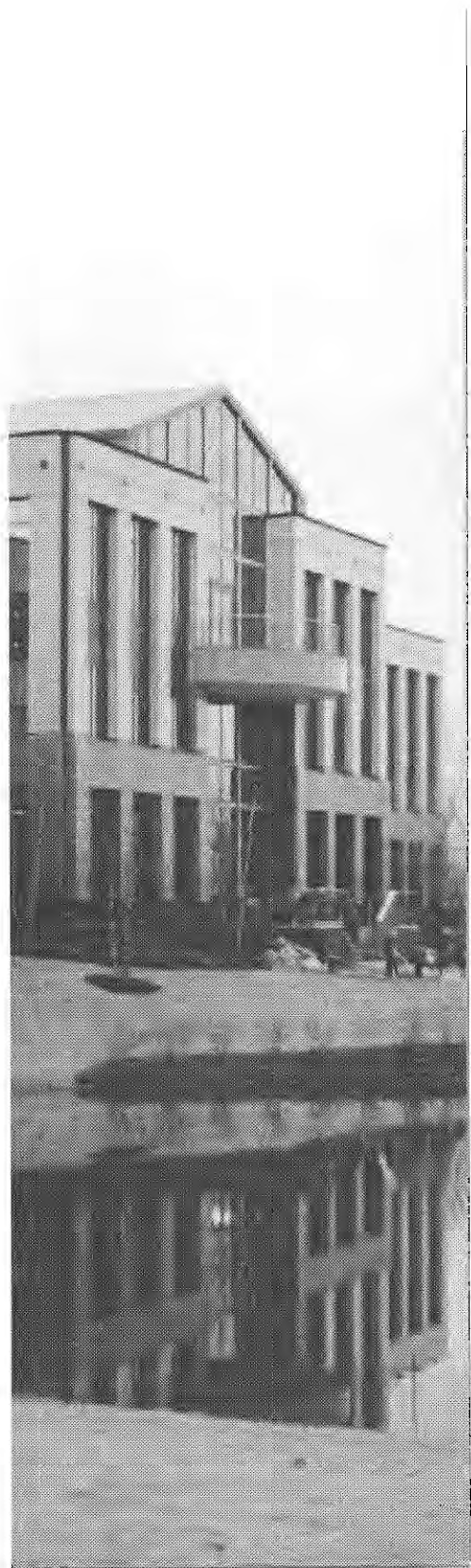
- i) The City, Chamber of Commerce, merchants and property owners should continue their partnership efforts to maximize the district's assets and to overcome development constraints. This would include programs to attract and retain desired new businesses to achieve the above stated goals for the CBD.





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- ii) In the event that the existing under developed and vacant parcels are considered for development, the redevelopment intent should be to strengthen the mixed use, pedestrian oriented, and historical character of the CBD. For instance, the redevelopment of the Blanchard, Knauz and the City-owned Municipal Services (if relocated) properties may include a mix for multi-family residential, and business uses. Other uses might be permitted subject to a further study of the area. (Refer to the Residential Component for additional information.)
- iii) Streetscape improvement programs should be initiated to make the area outside of Market Square more pedestrian friendly. A strong streetscape plan should be developed to link the commercial center around Thomas Place with the CBD. In addition, design improvements to the elevations of the commercial buildings near Thomas Place should be encouraged. Bank Lane should be improved with landscaping and pedestrian amenities, especially in the sections south of Deerpath to Vine Avenue, and north of Westminster to Wisconsin Avenue. This would improve the linkage between the north and south sections of the CBD and also encourage redevelopment of adjacent under utilized properties.
- iv) The Plan encourages the expansion of the primary retail area north of Deerpath to Wisconsin Avenue, and ultimately in a westerly direction to Oakwood Avenue, if there is a demand for additional retail. This expansion should address the need for creating alternative parking which could include converting the municipal parking lots into mixed use developments with parking structures. The Plan also encourages additional residential development in the CBD on the second floor above retail/office uses. The Zoning Ordinance and the Construction Code should be amended, if required, to help achieve these objectives.
- v) The U.S. Postal Service should be encouraged to relocate to an appropriate alternative site for its distribution and truck parking activities. However, a customer service facility should remain in the CBD.



- vi) The intersection at Deerpath and Western Avenue should be monitored and improved to insure enhanced traffic mobility and safety. (Refer to the Transportation Component.)
- vii) One or more architecturally compatible parking structure could be provided, if required, in the future. These parking structures may be incorporated into mixed use developments with retail office, residential, or civic uses.

3. CONWAY PARK

Conway Park represents the City's largest office complex, and is located in the City's western section. Conway Park was annexed by the City in 1988. Its development is governed by conditions stated in an annexation agreement.

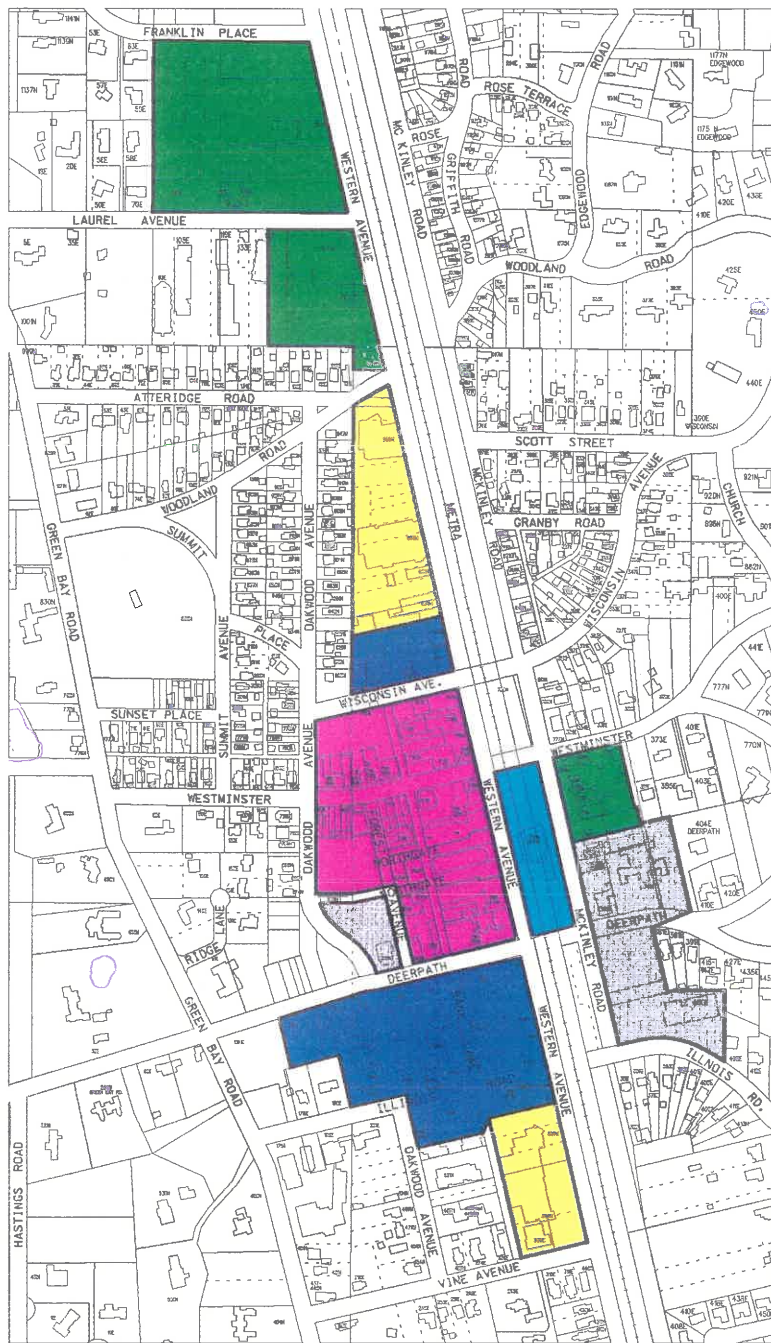
The Comprehensive Plan would recommend providing:

- i) a sidewalk system within the Park.
- ii) a dedicated pedestrian system for crossing Route 60 in order to connect Conway Park with Conway Farms.
- iii) an extension of Field Drive to connect with Bradley Road. A secondary access to Lake Forest Academy from Field Drive should be also provided in the future.
- iv) a new traffic signal at the Field Court and Kennedy Road intersection.
- v) a fully improved interchange at the intersection of the I-94 Tollway and Kennedy Road.

Please refer to the Transportation Component for further details.

¹ Teska Associates Inc., Making a Good Thing Better: A Strategic Plan for Enhancing the Business District of Lake Forest, Prepared for the Lake Forest Chamber of Commerce and the City of Lake Forest; December 1996

FIGURE 7.2
CENTRAL BUSINESS DISTRICT
DEVELOPMENT CONCEPT



December, 1997

Scale: 1"=750 "

- MULTI-FAMILY RESIDENTIAL/COMMERCIAL MIX (commercial is restricted to Western Avenue frontage)
- CONVENIENCE BUSINESS
- PRIMARY RETAIL AND PEDESTRIAN AREA
- METRA STATION
- COMMUNITY USES
- SUPPORTING MIXED USES

Lake Forest has a system of major streets and mass transit, connecting areas within and beyond the City limits. This transportation network has a significant influence in determining the form and character of The City of Lake Forest. The Transportation Plan serves as a guide for planning streets and thoroughfares of the City, so as to provide for safe and efficient handling of present and future traffic.

1. THOROUGHFARE PLAN

1.1 Proposed Street System

There has been an overall increase in traffic within the City, primarily due to residential growth within the City, growth in areas adjacent to the City, and changes in the composition of the Business Districts. These factors have also contributed to the increased use of the three major highways bisecting the City.

Planning principles for an efficient street system require that the highways, roads, and lanes be maintained and developed in appropriate scale with their intended and adjacent land uses, so that they are capable of safely handling present or anticipated traffic volumes. With this objective a hierarchical street classification system is outlined below. Refer to Figure 8.1. Future land uses should be planned to be compatible with the function and capacity of the adjacent street system.

- i) **Expressways and Toll Roads:** are regional highways with the primary purpose of carrying inter-state and intra-state through traffic. This would include the Northern Illinois Tollway, or Interstate 94, and Skokie Highway (U.S. Route 41).
- ii) **Major Arterials:** are major streets with the primary purpose of carrying through traffic and with the secondary purpose of providing access to adjoining properties. They are characterized by significant traffic volumes, generally with average daily traffic counts exceeding 3,500 vehicles. Major arterials include, Kennedy Road,

The Transportation Plan serves as a guide for planning the City's streets and thoroughfares, so as to provide for safe and efficient handling of present and future traffic.

Future land uses should be planned to be compatible with the function and capacity of the adjacent street system.

Waukegan Road, Everett Road, Old Elm Road, Deerpath (between Waukegan Road and Western Avenue), Westleigh Road (between Route 41 and Western Avenue), Green Bay Road, Western Avenue (between Laurel Avenue and Westleigh Road), and McKinley Road (north of Illinois Road).

- iii) **Collector/Distributor Roads:** have the primary purpose of intercepting traffic from intersecting local streets, and transferring it to the nearest major arterial. Their secondary function is to service adjoining land uses. These streets are characterized by significant traffic volumes, relatively short trips, a lower proportion of through traffic, and slower speeds than major arterials. Average Daily Traffic Counts are typically between 1,500 to 3,500 vehicles. Collector streets include Field Drive, Conway Farms Drive, Telegraph Road, Old Mill Road (west of Waukegan Road), Ridge Road, Westleigh Road (west of Route 41), parts of Everett road, Buena Road, Valley Road, Beverly Place, Onwentsia Road, Ahwahnee Road, Illinois Road (west of Sheridan Road), Sheridan Road, Lake Road, Deerpath (east of Western Avenue), Westminster (between Green Bay and Sheridan Road), Woodland Road (between Green Bay and Sheridan Road), Laurel Avenue (east of Green Bay Road), Western Avenue (north of Laurel Avenue), and Alden Lane.

Future collector streets could include Conway Road, after Conway Farms Drive has been extended, as proposed below in section 1.2.1. Old Mill Road could also be classified as a collector

street, subsequent to the bridge improvements suggested in section 2.

- iv) **Business Commercial Streets:** are streets which primarily serve the City's business areas, and generally include on-street parking. These streets include parts of Western Avenue, McKinley Road, Illinois Road, Westminster and Deerpath.
- v) **Local Residential Streets:** provide direct access to adjoining land uses, which are primarily single family residential. These include both public and private streets, and are typically characterized by low traffic volumes, tree lined discontinuous curvilinear alignment and ornamental street lighting.

1.2 Street Extensions

The Thoroughfare Plan recommends new streets and street extensions to serve anticipated land use developments. New streets and extension of existing streets will be necessary to serve future developments, and also to connect new developments with the existing neighborhoods. Refer to Figure 8.2 illustrating the proposed Transportation Plan. Two types of street extensions are recommended:

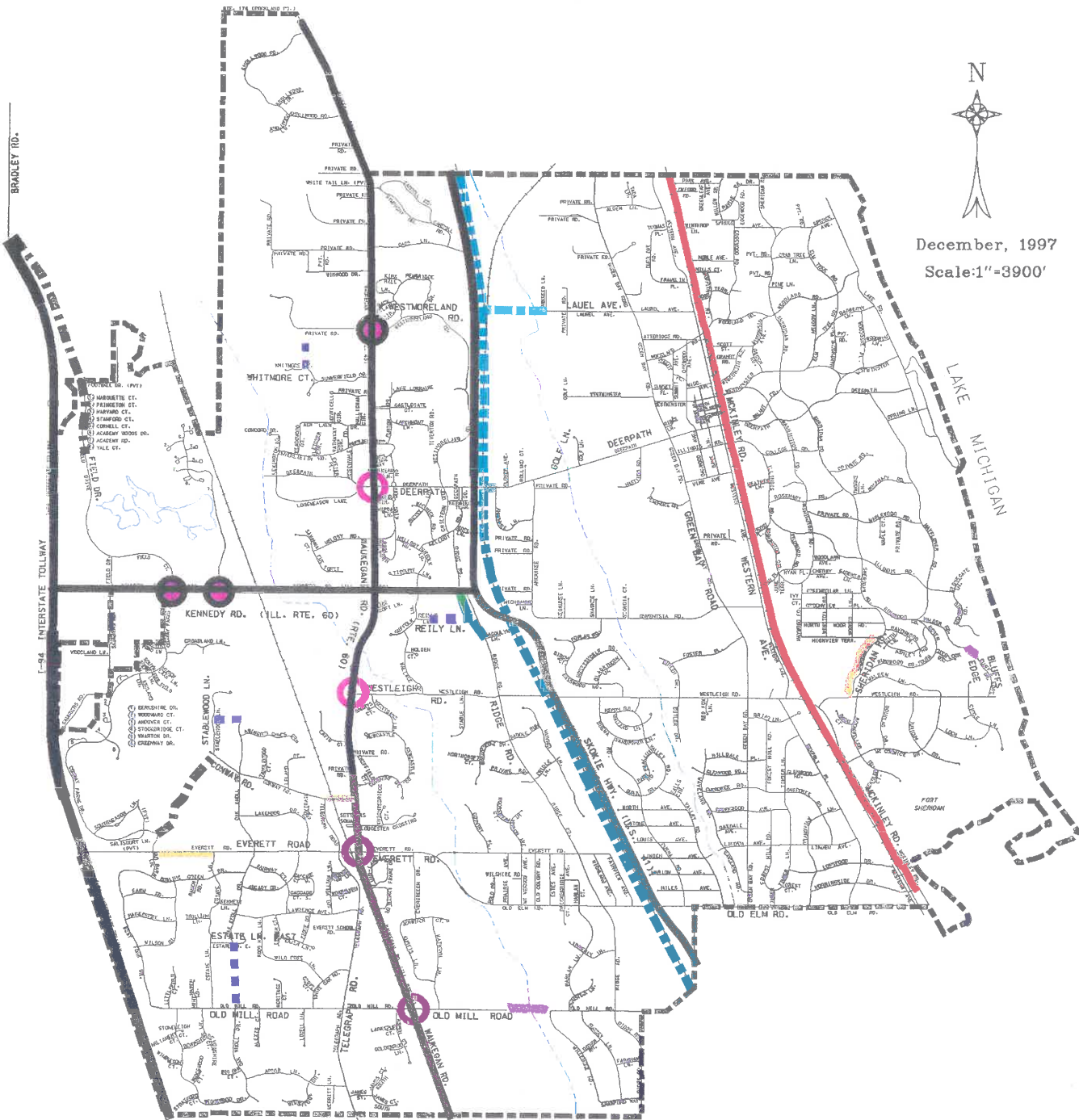
1.2.1) Recommended Collector Arterials:

Extensions of two collector arterials are recommended below. It is envisioned that the required right-of-way would be acquired, and road improvements constructed at such time as the adjoining properties are developed. It should be noted that the Transportation Plan (Figure 8.2) shows approximate location of the proposed extensions, and their precise loca-

FIGURE 8.2 TRANSPORTATION PLAN



December, 1997
Scale: 1"=3900'

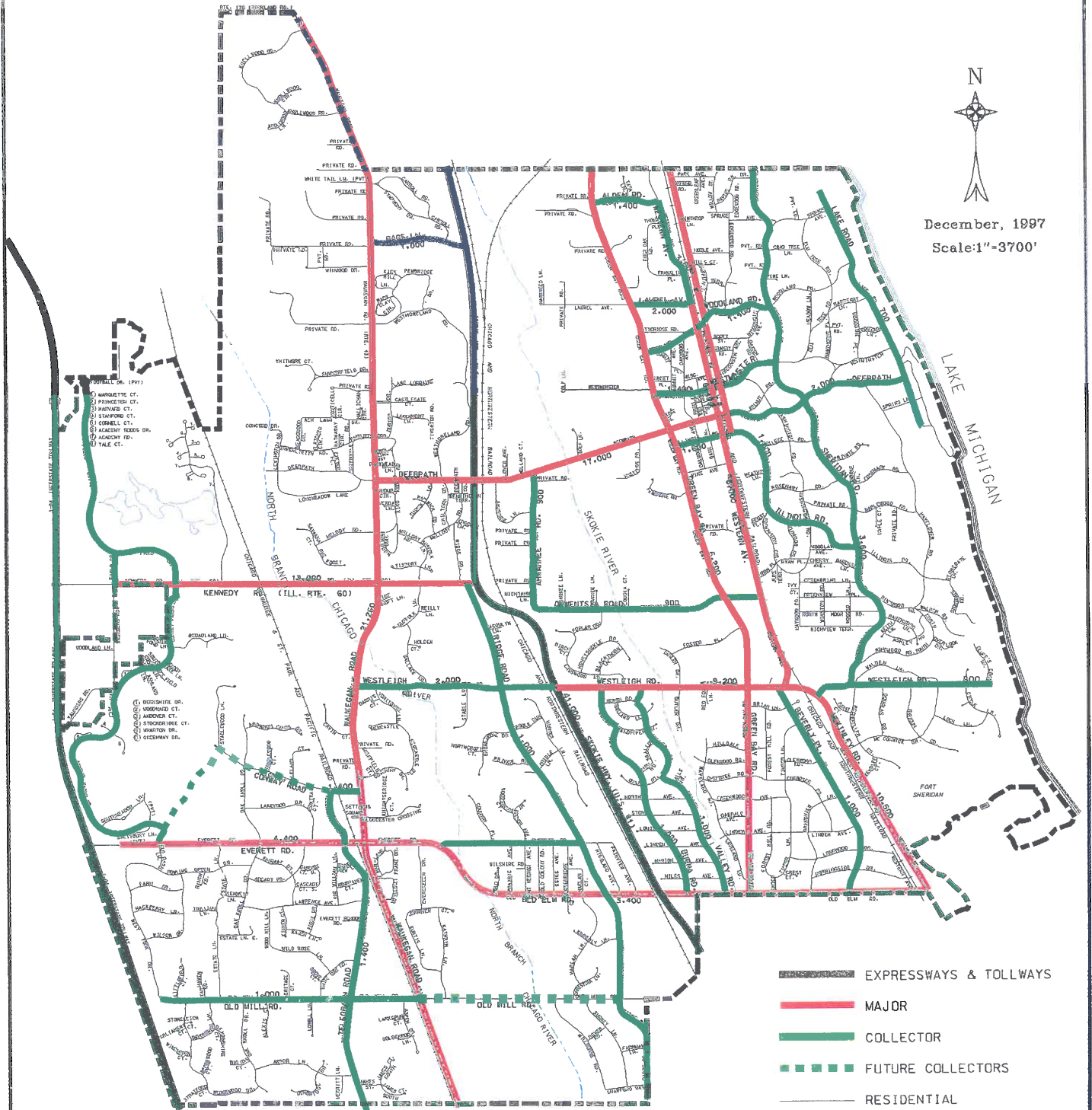


- | | | | |
|--|-------------------------------|--|---|
| | STATE/FEDERAL HIGHWAYS | | PROPOSED RESIDENTIAL CONNECTORS |
| | PROPOSED NEW TRAFFIC SIGNALS | | SIDEWALK IMPROVEMENTS |
| | PROPOSED INTERSECTION UPGRADE | | BRIDGE IMPROVEMENTS |
| | PROPOSED STREET EXTENSIONS | | LAKE FOREST BIKE ROUTE |
| | PROPOSED STREET ALIGNMENT | | PROPOSED ROUTE 41 CORRIDOR BIKE TRAIL AND CITY CONNECTORS |

FIGURE 8.1 CLASSIFICATION OF STREETS



December, 1997
Scale: 1"=3700'



- EXPRESSWAYS & TOLLWAYS
- MAJOR
- COLLECTOR
- FUTURE COLLECTORS
- RESIDENTIAL

tions will be determined at the time the development is contemplated.

- i) **Conway Farms Drive** should be extended to the northeast to connect with Conway Road when the southeast portion of Conway Farms is developed, in accordance with the Annexation Agreement. Furthermore, Conway Road and Stablewood Lane were originally located with the intent of providing a T-shaped intersection with the envisioned extension. The proposed connection to Conway Road would also function as an alternate to Everett Road for accessing Waukegan Road and Settlers Square.
- ii) **Field Drive** should be extended further north, through Conway Farms and the proposed annexation areas, to Bradley Road. The extension should be in accordance with the Annexation Agreement with Conway Farms. This would provide an alternative means of ingress and egress for traffic from the Conway Farms office development. In addition, this extension would help to alleviate existing traffic problems on Kennedy Road. Language to this effect has been also included under the Annexation section of the Comprehensive Plan. Furthermore, a secondary access to Lake Forest Academy from Field Drive should be provided in the future.

1.2.2) Recommended Residential Streets:

New streets and extensions will be necessary to serve traffic within new developments, and also to inter-connect these new developments with the existing neighborhoods. One of the Plan objectives is to ensure that where possible, new developments are connected with existing ones in terms of street networks, access to facilities, and utilities. These interconnections are desirable for integrating new developments with the existing City fabric and to prevent creation of isolated enclaves.

The northwest quadrant of the City will require several

Conway Farms Drive should be extended to the northeast to connect with Conway Road when the southeast portion of Conway Farms is developed, in accordance with the Annexation Agreement.

Field Drive should be extended further north, through Conway Farms and the proposed annexation areas, to Bradley Road.

Ensure that where possible, new developments are connected with existing ones in terms of street networks, access to facilities, and utilities. These interconnections are desirable for integrating new developments with the existing City fabric and to prevent creation of isolated enclaves.

residential connector streets. This is primarily because this quadrant has the maximum potential for residential growth in the future, and currently lacks the infrastructure required to support this growth. Future streets are depicted diagrammatically on the Transportation Plan (Figure 8.2.) as possible points of intersection with existing streets. These include potential connectors from:

- i) Oak Knoll Drive to Stablewood Lane
- ii) a section of Oak Knoll Drive north of Estate Lane East, to the section south of Old Mill Road
- iii) Reilly Lane to Ridge Road
- iv) Whitmore Road to the north

The exact location of the street extensions shall be determined when an actual development is contemplated. This would allow for the flexibility necessary to best locate new streets in relation to the site and the character of proposed development, as well as that of neighboring communities. The development process should carefully evaluate the need and location of new streets and street extensions, relative to the existing right-of-way and overall street pattern.

Cul-de-sac streets should be permitted if they are of limited length, serve a limited number of residences, and their future extension is not considered necessary or desirable.

Private roadways and driveways should generally not be permitted in place of dedicated public right-of-way to access more than three interior lots.

2. STREET IMPROVEMENTS

The Comprehensive Plan recommends that highways and roads be maintained and developed in proper scale with their intended and adjacent land uses, so that they are capable of safely handling present or anticipated traffic volumes. To this effect, the City should explore and develop methods to mitigate the impact of traffic growth resulting from the potential development of areas within and adjacent to the City. This would include the maintenance and improvement of intersections and traffic control devices to provide adequate safety. Street improvement recommendations (Figure 8.2.) can be classified as follows:

2.1 State Route Improvements:

The three state routes in The City of Lake Forest are Waukegan Road (Illinois Route 43), Kennedy Road (Illinois Route 60), and Skokie Highway (U.S. Route 41). The fourth major roadway bordering the western City limits is the I-94 Interstate Tollway, controlled by the Illinois Tollway Authority. These four routes are maintained and improved by their respective governing bodies and are not under the direct jurisdiction of The City of Lake Forest.

The Illinois Department of Transportation is conducting a "Strategic Regional Arterial Highway System" study to evaluate long range improvements to ameliorate traffic mobility along Kennedy Road (Route 60) and Skokie Highway (Route 41). Roadway improvements would be achieved through capacity and/or operational improvements and access management techniques. These might include a widening of Skokie Highway and Kennedy Road, west of Field Drive, from four to six lanes. These improvements may occur within the next 20-50 years. The City also supports the improvements on Illinois Route 22 as proposed by Illinois Department of Transportation, stated in the City Council's resolution (number 1994, dated April 6, 1987).

Kennedy Road would require roadway improvements and signalized intersections to safely and efficiently handle additional traffic generated by adjacent future developments. The

The City should explore and develop methods to mitigate the impact of traffic growth resulting from the potential development of areas within and adjacent to the City. This would include the maintenance and improvement of intersections and traffic control devices to provide adequate safety.

Comprehensive Plan would recommend that future roadway improvements for Kennedy Road should include the provision for:

- i) a fully improved interchange at the intersection of the I-94 Tollway and Kennedy Road.
- ii) a new traffic signal at the Academy Road and Kennedy Road intersection.
- ii) a new traffic signal at the Field Court and Kennedy Road intersection.
- iii) a dedicated pedestrian system for crossing Route 60 to connect Conway Park with Conway Farms.

The speed limit for Waukegan Road should be monitored to ensure traffic safety. The following intersections along Waukegan Road (Route 43) need to be improved to enhance their safety and/or capacity.

- i) Westmoreland Road and Waukegan Road intersection should be signalized to adequately handle traffic generated by future development.
- ii) The signalized intersection at Deerpath and Waukegan Road should be upgraded, to provide left turn lanes for the north, south and westbound traffic.
- iii) the signalized intersection at Westleigh Road and Waukegan Road should be upgraded, to provide left turn lanes for the north, south and west bound traffic.
- iv) Waukegan Road and Conway Road intersection should be signalized, if

required, to adequately handle future traffic.

- iv) The signalized intersection at Everett and Waukegan Roads should be upgraded to provide a westbound right turn lane and enhanced signal phasing. In addition, an improved pedestrian crossing should be provided at this intersection.
- v) The Old Mill Road and Waukegan Road intersection needs to be upgraded to effectively handle traffic generated from future residential development in that area. The improvements could include geometrics and/or signalization depending on the volume of future traffic.

A shuttle bus service connecting the Central Business District train station and the Settler's Square District train station to the Conway Farms office park, should be considered. This would help to alleviate future traffic growth on Deerpath, Waukegan road and Kennedy Road, resulting from the future development of the office park.

2.2. City Street Improvements:

The Western Avenue and Woodland Road intersection should be monitored closely for traffic safety. This intersection could be upgraded, if required, to handle increased traffic volumes generated by future developments in the immediate area.

The section of Ridge Road extending south of Kennedy Road, should be modified to align with the section located to the north of Kennedy Road. This would eliminate the existing jog in Ridge Road at the Kennedy Road

intersection, and hence improve overall traffic safety.

The future development of Fort Sheridan would generate additional traffic on Old Elm and Westleigh Roads. Sections of both these roads located to the east of Route 41, should be improved if so required in the future.

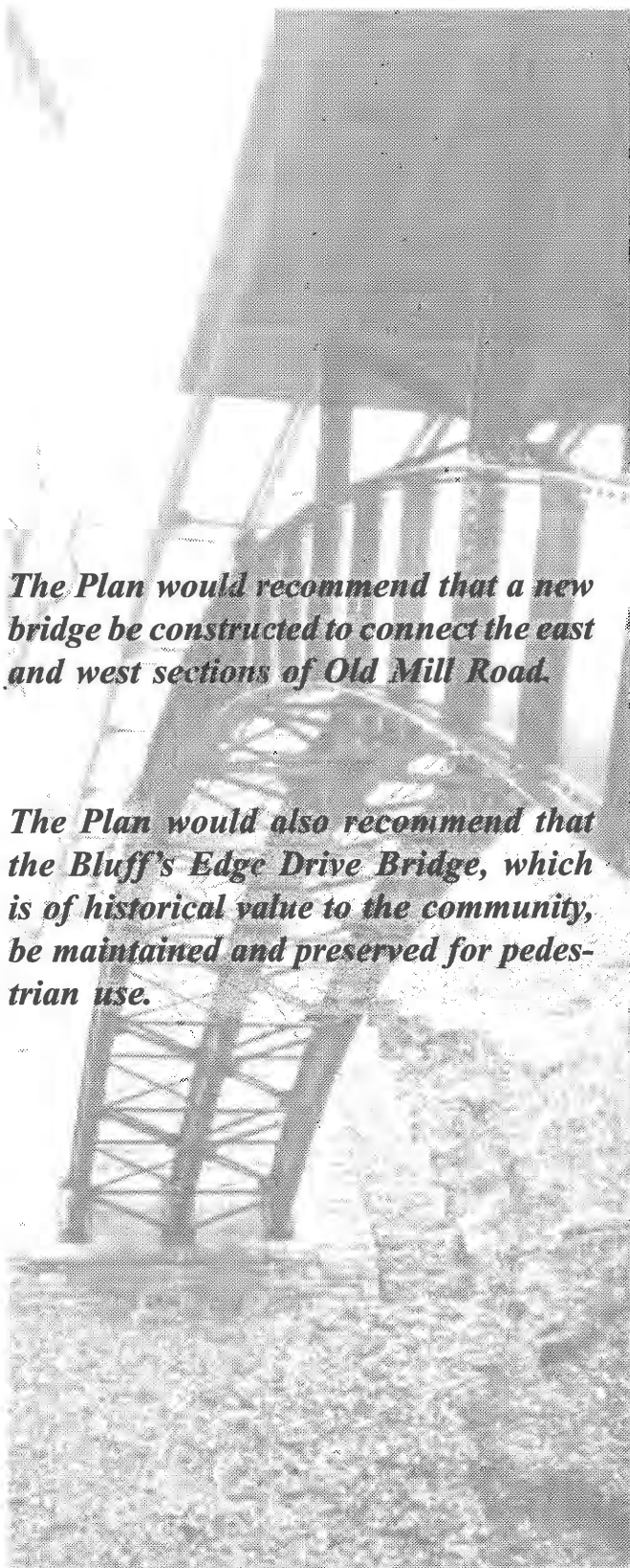
One of the objectives of the Transportation Plan was to evaluate possible alternatives to improve east-west circulation within the City. This issue was given considerable thought and methods for providing the City a secondary east-west corridor were studied. One of the alternatives discussed was the westerly extension of Laurel Avenue to connect with Waukegan Road. However, the Skokie River, the Chicago and Northwestern Railroad tracks, and the Skokie Highway each would bisect the proposed connector. Therefore, a considerable amount of the right-of-way would have to be acquired and a new interchange at U.S. Route 41 would also have to be constructed. It was therefore concluded that this extension would not be feasible due to both economical and functional constraints.

The widening of Deerpath from a two lane to a four lane road, to accommodate increased traffic volumes, was also considered. However, the suggested widening would not improve the overall traffic situation, primarily because Deerpath can only be widened from Waukegan Road to Green Bay Road (or at the most Oakwood Avenue). Thus while additional traffic could be accommodated on Deerpath, a "bottle neck" would occur at either the Green Bay or Oakwood Avenue intersection. It was therefore concluded that a road widening would adversely impact both the traffic situation on Deerpath and the exist-

ing streetscape.

The existing traffic delays on Deerpath occur only at peak times and are for a short duration. In addition, most of the remaining residential growth which could effect future traffic patterns, is concentrated in the western section of the City. With the development of retail and commercial facilities in Settler's Square, there might be fewer car trips to the Central Business District. While there are existing short term traffic delays on Deerpath, there appear to be no feasible engineering solutions to improve the east-west circulation. The Plan would recommend that studies be conducted that analyze alternative solutions such as phasing out the Deerpath School peak traffic times, monitoring truck traffic, etc., to alleviate this traffic situation.

The final issue is regarding traffic improvements in the Central Business District. Concern has been expressed about traffic delays along Western Avenue. Most of the stated delays are near the three stop signs at Deerpath, Westminster and the Wisconsin intersections. These traffic delays are also a short term problem, as the traffic backs up only at peak hours and for a short duration. The Plan would recommend that these intersections be continually monitored to increase the traffic mobility along Western Avenue.



The Plan would recommend that a new bridge be constructed to connect the east and west sections of Old Mill Road.

The Plan would also recommend that the Bluff's Edge Drive Bridge, which is of historical value to the community, be maintained and preserved for pedestrian use.

3. BRIDGE IMPROVEMENTS

Bridges are important components of the City's street system. In recent years, the City has pursued an aggressive and intensive program to maintain and restore most of its bridges. These include the older bridges which cross the numerous ravines on the east side of the City, including the Ferry Hall, Carr-Thompson, Lake-Woodbine, McLennon-Reed, and Walden Lane Bridges. In addition, the City has also completed construction of the new Everett Road bridge, replacement of the Westleigh Road Bridge and the Onwentsia Road Bridge, and conversion of the Elm Tree Bridge for pedestrian use.

The Plan would recommend that a new bridge be constructed to connect the east and west sections of Old Mill Road. The proposed bridge would enable the eastern section of Old Mill Road to be accessed directly from Waukegan Road. This would improve the overall traffic circulation pattern and also reduce the response time for fires and other emergencies in the Old Elm Estate Subdivision. The proposed bridge should be constructed concurrently with the improvements to the Old Mill Road and Waukegan Road intersection. This would ensure safe and efficient movement of traffic at this intersection.

The Plan would also recommend that the Bluff's Edge Drive Bridge, which is of historical value to the community, be maintained and preserved for pedestrian use. Refer to Figure 8.2., for the location of the proposed bridges.

4. PEDESTRIAN AND BICYCLE FACILITIES

The City has a network of pedestrian sidewalks and pathways that connect the major activity centers within the community: neighborhoods, schools, parks, business districts and other destinations. Most of the pedestrian routes are located along streets and separated from the roadway by landscaped parkways. In some cases, off road bike paths serve as both bicycle and pedestrian routes. The sidewalks and pathways located within the City right-of-way and on public property are inspected, evaluated and repaired or replaced on an ongoing basis as part of the City's annual Capital Improvement Program.

On June 3, 2013 the City Council accepted the City of Lake Forest Bicycle Master Plan; the Master Plan is incorporated into this Comprehensive Plan by reference. The Bicycle Master Plan is intended to make Lake Forest an increasingly bicycle friendly community by identifying safe bicycle routes, educating both cyclists and drivers about how to safely share the road, and by establishing priorities for future bicycle facility improvements in the community. The complete Bicycle Master Plan is included as part of the Appendix to the Comprehensive Plan. As a summary, the goals established in the Bicycle Master Plan are provided below and the Bicycle Network Map follows as Figure 8.3.

Goal 1 – Awareness

To generate awareness and acceptance of bicycling in Lake Forest

- *Adopt the Bicycle Master Plan as the guiding document relating to bicycle improvement.*
- *Educate bicyclists and motorists on how to “share the road”.*
- *Through the above efforts, become recognized as a “Bicycle Friendly Community” by the League of American Bicyclists.*

Goal 2 – Connectivity

To connect major destinations within Lake Forest and facilitate access to the established regional network.

- *Implement on-road bicycle facility improvements and signed bicycle routes in Lake Forest.*
- *Consider bicycle connections to regional trails and local destinations as part of new development plans and neighborhoods in Lake Forest.*
- *Collaborate with regional partners to evaluate future bicycle facilities on state routes within the city limits of Lake Forest and connections to surrounding communities.*
- *Facilitate the creation of “Bike to Metra” maps and brochures to promote bicycling in Lake Forest as a valid mode of transportation for people visiting and working in Lake Forest.*

Goal 3 – Safety

To provide safe transportation options for people of all ages and physical abilities in Lake Forest.

- *Achieve a Bicycle Level of Service rating of C or higher on residential streets.*
- *Create a safe environment for all users of the roadways and trails.*
- *Provide safe east-west bicycle connections in Lake Forest.*
- *Maintain a low number of bicycle crashes and injuries for all ages.*
- *Enforce traffic rules for bicyclists and motorists in accordance with Lake Forest Police standards and practices.*
- *Provide safe riding instruction through local community organizations.*

Goal 4 – Health & Wellness

To promote bicycling as a healthy, safe, convenient and enjoyable means of transportation and recreation.

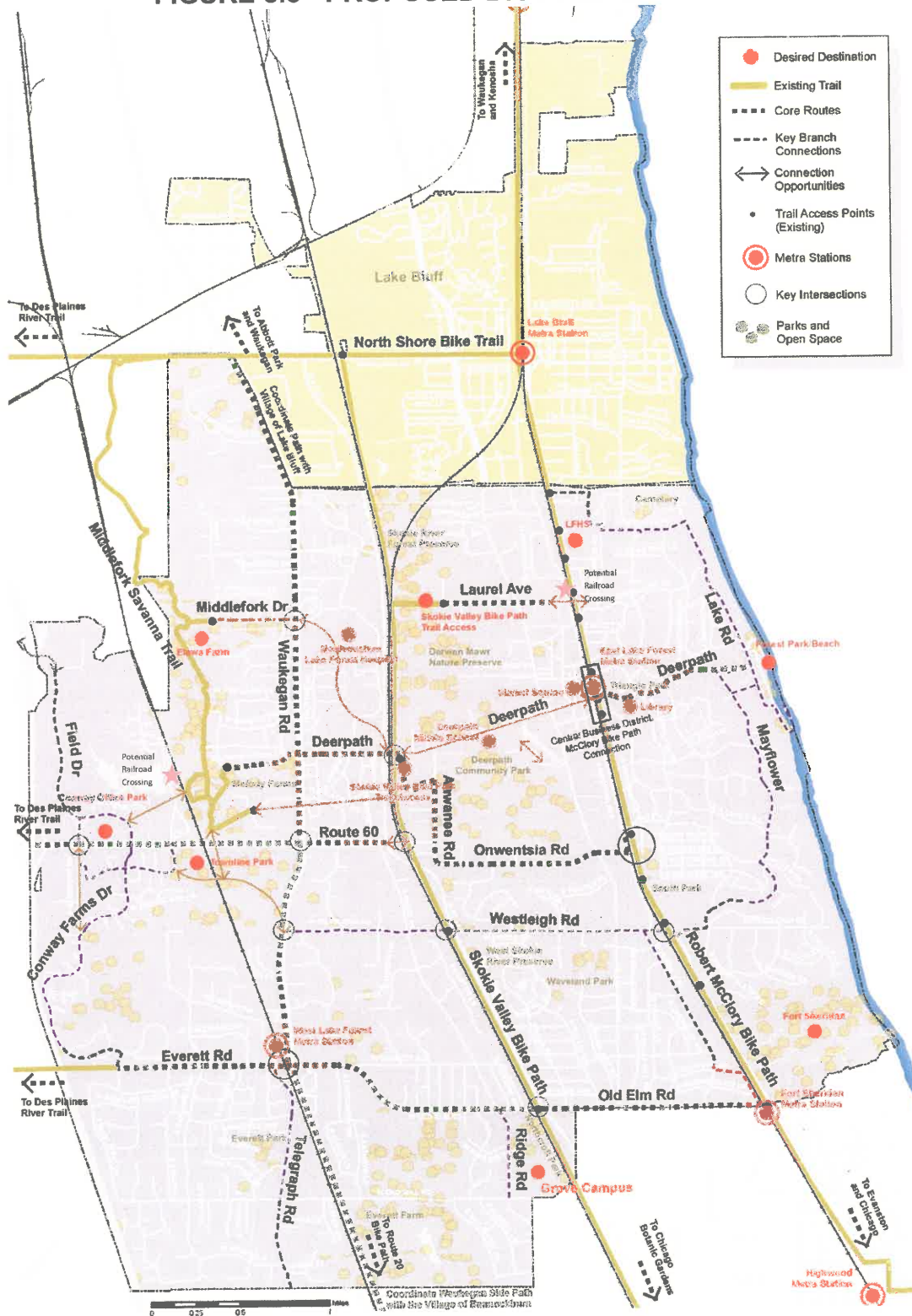
- *Support healthy life styles and active transportation by promoting a bicycle friendly community.*
- *Encourage use of the bike network for utilitarian and recreational purposes.*
- *Provide basic information to the public regarding bicycle opportunities and the health benefits of increased physical activity.*

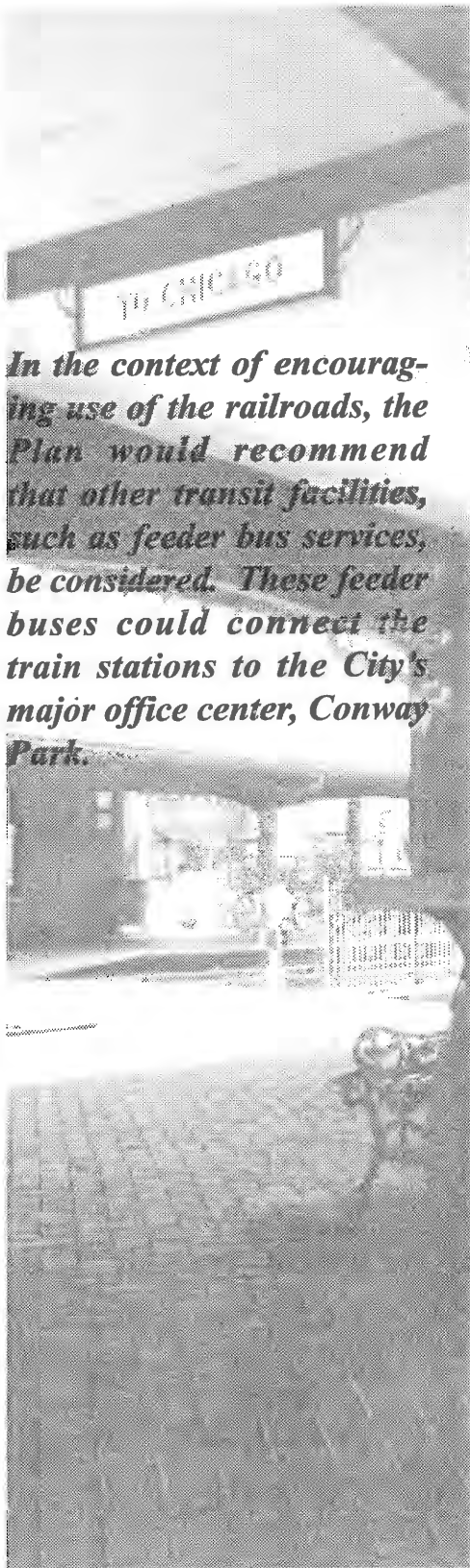
Goal 5 – Environment

To protect the environment for the long term by promoting bicycling as a viable and sustainable transportation choice in Lake Forest.

- *Install new bike parking racks in Lake Forest at key destinations.*
- *Reduce car emissions in Lake Forest by encouraging short trips of less than 2 miles to be completed by bicycle.*
- *Provide marked bicycle routes to provide a safe and sustainable transportation option to get to key destinations.*
- *Identify and encourage adoption of policies that require future development and capital projects to include bicycle connections when possible.*
- *Enhance public transportation hubs at the East and West Lake Forest train stations with safe bicycling thoroughfares and directional signage to key destinations.*

FIGURE 8.3 - PROPOSED BICYCLE NETWORK





In the context of encouraging use of the railroads, the Plan would recommend that other transit facilities, such as feeder bus services, be considered. These feeder buses could connect the train stations to the City's major office center, Conway Park.

5. PUBLIC TRANSIT FACILITIES

The private automobile is the primary means of transportation used by the residents of Lake Forest. However, existing railroad connections provided by the Chicago and Northwestern Railway and the Chicago Milwaukee Railway, offer important mass transit facilities for the City. The use of these railroad transit facilities should be maintained and strengthened, given their established use, regional significance, and significant past investment. The train stations in both the Central Business District and Settler's Square, are functionally sound and in excellent condition. The existing parking facilities at both stations are adequate to accommodate present and future demand. The stations are an asset to the City and should adequately meet commuter needs for the foreseeable future.

In the context of encouraging use of the railroads, the Plan would recommend that other transit facilities, such as feeder bus services, be considered. These feeder buses could connect the train stations to the City's major office center, Conway Park. The future development of Conway Park Office Park, might generate enough demand to make the proposed shuttle service a viable option.

¹ *The City of Lake Forest Sidewalk Survey, 1995.*

The City of Lake Forest shall experience a population increase with time, as it approaches its final buildout phase. This population growth will result in increased demands on community facilities such as schools, parks, public buildings and utilities. The City should ensure that community services and resources adequately and efficiently meet current and future needs, and maintain their high standards of service. Refer to Figure 10.1, for the Community Facilities Plan.

The City should ensure that community services and resources adequately and efficiently meet current and future needs, and maintain their high standards of service.

1. SCHOOLS

The existing schools provide a high standard of facilities and are appropriately located in relation to their student population base. However, additional school facilities might be required in the future, in response to potential growth in student population and changes in the student population composition.

1.1 Projected Demand

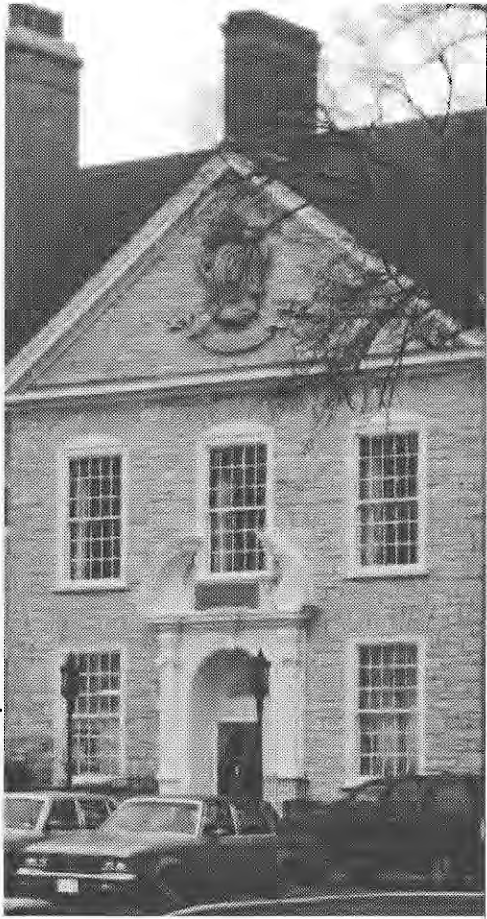
The enrollment in the Elementary School District 67, peaked in 1969-70, and then declined steadily through the next 15 years till 1984, when it reached its lowest figure. Since 1985, enrollment has grown each year, reaching 1,952 students by 1994-95. The High School District 115 enrollment continued to decline steadily until 1991. Since 1992, the enrollment has increased reaching 1,138 students by 1994-95.

The continued use and optimum utilization of the West Campus would be an important factor in accommodating future elementary school needs.

The High School District closed its west campus school building located on Waukegan Road, due to its decreasing enrollment. Subsequently, this building was leased by the Elementary School District to meet its growing space requirements. The continued use and optimum utilization of the West Campus would be an important factor in accommodating future elementary school needs.

The Plan recommends that the existing high quality of school facilities be maintained, and that the facilities be expanded, if required, to ensure that they adequately provide for the current and future needs of the community.

A long term increase in enrollment is probable for both the Elementary and High School Districts, primarily due to the increase in the number of dwelling units in the City. At full build-out The City of Lake Forest could have a total of up to 8,024 dwelling units. According to the Clarion study,¹ the



In recognition of its historical significance, City Hall should be maintained as the administrative center of the City government.

new households could bring an estimated addition of 473 to 709 children into the public school system, representing an increase of 17% to 25% over 1994 enrollment. Assuming that both elementary and high school enrollment ratios remain relatively constant, the estimated future enrollment would range from 2411 to 2251 students in elementary schools, and from 1059 to 1135 in high schools.

According to the Kasarda study², additional space requirements to accommodate the projected elementary school enrollment, can be provided by reconfiguring existing space in certain school buildings, until 2003. However, with an increase in population an additional elementary school may still be required at a future date. In addition, the junior high school may also need to be expanded to accommodate increased enrollment demands. The Plan recommends that the existing high quality of school facilities be maintained, and that the facilities be expanded, if required, to ensure that they adequately provide for the current and future needs of the community.

2. PUBLIC BUILDINGS

The public buildings within the City include some historical landmark structures. The public buildings are generally well maintained and appropriately designed. However, some facilities require renovation and expansion to accommodate the technical and functional needs of a growing City.

2.1 City Hall

City Hall is one of the most important civic landmarks for The City of Lake Forest. The Plan recommends that the historical character and the architectural integrity of City Hall be maintained and preserved. In addition, in recognition of its historical significance, City Hall should be maintained as the administrative center of the Lake Forest City government. To this effect, City Hall was remodeled and renovated in 1996, to ensure compliance with the American Disabilities Act, and provide improved amenities for public meetings.

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2.2 Municipal Services Building

The Municipal Services Building houses the City government's administrative functions and other essential services. The building has undergone expansion previously, to address greater demands for office, garage and storage space. However, the size of the present location at 110 E. Laurel Avenue, makes it difficult to accommodate the increased space needs of a growing City. Therefore, the Municipal Services could be relocated at a future date, to a site at the northwest corner of Fort Sheridan. The existing Municipal Services site could then be developed with a combination multi family residential and park use, as recommended in the Residential Development Component of the Comprehensive Plan.

The Municipal Services Building could be relocated at a future date, to a site at the northwest corner of Fort Sheridan.

2.3 Public Safety Building

The Public Safety Building is located at 255 W. Deerpath, and houses the police and fire services. The Building underwent major remodeling and renovation in 1995 - 1996, to meet the long term capital facility needs for the police and fire departments. The rehabilitated Public Safety Building should be adequate to provide for the current and future needs of Lake Forest.

The rehabilitated Public Safety Building should be adequate to provide for the current and future needs of Lake Forest.

2.4 Fire Station II (located at Telegraph - Everett intersection).

A new fire station was built as part of the Tax Increment Financing Redevelopment Plan for the West Business District. The fire station has been designed to complement the surrounding buildings in the Settler's Square Business District. The development of the parcels adjacent to the Fire Station, should ensure that the traffic and circulation created by the new use does not adversely impact the safety requirements of the Fire Station. The new Fire Station should satisfy the long term capital facility needs of the City. In case of additional demand in the future, the City in conjunction with the surrounding fire districts, could provide a new fire station in the area of the northwest or southeast quadrant of the City.

In case of additional demand in the future, the City in conjunction with the surrounding fire districts, could provide a new fire station in the area of the northwest or southeast quadrant of the City.

There should not be a need for construction of a new library facility on the west side of the City. However, if an additional library is required in the future, a City owned site in the vicinity of Settler's Square should be considered.

The recreation facilities should be evaluated on an ongoing basis and improved over the next 20 year period, to satisfy the increasing demands of a growing population.

2.5 Lake Forest Library

The Lake Forest library, established in 1898, was made possible by a gift from the family of Kersey Coates Reed. The library is associated with the North Suburban Library Systems which consists of 43 other libraries. In addition to a collection of books, journals, videos, cassettes and compact discs, the library has a extensive reference materials and special services including large print books and talking book program. Automated services include on-line public catalog, on-line search, and internet access.

There should not be a need for construction of a new library facility on the west side of the City. Future needs to service growth in population could be satisfied by funding new technology to allow for internet network connections and greater computer accessibility. However, if an additional library is required in the future, a City owned site in the vicinity of Settler's Square should be considered.

2.6 Recreation Center

The Recreation Department is a member of North Suburban Special Recreation Association, which provides recreation programs to adults and children with mental, physical and emotional disabilities. The recreation center offers several programmed activities to meet the needs of Lake Forest residents.

The recreation center is in the process of formulating an expansion plan to meet the existing and future needs of the community. The recreation facilities should be evaluated on an ongoing basis and improved over the next 20 year period to satisfy the increasing demands of a growing population.

March 1998

2.7 Train Stations

The existing train station located on Western Avenue and Deerpath has been renovated and restored. A new train station, located west of the railroad tracks between Everett and Conway Roads, was built in the fall of 1992. Both these facilities should adequately address the existing and future needs of the City.

The existing facilities should adequately address the existing and future needs of the City.

2.8 Masonic Lodge

The Masonic Lodge is located to the east of the McKinley and Westminster intersection. It has been proposed that this building be used for the Lake Forest - Lake Bluff Historic Society. The Masonic Lodge should be restored and renovated to accommodate the Society's activities through private funding.

The Masonic Lodge should be restored and renovated to accommodate the Lake Forest-Lake Bluff Historic Society's activities through private funding.

2.9 Gorton Community Center

The Gorton Community Center was founded in 1972, in the historic Edward Gorton School, to serve as a privately funded, not-for-profit organization affiliated with the City. The Center promotes community activities of public interest, which include classes, programs and cultural and civic events. Gorton also operates a children's drop-in center for part-time day care, leases space to non-profit tenants, and rents public rooms for meetings and special events. The Gorton Board of Directors has adopted a long range plan, master facilities plan, and capital fund raising plan for renovating the Center for improved programming facilities and to ensure compliance with the Americans with Disabilities Act. The Gorton Center is an asset to the community and should be maintained as such.

The Gorton Board of Directors has adopted a long range plan, master facilities plan, and capital fund raising plan for renovating the Center for improved programming facilities and to ensure compliance with the Americans with Disabilities Act.



3. PARKS AND RECREATION

In 1995, of the total area of The City of Lake Forest of 10,732.8 acres, 422.7 acres (approximately 4% of total area) was classified as park lands. Active recreation parks included 99.4 acres, with six neighborhood parks and one community park.

The Parks and Facilities Plan³ was developed by the Master Parks Plan Committee (consisting of members of School District 67, the Public Facilities Committee, the Recreation Board, City Council and City Staff) in consultation with Land Design Collaborative, Inc. The Plan concluded that the 1995 analysis of the existing park lands indicated a shortage of active recreation park land. In addition, the Plan evaluated each neighborhood park and the Deerpath Community Park relative to their existing facilities and programs. The findings of the study indicated that neighborhood parks in Lake Forest were functioning at a community level by accommodating recreation programs more typically found in community parks. Due to lack of space, these community programs exceeded the capacity of Deerpath Community Park (the City's only community park).

The community and neighborhood parks were defined as follows:

Community Parks: More programmed activities serving the community-at-large within a 2-4 mile radius, particularly for organized sporting events.

Neighborhood Parks: More spontaneous activities with limited programs aimed primarily at serving the neighborhoods with 1-1/2 mile radius.

Park Land Standards formulated and used by the Parks and Facilities Plan, as a basis for this analysis were:

A minimum of 7 acres of active recreation park space should be provided per 1,000 population. Of the 7 acres per 1,000 population, neighborhood parks should comprise 4 acres per 1,000 population, while community parks should consist of 3 acres per 1,000 people.

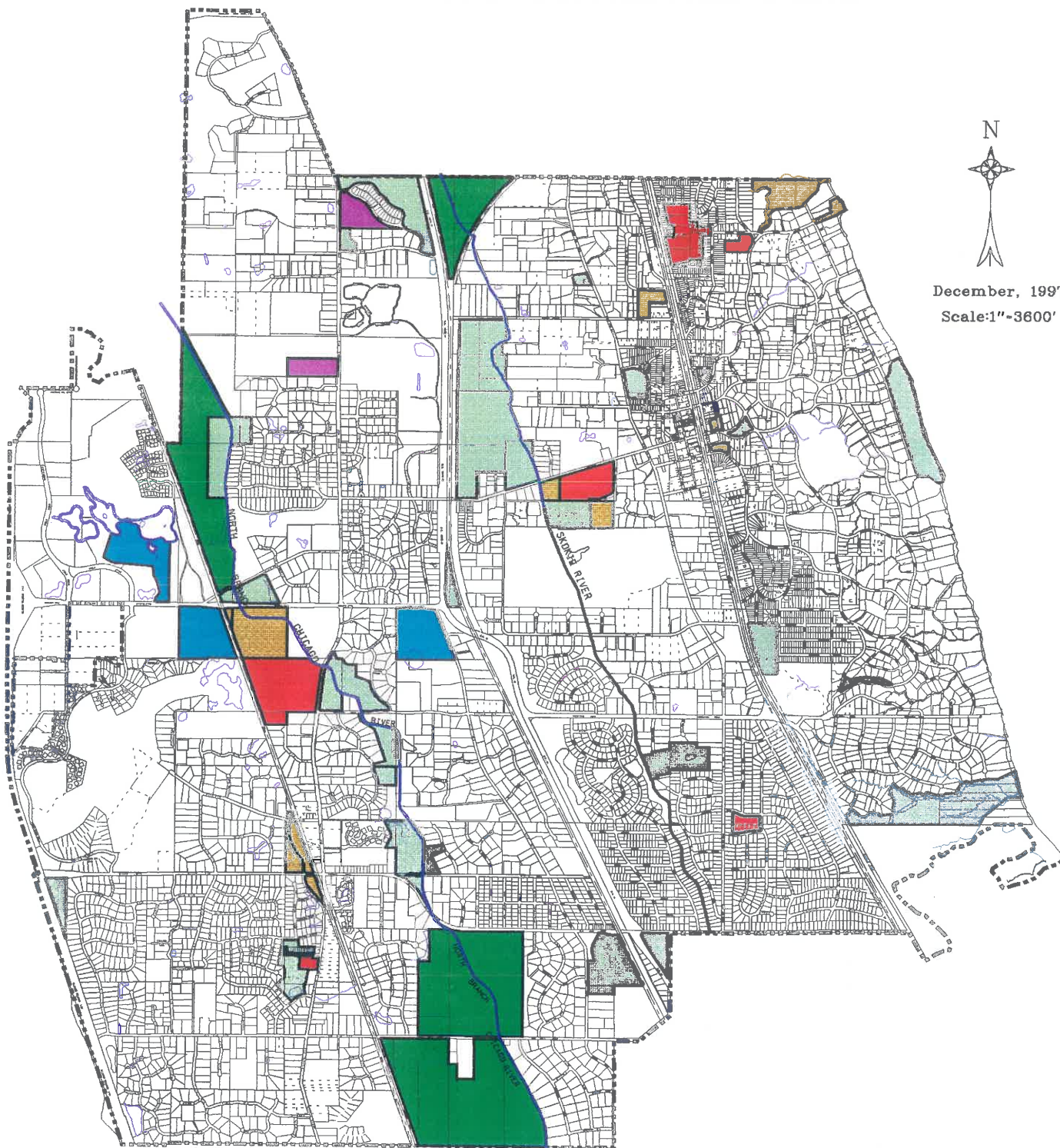
3.1 Recommendations

The Comprehensive Plan endorses the key recommendations

FIGURE 9.1 COMMUNITY FACILITIES PLAN



December, 1997
Scale: 1"=3600'









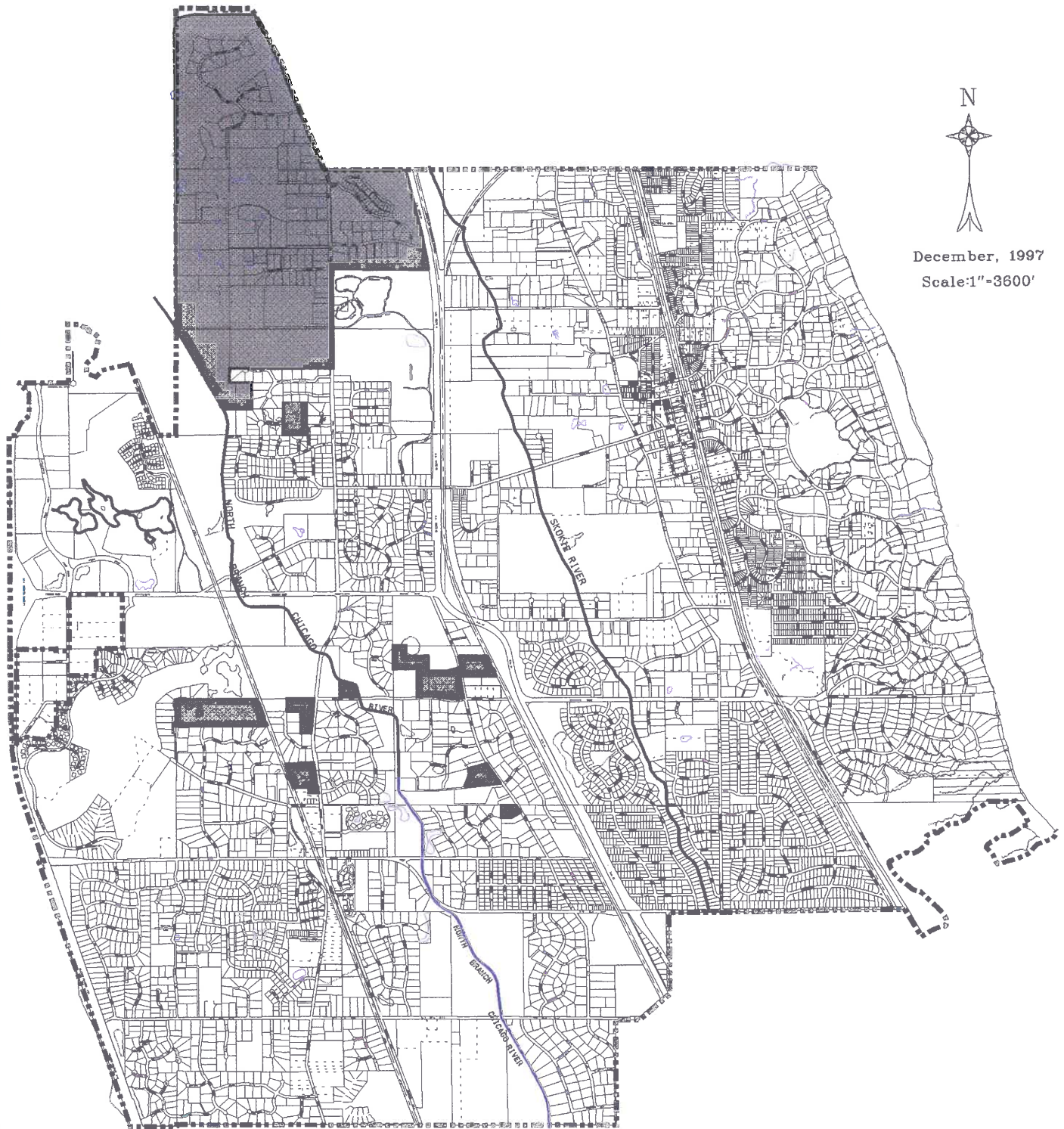
- | | |
|---|---|
|  PARKS & RECREATION/OPEN SPACE |  PUBLIC SCHOOLS |
|  POTENTIAL COMMUNITY PARK SITES |  PUBLIC FACILITIES |
|  POTENTIAL NEIGHBORHOOD PARK SITES |  FOREST PRESERVE |

FIGURE 9.2
AREAS WITHOUT SANITARY SEWER SYSTEM



December, 1997
Scale:1"-3600'

of the Parks and Facilities Plan which include existing park improvements, future park land needs, and short-term and long term actions. Please refer to figure 10.1.

3.1.1) Existing Park Improvements

i) Neighborhood Parks:

Currently, neighborhood park acreage is in balance with the population. However, when the total build-out population is reached, the northwest section will require a neighborhood park of approximately 15.2 acres.

Existing park facilities should be improved consistent with the recommendations of the Parks and Facilities Plan. The proposed improvements should enhance the quality of the current level of programming and should not be viewed as ways to increase programmed activities system wide. In addition, future programming of existing neighborhood parks should be minimized, if economically feasible, due to the negative impacts on adjacent neighborhoods.

ii) Community Parks:

The City has its greatest immediate and long term need for a community park. Adequate land should be acquired immediately, even if a staged build-out is required. Approximately 30 acres are needed to satisfy current demand, with an additional 10 acres required in the future.

The new community park should be improved as soon as possible with ballfields and other multi-purpose fields. New shelters and multi-purpose facilities can be provided in future stages of the development of the park.

Existing neighborhood park facilities should be improved consistent with the recommendations of the Master Parks and Facilities Plan.

The City has its greatest immediate and long term need for a community park. Adequate land should be acquired immediately, even if a staged build-out is required.

3.1.2) Specific Actions

Short term and long-term actions should be carried out consistent with the recommendations of the Comprehensive Parks and Facilities Plan.

4. UTILITIES

The utility systems plans are based on the land use patterns, the general topography, estimated future population, and the existing facilities in The City of Lake Forest.

4.1 Water Distribution System

The City of Lake Forest water utility system serves all residents in Lake Forest, and a limited number of customers outside Lake Forest.

The engineering firm of Alvord, Burdick and Howson prepared a "Report on Water Facilities" in 1980. This report was revised in 1996, and includes a detailed water facilities and distribution plan. The report will consider an existing service area of approximately 18 square miles and allows for expansion to 20 square miles into future annexation areas. In 1995, the service area consisted of The City of Lake Forest, the Toll Road Oasis, and its vicinity as served through the Lake County Public Works Water Department.

The Comprehensive Plan supports the findings and recommendations of this report. The maintenance and improvement of the water distribution system should be carried out consistent with the recommendations of the Water Facilities Report.

4.2 Sanitary Sewer Systems

The public sanitary sewer system should be maintained and expanded to satisfy existing and future needs of the residents of Lake Forest. All residential developments and commercial

users should be served by a public sanitary sewer system. Figure 9.2, depicts the residential developments that were connected to a septic system in 1995. These areas should be required to connect with a public sewer system at a future date as sewers become available.

4.3 Storm Water Drainage

The City of Lake Forest retained Baxter & Woodman, Inc. in 1991, to prepare a Storm Water Drainage Study⁴. The purpose of the study was to analyze and evaluate storm water drainage problems in the City and to investigate channel erosion conditions in the ravines. In addition, the study made recommendations regarding a multi-phase improvement program to alleviate stormwater flooding problems.

The Comprehensive Plan endorses the findings and recommendations of the study. Future improvements to the stormwater drainage system should be carried out in a manner consistent with the recommendations of this study.

¹ Clarion Associates, Inc.; *Analysis of the Economic and Fiscal Impact of Open Space Preservation In Comparison to Residential Development for Lake Forest, Illinois*; June 12, 1995.

² Dr. Kasarda; *Lake Forest District 67, Long Range Facilities Study Report*; November 16, 1993.

³ Comprehensive Parks and Facilities Plan, *Land Design Collaborative, Inc.*; October 1995.

⁴ Baxter & Woodman; *Storm Water Drainage Study*; October 1991.

APPENDIX

THE CITY OF LAKE FOREST

1998





CITY OF LAKE FOREST

Comprehensive Plan Amendment -- Route 60 Sub-Area

Approved by the Lake Forest City Council – June 4, 2001

INTRODUCTION

In July 2000, the City of Lake Forest initiated a comprehensive planning process to address the future development of the Route 60 Sub-Area, located on the west side of the City. This sub-area is bounded by:

- **North:** north edge of Conway Park
- **South:** all properties along south side of Route 60
- **West:** Tri-State Tollway (Interstate 94)
- **East:** Metra/Amtrak/Freight Tracks east of Tollway.

This amendment reflects locations for desired land uses and development ideas based on extensive input from the Plan Commission, City Council, property owners, and developers as well as from meetings and workshops with local businesses and the community. The recommendations highlight a variety of short-term and long-range opportunities to:

- *enhance the unique characteristics of the Sub-Area;*
- *preserve open space;*
- *develop cultural, recreational, and park facilities;*
- *decrease development density and mitigate future traffic demands;*
- *incorporate the Sub-Area into the larger physical and cultural setting of Lake Forest.*

LAND USE PLAN GOAL

Improve the Route 60 Sub-Area's land use mix, physical conditions, and overall quality of life by controlling development.

LAND USE PLAN OBJECTIVES

LAND USE:

- Reduce development density, increase open space, and designate land for short-term and long-range public uses.
- Link land uses using bike and pedestrian paths, open spaces and streets.

HOUSING PRODUCTS:

- Encourage development of a range of housing product types on sites designated in the Land Use Plan for residential development. Recognize that some housing products have less impact on infrastructure and public services, and effectively preserve open space.
- Encourage housing products that have limited availability in the City such as townhomes, row houses, duplexes, attached villas, and condominiums. As an alternative, single-family homes may be developed if designed in a manner that achieves the objectives of this Sub Area plan.

TRAFFIC & ACCESS:

- Minimize future traffic volumes.
- Improve traffic access and circulation, with particular attention paid to providing for circulation within and between the properties without requiring travel on Route 60.
- Leverage and build upon City efforts to address area traffic management, especially the Lake Forest Tollway oasis development concept and the need to expand the Route 60/Tollway interchange bridge. Lake Forest does not support the widening of Route 60 east of the Tollway, except as necessary in conjunction with the widening of the bridge.
- Provide for vehicular, bicycle and pedestrian access to and through the area such that existing and new residential neighborhoods are integrated.

AREA ENHANCEMENT:

- Enhance Route 60 as the western gateway into Lake Forest.
- Enhance Conway Park as a world-class corporate park.
- Enhance and preserve significant tree stands, wetlands, and water views.

GENERAL RECOMMENDATIONS

ROUTE 60 FRONTAGE:

Continue improving the frontage along both sides of the roadway (150 feet north/south of right-of-way) with landscaping, and other design features to create a greenway/gateway setting.

The landscaped greenway/gateway should extend along Route 60 from the Tollway to Waukegan Road. A comprehensive plan for this area shall be developed and all future development shall landscape their front 150 feet in accordance with said plan.

SUB-AREA TRAIL/PATH SYSTEM:

Establish a Sub-Area hiking/biking trail system that connects all properties within the study area and surrounding open space.

The system should have an east/west link across the tracks and a north/south link across Route 60, and include all existing sidewalk systems.

TRANSIT ACCESS:

Improve transit access for local employees and residents to reduce auto trips in the Sub-Area. The City's Transportation Committee's efforts to reduce traffic congestion should continue to be supported.

While a new Metra station within the Sub-Area does not appear feasible at this time, there may be long-range potential for such a facility as the greater Route 60 area continues to develop.

SITE RECOMMENDATIONS

The following are land use and development recommendations for each undeveloped site within the Route 60 study area that evolved from the planning process. The recommendations are long-range planning considerations that may or may not be consistent with existing zoning and annexation agreements.

Refer to the attached Land Use Plan for the location and context of each site.

SITE 1. (SWANSON-MILLER) **Residential**

Site should be annexed into the City based on a development plan which is consistent with the following uses:

- Moderate density low-rise residential with a range of housing product types that preserves significant tree stands, preserves the site's overall wooded character, and links to the future residential neighborhood to the east.
- Adaptive reuse of the Miller estate house.
- Professional office space intended for users in need of smaller spaces may also be considered if part of an acceptable plan for the full development of the site. Limited ancillary retail space within any professional office development is acceptable as a mixed component of the site. Any non-residential uses may only be located on the west edge of the site. Only Saunders Road can be used for access for non-residential uses.

SITE 2. (CONWAY FARMS) **Public Use or Residential**

Site should be developed with one or more of the following uses:

- Public use, developed publicly and/or privately, to meet future community recreation, open space, and athletic needs. If needed, the site should also be considered for the cultural/conference uses recommended for Sites 4, 5 and 6. The City should consider acquiring all or part of this parcel and/or entering into a public/ private partnership to ensure the property is developed consistent with the above noted uses.

Development of the site with public uses should preserve the large tree stand in the center of the parcel and link to the future residential neighborhood to the west via streets and trails. Public uses should be developed in a low-density campus setting with wide setbacks and large open areas around buildings that preserve the natural and scenic qualities of the site.

- Low to moderate density residential with a range of product types, that preserves the significant tree stand in the center of the parcel and contains both vehicular and pedestrian links to the future residential neighborhood to the west and existing neighborhood to the south.

SITE 3A. (LAKE FOREST ACADEMY) **Residential**

Site should be developed with single-family homes or townhomes as allowed under the annexation agreement with Lake Forest Academy. If the site is not developed with residential, it should remain as open space.

SITE 3B. (LAKE FOREST ACADEMY) **Institutional**

Site should be developed with academic or administrative buildings related to the operation of the Academy and not with corporate office/research buildings. If the site is not developed with Lake Forest Academy academic or administrative buildings, it should remain as open space.

SITES 4 & 5. (BUKER & MESSERVEY)**Civic Use or Residential**

The two sites should be developed jointly, either for civic or residential use. Development could be private or a joint public/private for certain non-residential uses. Any development should be low density with wide setbacks and large open areas that preserve the natural and scenic integrity of the sites. Development of this site should preserve significant tree stands as well as preserve public access to and views of the adjacent water features. If sites 3A, 4 and 5 are developed for residential, they should be done so as to create a united residential neighborhood.

If developed for civic use, development might include, but not be limited to, one or more of the following:

- open space
- performing arts center (i.e. theater and music groups)
- community center
- community educational facility
- cultural/museum facility
- outdoor performing space
- special gardens (i.e. sculpture and reading gardens)
- moderate-sized conference center with shared meeting rooms for community/businesses
- small hotel/inn
- day care facility
- athletic/recreation/park uses

The combined properties could also be developed with moderate density residential with a range of price points and product types. Any residential development must provide for main access from Academy Drive, with a planned link to a possible future entrance to residential development on Site 3A across Academy Drive to the east.

SITE 6. (FITZMORRIS)**Public Use**

Site should be developed privately or in a joint public/private partnership for civic use that might include one or more of the following uses, developed in a low-density campus setting with wide setbacks and large open areas around buildings that preserve the natural and scenic integrity of the site:

- open space
- performing arts center (i.e. theater and music groups)
- community center
- community educational facility
- cultural/museum facility
- outdoor performing space
- special gardens (i.e. sculpture and reading gardens)
- moderate-sized conference center with shared meeting rooms for community/businesses
- small hotel/inn
- day care facility
- athletic/recreation/park uses

SITE 7 & 8. (FIELD & ABBOTT)**Corporate**

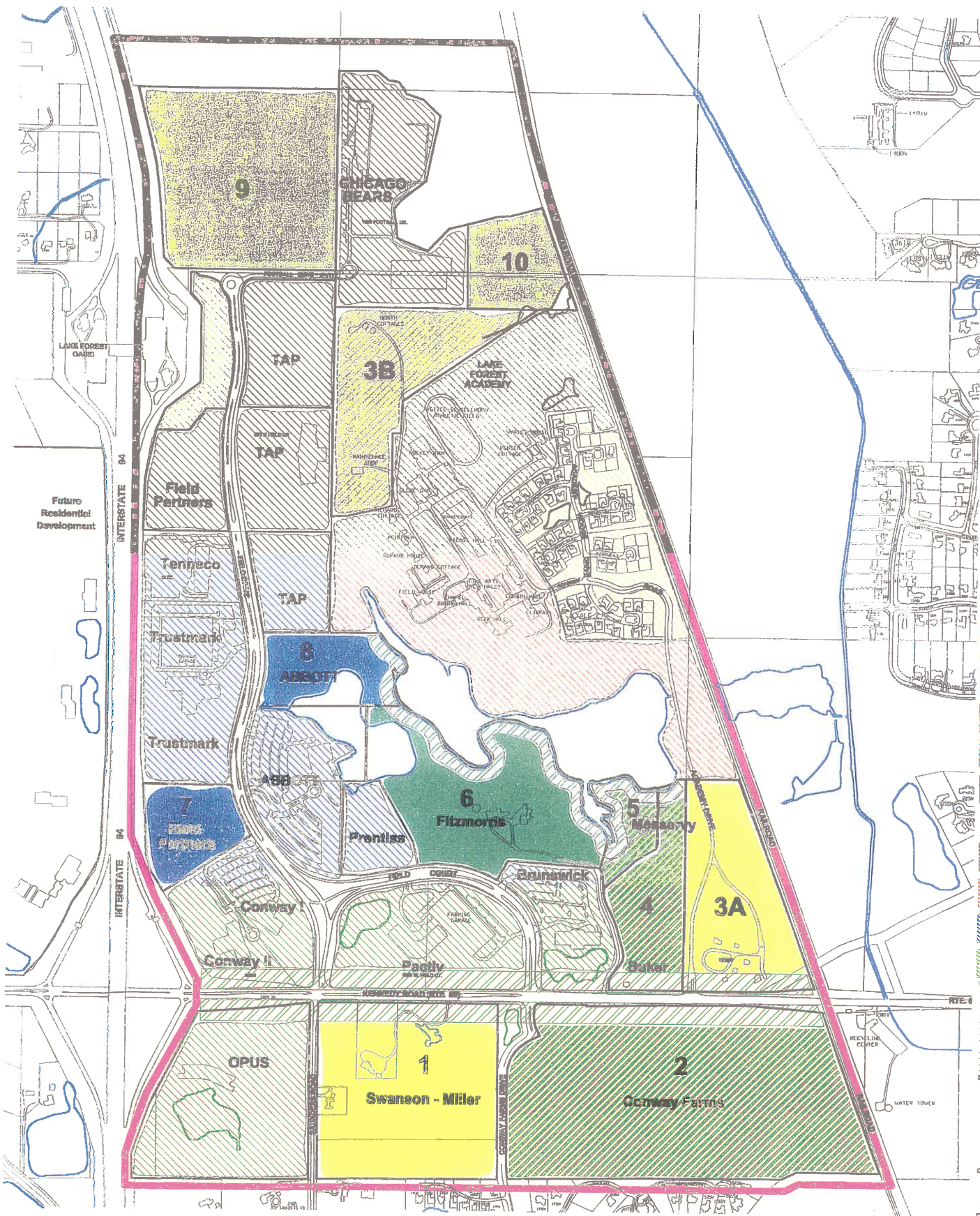
Sites should be developed with corporate uses, possibly including a small hotel/inn, conference center, and/or day care center. Site 8, the Abbott site, should be planned to include a 100-foot public access setback along the lake and an east/west public access path of not less than 25 feet for a path/trail connection to Field Drive.

SITE 9. (DALITCH)**Open Space**

Site should be preserved as open space.

SITE 10. (CHICAGO BEARS East Parcel)**Open Space**

Site should be preserved as open space.



ACKNOWLEDGEMENTS

The City of Lake Forest appreciates the efforts and hard work of the numerous residents, staff, and other bicycle enthusiasts who participated in the creation of the Bicycle Master Plan. The energy, creativity and thoughtfulness of the public was integral to the planning process.

In particular, the following residents, staff, and other agency members participated regularly in the development of the Plan.

CITY OF LAKE FOREST CITY COUNCIL

RESIDENT FOCUS GROUP

CITY OF LAKE FOREST BOARDS AND COMMISSIONS

- Park and Recreation Board
- Plan Commission

PARTNER AGENCIES

Lake County Department of Transportation

Village of Lake Bluff

Lake Forest Open Lands Association

Village of Lake Bluff

CITY OF LAKE FOREST PROJECT TEAM

Community Development

Public Works

Parks and Recreation

Public Safety

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JUNE 2013



FIGURE 2: KEY OBSERVATIONS

INFRASTRUCTURE

The residential streets in Lake Forest generally have a low traffic volume and rank high on the Bicycle Level of Service. Lake Forest has two excellent and well-used north-south bike trails but is lacking in east and west connections. There are several key streets with higher traffic counts and speeds that could benefit from improvement to increase compatibility with bicycling.



Existing Asset - Skokie Valley Bike Path along a ComEd easement



Low traffic residential streets are a good choice for bicyclists

PERCEIVED SAFETY

Lake Forest has a low number of reported bike crashes. However, limited visibility and unpredictable behavior of cyclists are identified hazards in the community. Improving conditions to encourage bicycling in the community is desired. Road maintenance was identified as important to encouraging residents to ride through Lake Forest. Poor pavement conditions reduce the bicycle level of service and put cyclists and motorists at risk.



Need identified to improve visibility of cyclists in Central Business District



Poor road conditions become hazards for a bicyclist

WAY-FINDING

Lake Forest has numerous local destinations accessible by bike. To encourage a mode shift for short trips, an identified network and signage will help direct cyclists around town. Way-finding signs can also benefit local businesses and promote Lake Forest as a destination for visitors traveling on bike.



Signage could be improved to help designate bicycle routes



Connections to existing trails are difficult to follow

Goals & Objectives

GOAL 1 - AWARENESS

To generate awareness and acceptance of bicycling in Lake Forest.



- Adopt the Bicycle Master Plan as the guiding document relating to bicycle improvements in Lake Forest.
- Educate bicyclists and motorists on how to “share the road”.
- Through the above efforts, become recognized as a “Bicycle Friendly Community” by the League of American Bicyclists.

GOAL 2 - CONNECTIVITY

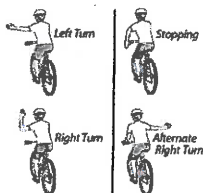
To connect major destinations within Lake Forest and facilitate access to the established regional network.



- Implement on-road bicycle facility improvements and signed bicycle routes in Lake Forest.
- Consider bicycle connections to regional trails and local destinations as part of new development plans and neighborhoods in Lake Forest.
- Collaborate with regional partners to evaluate future bicycle facilities on state routes within the city limits of Lake Forest and connections to surrounding communities.
- Facilitate the creation of “Bike to Metra” maps and brochures to promote bicycling in Lake Forest as a valid mode of transportation for people visiting and working in Lake Forest.

GOAL 3 - SAFETY

To provide safe transportation options for people of all ages and physical abilities in Lake Forest.



- Achieve a Bicycle Level of Service rating of C or higher on residential streets.
- Create a safe environment for all users of the roadways and trails.
- Provide safe east-west bicycle connections in Lake Forest.
- Maintain a low number of bicycle crashes and injuries for all ages.
- Enforce traffic rules for bicyclists and motorists in accordance with Lake Forest Police standards and practices.
- Provide safe riding instruction through local community organizations.

Planning Process

Based on input received at Ward meetings in the first quarter of 2011, the City Council directed staff to facilitate and prepare a Bicycle Master Plan for Lake Forest. In an effort to pro-actively identify safe bike routes within the community and explore connections to regional bike trails, the development of a Bicycle Master Plan is the first phase of a multi-phased project. Recognizing that bicycling is not confined to the city limits, and consistent with ongoing efforts to share resources with neighboring communities, the City of Lake Forest coordinated efforts on the Bicycle Master Plan with the Village of Lake Bluff. The planning phase included community input through a public process. Together with Lake Bluff, the public planning process was an opportunity for members of both communities to come together to discuss bicycling within and through the two communities and discuss ways to improve bicycle safety and awareness.

PUBLIC INPUT

In order to gauge the level of bicycling that occurs in Lake Forest and Lake Bluff and to gain a better understanding of what challenges and issues are perceived by residents, electronic community surveys were conducted at the beginning of the process. Residents and non-residents who bike through or to Lake Forest and Lake Bluff were encouraged to participate in the surveys. Between August and November, 2011, more than 350 residents and cyclists in Lake Forest responded to the online surveys. A summary of the survey results is included as part of the Appendix to this report.

Over 60 residents of Lake Forest and Lake Bluff participated in two public workshops to assist staff in gathering data for the plan. Participants worked together at tables of

5-6 people to identify key local destinations, desired regional connections, hazards and dream routes for bicycling in Lake Forest and Lake Bluff. The information gathered at the public workshops was incorporated into this plan and served as the impetus for evaluating key routes within the community for appropriateness and bicycle compatibility.

Input was also received from the Lake Forest Parks and Recreation Board and a Public Open-House session where residents and bike enthusiasts came together to review the draft plan and provide comments on the Bicycle Master Plan. Key observations from the public workshops are identified in Figure 2.



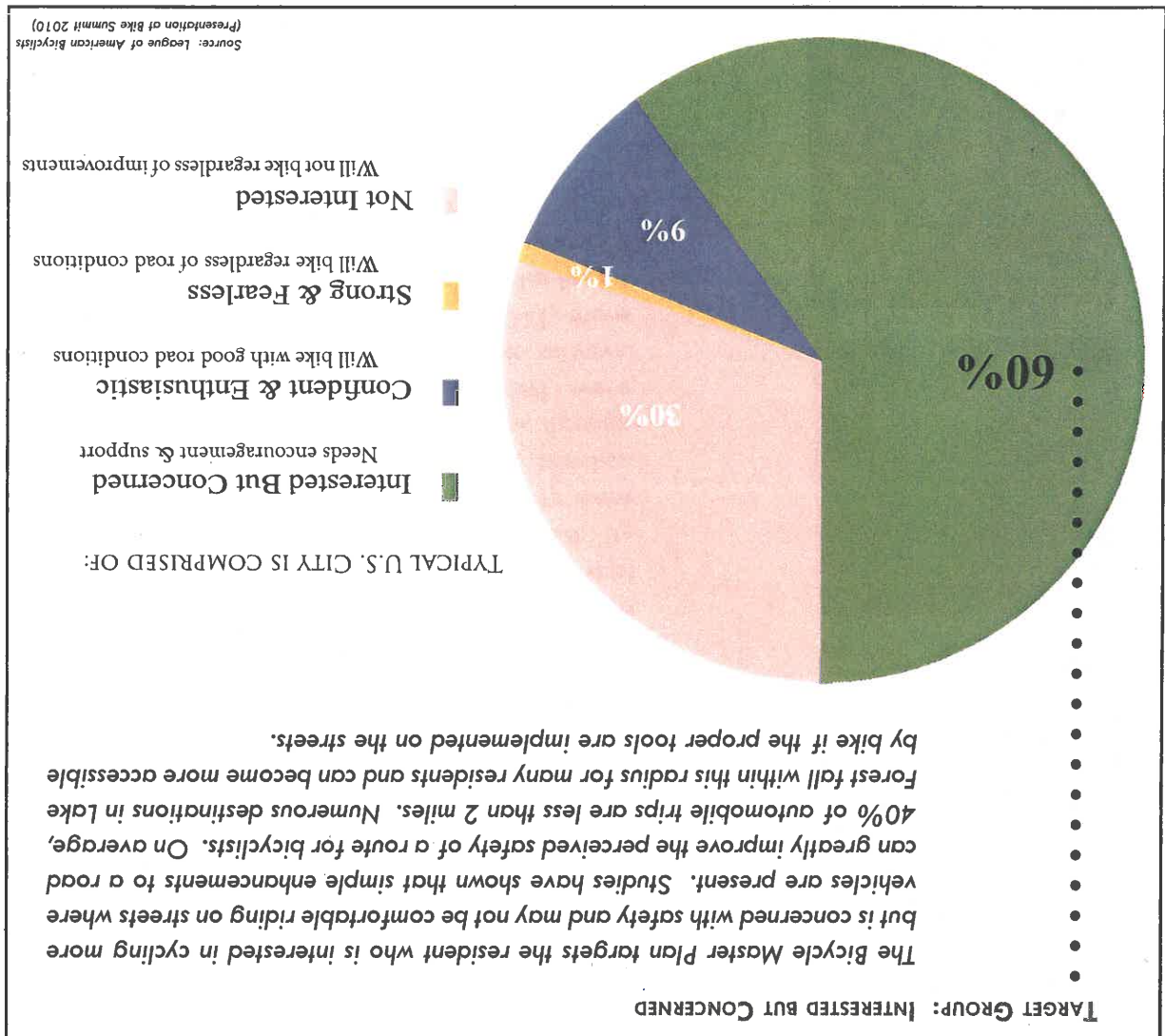
City of Lake Forest Public Workshop,
January 30, 2012

Purpose

The purpose of the Lake Forest Bicycle Master Plan is to provide a clear framework and establish priorities for future bicycle facilities as part of an update to the Transportation section of the City's Comprehensive Plan. The Bicycle Master Plan strives to provide safe connectivity throughout Lake Forest for the "casual adult rider" to encourage people to travel by bike more and drive less.

Realization of the plan will position Lake Forest to become a bicycle friendly community and increase bicycle use in Lake Forest by creating a network of bike routes and trails within the community, facilitating connections to regional trails and providing essential infrastructure to support bicycling such as installing ample bicycle parking near key destinations and utilizing pavement markings on existing roads to direct cyclists and motorists.

FIGURE 1: TYPICAL CYCLIST CLASSIFICATION



GOAL 4 - HEALTH & WELLNESS

To promote bicycling as a healthy, safe, convenient and enjoyable means of transportation and recreation.



- Support healthy lifestyles and active transportation by promoting a bicycle friendly community.
- Encourage use of the bike network for utilitarian and recreational purposes.
- Provide basic information to the public regarding bicycle opportunities and the health benefits of increased physical activity.

GOAL 5 - ENVIRONMENT

To protect the environment for the long term by promoting bicycling as a viable and sustainable transportation choice in Lake Forest.



- Install new bike parking racks in Lake Forest at key destinations.
- Reduce car emissions in Lake Forest by encouraging short trips of less than 2 miles to be completed by bicycle.
- Provide marked routes for bicyclists to establish a safe and sustainable transportation option to get to key destinations.
- Identify and encourage adoption of policies that require future development and capital projects to include bicycle connections when possible.
- Enhance public transportation hubs at the East and West Lake Forest train stations with safe bicycling thoroughfares and directional signage to key destinations.



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FRAMEWORK: GEARING UP FOR BIKES

- Existing Conditions
- Analysis of Public Input
- Proposed Bicycle Network
- Toolbox of Bicycle Facilities
- Application of Bicycle Facilities



Existing Conditions

RECREATIONAL TRAILS

The City of Lake Forest is fortunate to have two major, paved north-south bike trails within the City limits as well as an unpaved recreational trail through the Middlefork Savanna. The North Shore Bike Path is the primary east-west connection for the surrounding area but becomes a gravel trail west of Waukegan Road. Existing bike paths and designated bicycle routes are shown in Figure 3.

The Robert McClory Bike Path is located adjacent to the Union Pacific North Line Metra tracks on the east side of Lake Forest. This path enters Lake Forest at Old Elm Road to the south and continues north, through the Lake Forest Central Business District, past Park Avenue into Lake Bluff and on to Wisconsin. The Robert McClory Bike Path has 12 access points in Lake Forest.

The Skokie Valley Bike Path is located within a ComEd easement along Highway 41, a major limited access roadway that bisects the City of Lake Forest. The path enters Lake Forest near Old Mill Road and continues north into Lake Bluff. The Skokie Valley Bike Path has 4 access points in Lake Forest and 1 in Lake Bluff at Route 176. When compared to the Robert McClory Bike Path in Lake Forest, access to the Skokie Valley Bike Path is limited.

The Middlefork Savanna Trail is a 4.5 mile, packed gravel trail through the Middlefork Savanna. Access points to this trail can be found at Elawa Farm, a local destination, and from the residential streets in the Newells Reserve Subdivision and Route 176.

The North Shore Bike Path runs parallel to Route 176 on the south side of the road. The Middlefork Savanna Trail, Skokie Valley and Robert McClory Bike Paths connect to



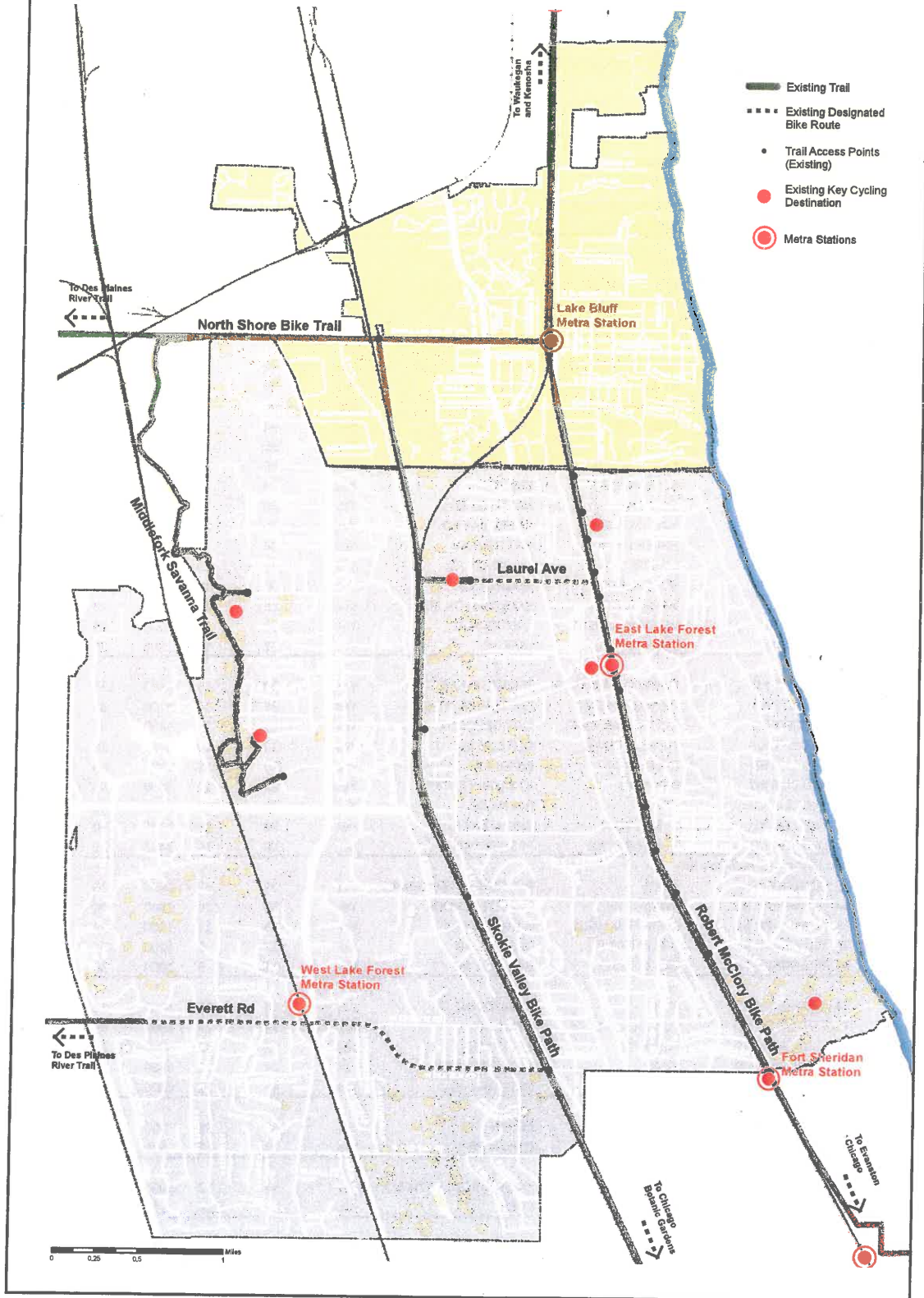
Robert McClory Bike Path in Lake Forest showing the wooded character and amenities along the path. Routine maintenance is needed to address overgrown bushes and trail hazards.

this trail. The North Shore Bike Path further connects Lake Forest with cities located to the west as well as to the Des Plaines River Trail, a popular recreational bike trail in the region.

ROADWAYS

In general, consistent with resident observations from the survey, the smaller neighborhood streets appear to be suitable for bicycling for the majority of bicyclists; however, well-marked on-road shared bike facilities are presently non-existent in Lake Forest. An evaluation of the existing road network was completed by City staff including several suggested routes generated from public input and the Resident Focus Group. The evaluation summarized in Figure 4, was completed using the Bicycle Level of Service (BLOS) tool developed by the League of Illinois Bicyclists (LIB). The BLOS tool uses average daily traffic count, road widths, pavement conditions, speed limits and other

FIGURE 3: EXISTING BIKE TRAILS AND DESIGNATED ROUTES



Existing Conditions

road conditions to determine the suitability of a roadway for bicycling. Routes yielding a score of "B" or "C" are generally comfortable for casual adult bike riders. Routes with lower

ratings tend to have faster speeds and higher traffic volume. While bicycle use is permitted on these roads by law, casual riders tend to shy away from using those routes.

FIGURE 4: EXISTING BICYCLE LEVEL OF SERVICE ON SELECTED ROUTES

Street Segment Name/ID	Street Evaluated	From Intersection	To Intersection	Curb?	Width	Outside Lane	ADT	Speed	Percent Residential Parking Street?	BLOS Rating
Onwentsia-Ahwanee										
	1 AHWAHNEE LN	DEERPATH	AHWANEE RD	Yes	22	11	200	25	0 Y	B
	2 AHWAHNEE RD	AHWANEE LN	MICHGAMME LN	No	22	11	900	25	0 Y	B
	3 AHWAHNEE RD	MICHGAMME LN	ONWENTSIA RD	No	20	10	900	25	0 Y	C
	4 ONWENTSIA RD	AHWANEE RD	WESTERN AV	Yes	22	11	900	25	0 Y	B
Conway Farms										
	5 CONWAY FARMS DR	RT 60	880 FT S. RT 60	Yes	50	12	500	25	0 N	B
	6 CONWAY FARMS DR	880 FT S. RT 60	WOODWARD CT	Yes	22	11	500	25	0 Y	B
	7 CONWAY FARMS DR	WOODWARD CT	SALISBURY LN	Yes	22	11	300	25	0 Y	B
	8 CONWAY FARMS DR	SALISBURY LN	EVERETT RD	Yes	24	12	300	25	0 Y	B
Deerpath (Middlefork Savanna to Beach)										
	9 DEERPATH	MIDDLEFORK SAV.	RT 43	Yes	20	10	400	25	0 Y	B
	10 DEERPATH	RT 43	KING MUIR RD	Yes	30	10	17000	25	0 Y	D
	11 DEERPATH	KING MUIR RD	SUSSEX LN	Yes	30	15	17000	25	0 Y	D
	12 DEERPATH	SUSSEX LN	DEERPATH	Yes	30	10	17000	25	0 Y	D
	13 DEERPATH	RT 41	AHWANEE LN	Yes	35	12	17000	35	0 Y	D
	14 DEERPATH	AHWANEE LN	AHWANEE RD	Yes	30	15	17000	35	0 Y	D
	15 DEERPATH	AHWANEE RD	BRIDGE	Yes	34	17	17000	35	0 Y	D
	16 DEERPATH	GOLF LN	HASTINGS RD	Yes	30	15	17000	35	0 N	D
	17 DEERPATH	HASTINGS RD	GREEN BAY RD	Yes	30	11	17000	35	0 Y	D
	18 DEERPATH	GREEN BAY RD	WESTERN AV	Yes	34	11	17000	35	100 N	D
	19 DEERPATH	WESTERN AV	MC KINLEY RD	Yes	36	13	8000	35	0 N	D
	20 DEERPATH	MC KINLEY RD	WALNUT RD	Yes	30	10	1000	25	100 N	D
	21 DEERPATH	WALNUT RD	WASHINGTON RD	Yes	25	12	1000	25	0 Y	B
	22 DEERPATH	WASHINGTON RD	SHERIDAN RD	Yes	30	11	1000	25	100 Y	C
	23 DEERPATH	SHERIDAN RD	LAKE RD	Yes	22	11	1000	25	0 Y	C
Everett-Old Elm										
	24 EVERETT RD	CONWAY FARMS DR	TELEGRAPH RD	Yes	30	15	4400	35	0 Y	C
	25 EVERETT RD	TELEGRAPH RD	R/R TRACKS. RT 43	Yes	35	12	4400	35	0 N	D
	26 EVERETT RD	R/R TRACKS. RT 43	EVERGREEN DR	Yes	35	12	4400	35	0 N	D
	27 EVERETT RD	EVERGREEN DR	OLD ELM RD	Yes	30	10	4400	35	0 Y	D
	28 OLD ELM RD	EVERETT RD	RIDGE RD	Yes	30	15	3400	30	0 Y	C
	29 OLD ELM RD	RIDGE RD	RT 41/RR TRACKS	Yes	28	14	3400	30	0 Y	C
	30 OLD ELM RD	RT 41	BUENA RD	Yes	36	12	3400	30	0 Y	C
	31 OLD ELM RD	BUENA RD N	GREEN BAY RD	Yes	28	14	3400	30	0 Y	C
	32 OLD ELM RD	GREEN BAY RD	FT SHERIDAN	No	20	10	3400	30	0 Y	D
Telegraph Rd (West Train Station to Half Day Rd)										
	33 CONWAY RD	RT 43	R/R TRACKS/TELEGRAPH	Yes	35	12	1400	25	0 N	C
	34 TELEGRAPH RD	EVERETT RD	EVERETT SCHOOL	Yes	30	10	1500	30	0 Y	C
	35 TELEGRAPH RD	EVERETT SCHOOL	WHITE OAK RD	No	33	12	1500	30	0 Y	C
	36 TELEGRAPH RD	WHITE OAK RD	OLD MILL RD	No	18	9	1400	30	0 Y	C
	37 TELEGRAPH RD	OLD MILL RD	HALF DAY RD	No	18	9	1000	30	0 Y	C
Westleigh										
	38 WESTLEIGH RD	RT 43	YORKTOWNE LN	Yes	26	13	1000	35	0 Y	C
	39 WESTLEIGH RD	YORKTOWNE LN	RIDGE RD	No	24	12	1000	35	0 Y	B
	40 WESTLEIGH RD	RIDGE RD	R/R TRACKS	Yes	26	13	1000	35	0 Y	B
	41 WESTLEIGH RD	RT 41	GREEN BAY RD	Yes	24	12	4600	25	0 Y	B
	42 WESTLEIGH RD	GREEN BAY RD	SHERIDAN RD	Yes	45	12	4600	25	0 Y	C
Middlefork										
	43 MIDDLEFORK DR	RT 43	ACORN TR	Yes	50	25	500	25	0 Y	A
	44 MIDDLEFORK DR	ACORN TR	JENSEN DR	Yes	26	13	500	25	0 Y	B
Field Drive-Saunders										
	45 FIELD DRIVE	RT 60	ROUNDAABOUT/COM SER	Yes	56	12	5000	30	0 N	C
	46 SAUNDERS RD	CONWAY FARMS DR	RT 60	No	21	10.5	200	30	0 Y	B

Bicycle Level of Service (BLOS) rating was determined based on the methodology developed by the League of Illinois Bicyclists using data compiled by the City of Lake Forest for road width, average daily travel (ADT), pavement condition, heavy vehicle traffic, on-street parking and posted speed limit. The rating ranges from A-F with "A" being the highest and attributed to roads with extremely low traffic count to "F", the lowest rating reserved for roads with little to no compatibility for bicycles.

BARRIERS & CHALLENGES

A major observation from the survey and public input sessions is the lack of a safe east-west connection in Lake Forest. Major barriers to travelling east-west by bicycle include HWY 41, railroads, waterways, and ravines. Very few City roads traverse the entire width of the City from east to west. Those roads that do provide access across the city (Deerpath, Westleigh Rd, Old Elm Rd and Everett Rd) have unique challenges given the wide intersections at major roadways and heavy vehicular traffic.



Existing barrier along the Middlefork Savanna Trail. An informal bike path exists on either side of the tracks with no safe or legal crossing.



Bridge over Woodland Road provides a safe crossing along the McClory Bike Path.

SIGNAGE

There is no cohesive signage plan in Lake Forest pertaining to bicycling. Existing signs are sporadic and not easy to understand. Signage plays a key role in wayfinding and bringing attention to bicyclists on the roadways.

TYPES OF USERS

The type of user, defined by skill, comfort level and experience, varies in Lake Forest from experienced team riders to casual adult riders to children. Some riders are more comfortable navigating busy streets and may not require additional accommodations on the roadway in order to travel by bike. Other riders have less experience and need more encouragement and direction in order to feel comfortable on the roads. Children may appear confident on bikes, but lack the traffic training, experience and sense of older adult riders and should continue to use sidewalk connections throughout the community.

The City of Lake Forest recognizes that the type of roadway and proposed enhancement will affect the type of cyclist and level of use a particular route will attract.

- Facilities for bicyclists should be planned to accommodate a connected network for all users.
- Sidewalk connections should be provided on routes where children and pedestrians are present.



Wayfinding signage could help identify key destinations such as the Open Lands Skokie Valley Nature Preserve.

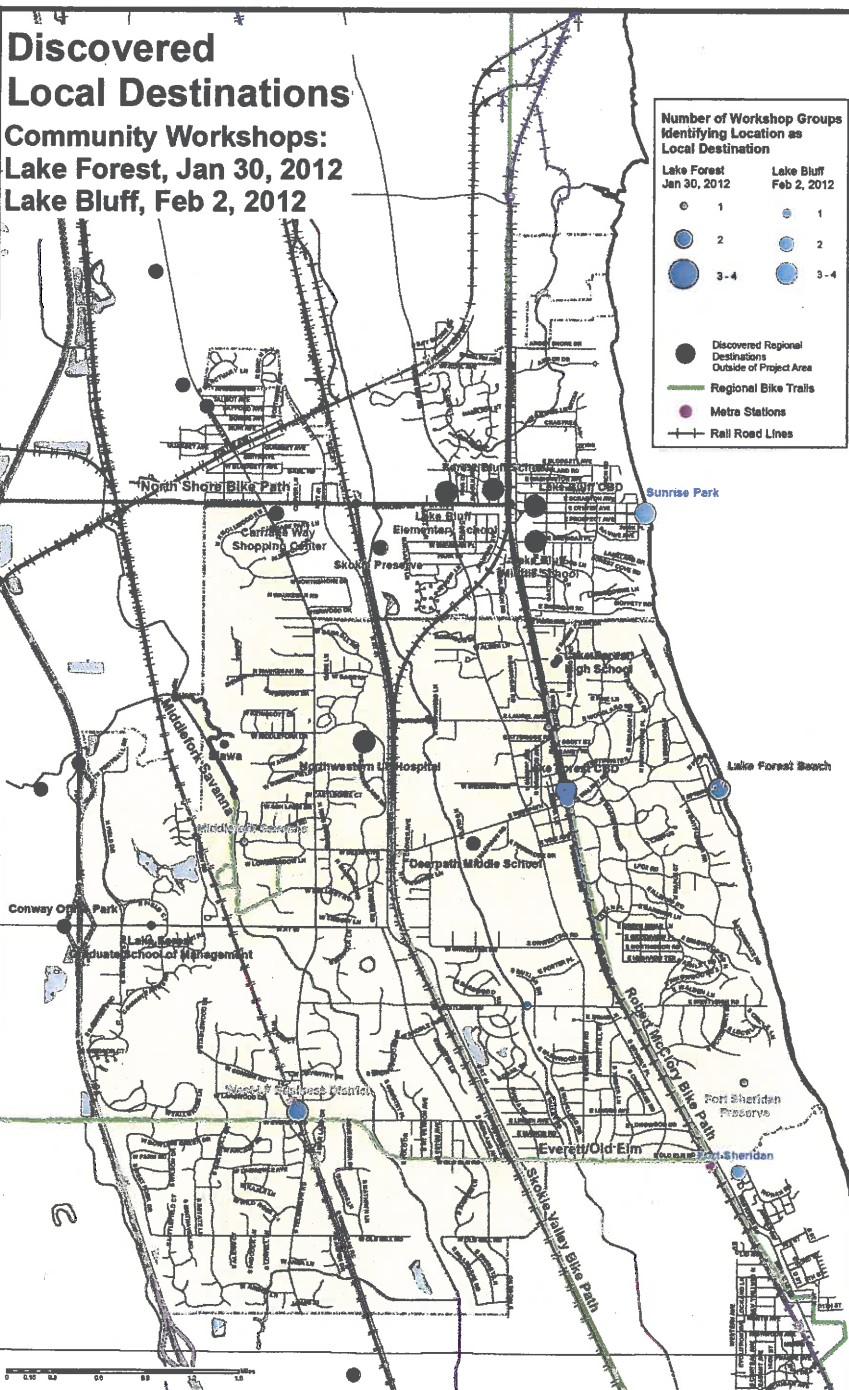
Analysis of Public Input

A public workshop was held in Lake Forest to identify local destinations, regional connections, and local hazards for cyclists in Lake Forest. The information gathered at the workshop and from survey data collected at the beginning of the planning process was used to develop the proposed bike network in

an effort to create a Bike Friendly Community for Lake Forest.

Figure 5 highlights the key local destinations in Lake Forest and Lake Bluff based on the public input. The Metra stations, Forest Park and Beach and the Conway Office Park were all called out as important destinations.

FIGURE 5:



SURVEY SAYS...

80%

80% of cyclists in Lake Forest stated that they ride for health and recreational purposes. Building a bike network will encourage more utilitarian trips to be completed by bike.

north and west are desired. The information collected at the public workshops was consistent with the survey data collected at the beginning of the process.

Discovered Regional Connections

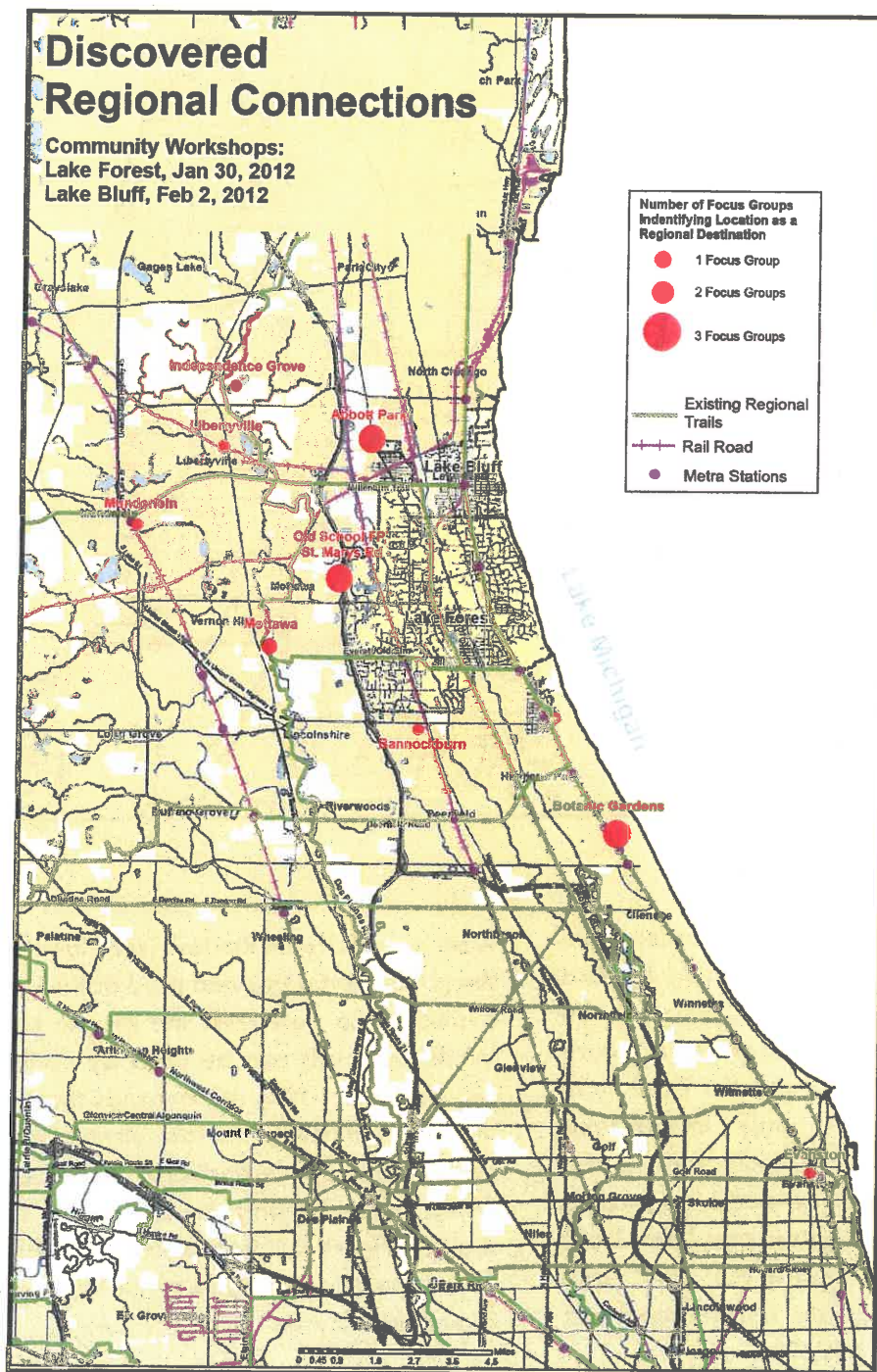
**Number of Focus Groups
Identifying Location as a
Regional Destination**

- 1 Focus Group
- 2 Focus Groups
- 3 Focus Groups

Existing Regional
Trails

Rail Road

Metra Stations

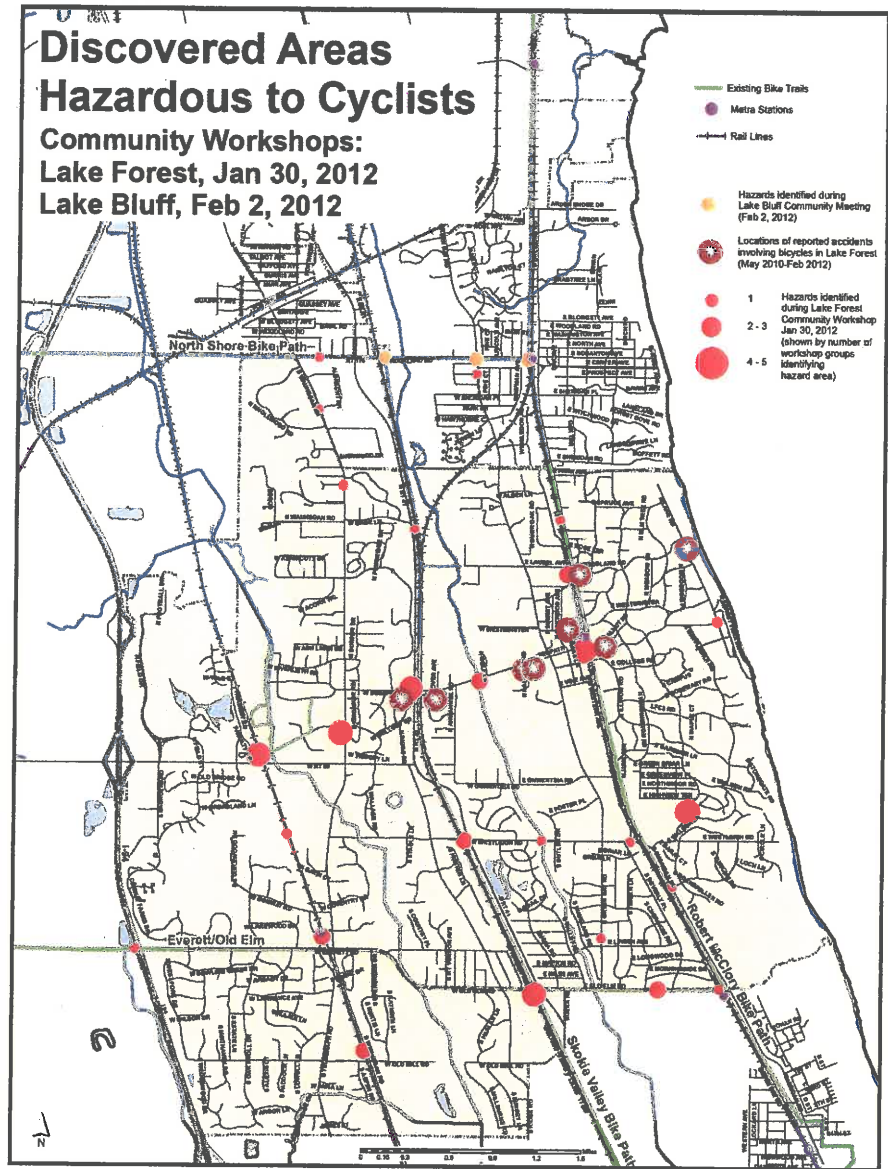


SURVEY SAYS...

85% of respondents

85% of respondents indicated that it is important that bike routes connect Lake Forest to destinations beyond the city limits.

FIGURE 7:



SURVEY SAYS...

50%

Over 50% of cyclists would be encouraged to bike more if pavement markings and signage were installed in Lake Forest.

An overlay of reported bike crashes from the past five years and identified hazard areas called out by participants at the public workshops are represented in Figure 7. Based on survey data and the input from the workshops, crossing busy intersections and conflicts with vehicles while sharing the road were key issues stressed regarding bicycle safety in Lake Forest and Lake Bluff. Education on how to “share the road” and proper bicycling etiquette will be important moving forward with this plan.

A series of “Dream Routes” were identified at the public workshops and used as the basis for evaluation to determine the bicycle network. While all roads can be used by cyclists, the Bicycle Master Plan recommends those routes that bypass busy, narrow streets and still connect to key destinations. Looking at a 2-mile radius around the two Metra stations shown in Figure 8, it is clear how bikeable Lake Forest could be with some minor improvements to support bicycles on the roadways.

Where can you bike in 15 Minutes?

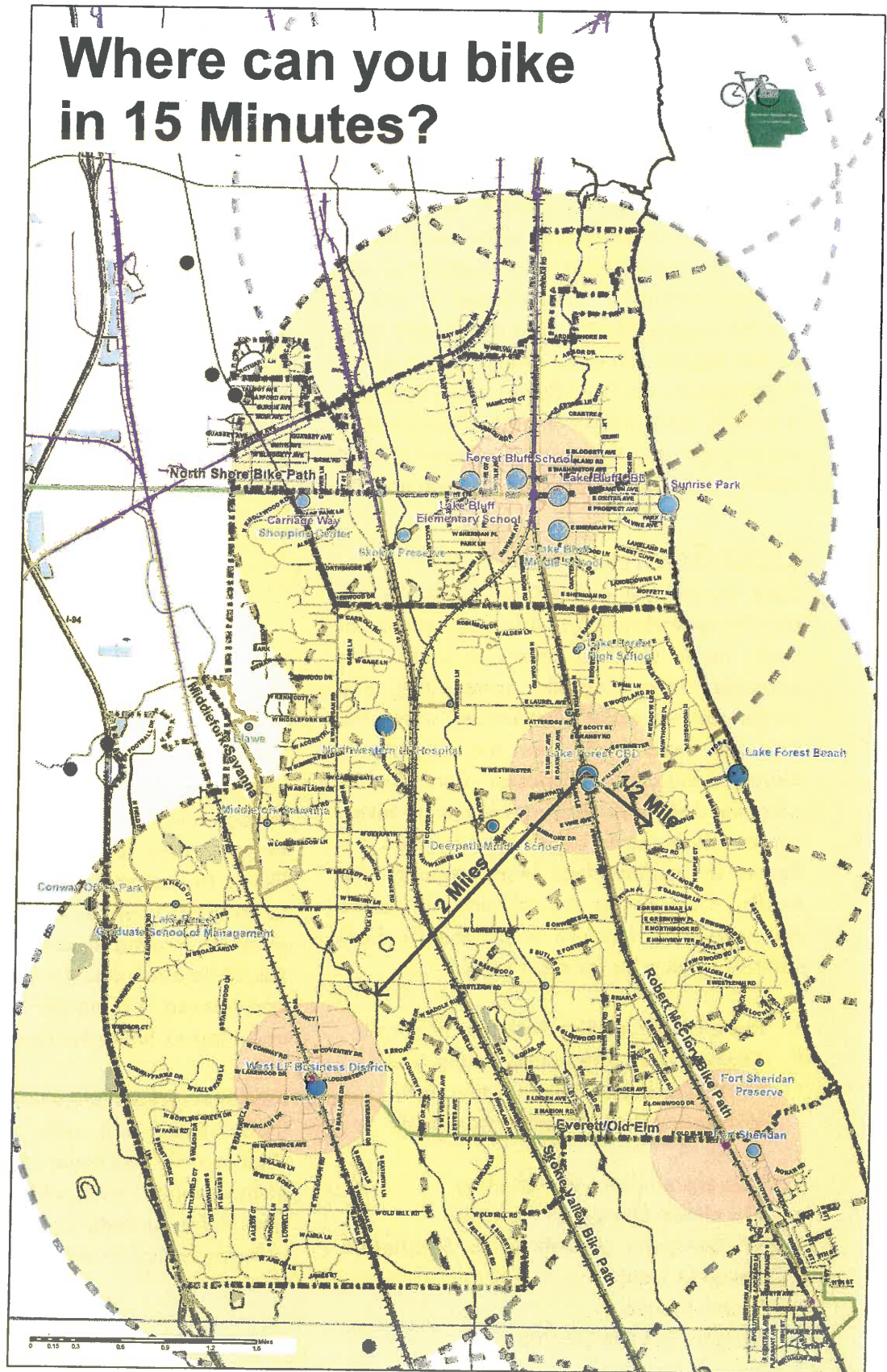


FIGURE 8

An average bicyclist can cycle 2 miles in 15 minutes. Looking at Lake Forest and Lake Bluff with this lens offers a glimpse into the possibilities for a bicycle friendly community.

Proposed Bicycle Network

The proposed Bicycle Network in Figure 9 identifies Core Routes and Branch Connections that facilitate movement through the community on bike. In order to improve the comfort level for cyclists on the identified routes, bicycle facilities can be installed to improve the Bicycle Level of Service (BLOS). Core Routes and Branch Connections were determined based on public input and analysis of the existing roadways. An example of how to use the Bicycle Master Plan is included later in this report. Priority should be given to improvements on Core Routes when feasible. A Priority Table, based on ease of completion, importance to the bicycle network and upcoming projects is included in Appendix D.

CORE ROUTES

Core Routes are defined as critical to the bicycle network and provide connections not easily made on other streets or paths. For example, the existing bike paths within Lake Forest connect major destinations within the City and beyond and form the core of the Bicycle Network. Proposed Core Routes accommodate east-west movement on bikes. Improvements should be planned for the Core Routes to accommodate more regular bike traffic. Core Routes are utilitarian in nature and serve to support a mode-shift from vehicles to bicycles for short trips.

- Robert McClory Bike Path (existing trail)
- Skokie Valley Bike Path (existing trail)
- North Shore Bike Path (existing trail)
- Waukegan Road (existing side-path)
- Rt 60
- E Deerpath (Lake to McKinley)
- Ahwahnee-Onwentsia Corridor
- W. Deerpath (Ahwahnee to Middlefork Savanna Trail)
- Laurel Avenue
- Everett/Old Elm Corridor

BRANCH CONNECTIONS

While all streets in Lake Forest should be considered part of the bicycle network, the key road segments or Branch Connections identified in the Bicycle Master Plan provide a higher level of connectivity to the Core Routes and key destinations. These routes could benefit from additional enhancement to support bicycling on the identified corridor.

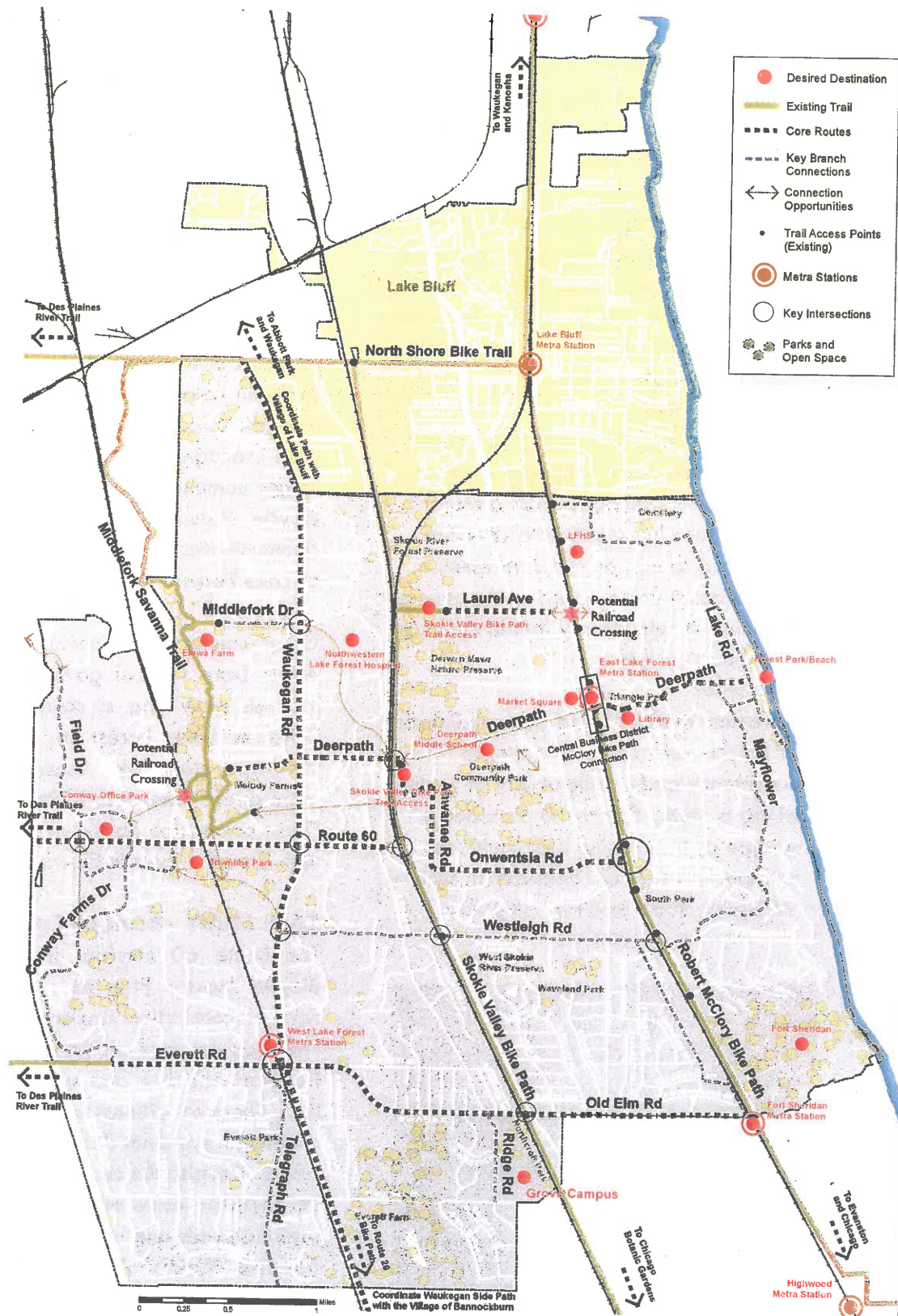
- Beverly Place
- Conway Farms Drive
- Field Court/Field Drive
- Mayflower-Lake Road Corridor
- Middlefork Drive
- Ridge Road (by Grove Campus)
- Telegraph Road
- Westleigh Road
- Existing paved neighborhood park pathways

INTERSECTIONS

Wide, busy intersections are challenging for bicyclists to cross. Improving key intersections can help facilitate east-west movement through the City. Intersections identified in the plan may require collaboration with the Illinois Department of Transportation (IDOT) to complete improvements. However, projects on routes leading to and from the intersections should be evaluated for bicycle compatibility and treated in a manner that would enhance and support future intersection improvements.

Key intersections identified in this plan are those routes that cross Waukegan Road, Highway 41, and Route 60. Given the nature of these major roads, with heavy traffic levels and higher speeds, providing enhancements to improve bicycle safety is important.

FIGURE 9: PROPOSED BICYCLE NETWORK



Possible enhancements might include:

- **Pavement Sensors**
Providing for pavement sensors in areas identified for bicycle use help to encourage bicyclists to follow the rules of the road by treating bicycles with the same importance as vehicles when alerting a traffic light to change.
- **Timing of Traffic Lights**
In some instances, the duration of traffic lights could be modified to improve the compatibility of a route for bicyclists and allow sufficient time for a bicycle to cross a large intersection without negatively disrupting vehicular flow.
- **No Turn on Red**
Prohibiting right turn on red for motor vehicles provides a safer environment for bicyclists waiting to cross a major intersection. In cases where cars are permitted to turn on red, turn lanes should be clearly marked and pavement markings should clearly identify a safe path for bicyclists.
- **Bike Boxes**
Pavement markings and clear delineation of bicycle areas help to promote consistency and predictability of cyclists along a route. Figure 10 provides a sample of how a bike box could be configured at a busy intersection such as Westleigh Road and Highway 41.

FIGURE 10:
SAMPLE BIKE
BOX



CONNECTION OPPORTUNITIES

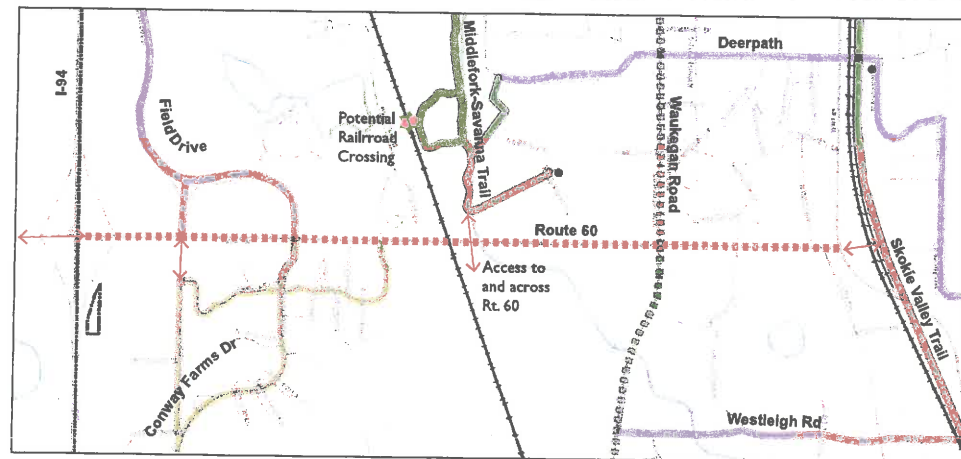
Connection opportunities are important connections identified in the Bicycle Network that require additional planning and collaboration with private land holders or other government entities. These connections go beyond evaluating a roadway and adding a bicycle facility to improve compatibility and highlight more creative areas for future bicycle connections. These opportunities relate to new development areas such as the Northwestern Lake Forest Hospital site and older establishments such as Lake Forest College and Lake Forest Academy and can help enhance the proposed bicycle network through private Master Plans. This plan recognizes the importance of the larger community institutions in completing a Bicycle Network and encourages continued communication and collaboration with the City of Lake Forest.

Other connection opportunities require joint effort from several government jurisdictions such as providing a connection from Field Drive in Lake Forest to Bradley Road in unincorporated Lake County to establish a more direct connection to Rt 176 and beyond. These connection opportunities are called out with brown arrows in Figure 9.

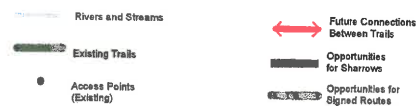
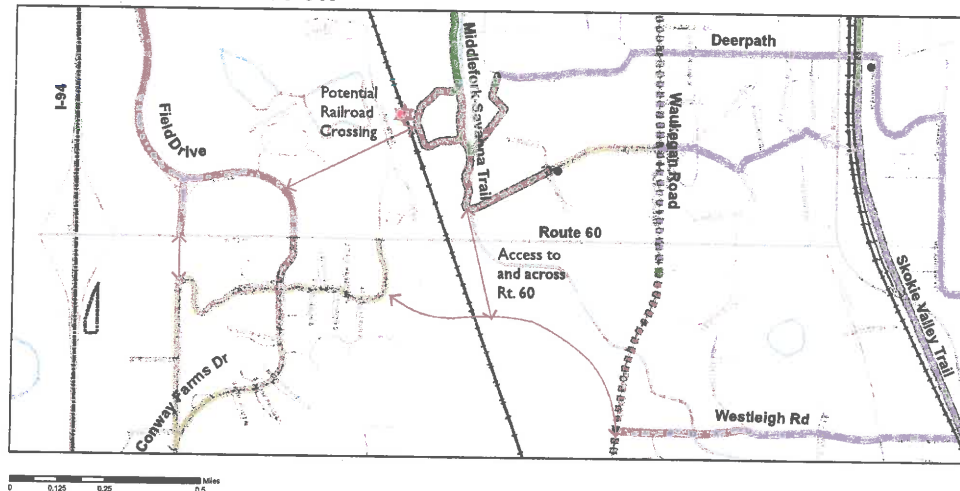
CASE STUDY - ROUTE 60 CORRIDOR

The Route 60 corridor is identified in the Bicycle Master Plan as a Core Route with several connection opportunities (Figure 11). The roadway has a high number of vehicles-traveled-per-day and a high posted speed limit. These conditions make an on-road facility challenging and not desired for the majority of riders. Despite the challenges associated with this corridor, Route 60 provides connections to regional trails and local destinations including Townline Park, Lake Forest Academy and Conway Office Park.

**FIGURE 11:
ROUTE 60
CORRIDOR**



Enhanced Connection



WHAT COULD ROUTE 60 LOOK LIKE?



The design of the Rt 60 bicycle facility could take on many different characters from a central median to a winding pathway.



HOW CAN THE CONNECTION BE ENHANCED?



The Rt 60 Corridor has several opportunities for enhanced connections. Recognizing the existing barriers such as railroad tracks and wetlands, the Master Plan identifies key connections that would enhance and facilitate east-west movement in Lake Forest. A railroad crossing north of Rt. 60 is identified as a priority.

CENTRAL BUSINESS DISTRICT

Encouraging people to bike to and around the Central Business District will increase economic development and promote active transportation options for errands, shopping and socializing. The East Lake Forest Train Station is a transportation hub for commuters and visitors to the Central Business District.

Bicycles are an important consideration to preserving a vibrant and active downtown. The City of Lake Forest is working to secure

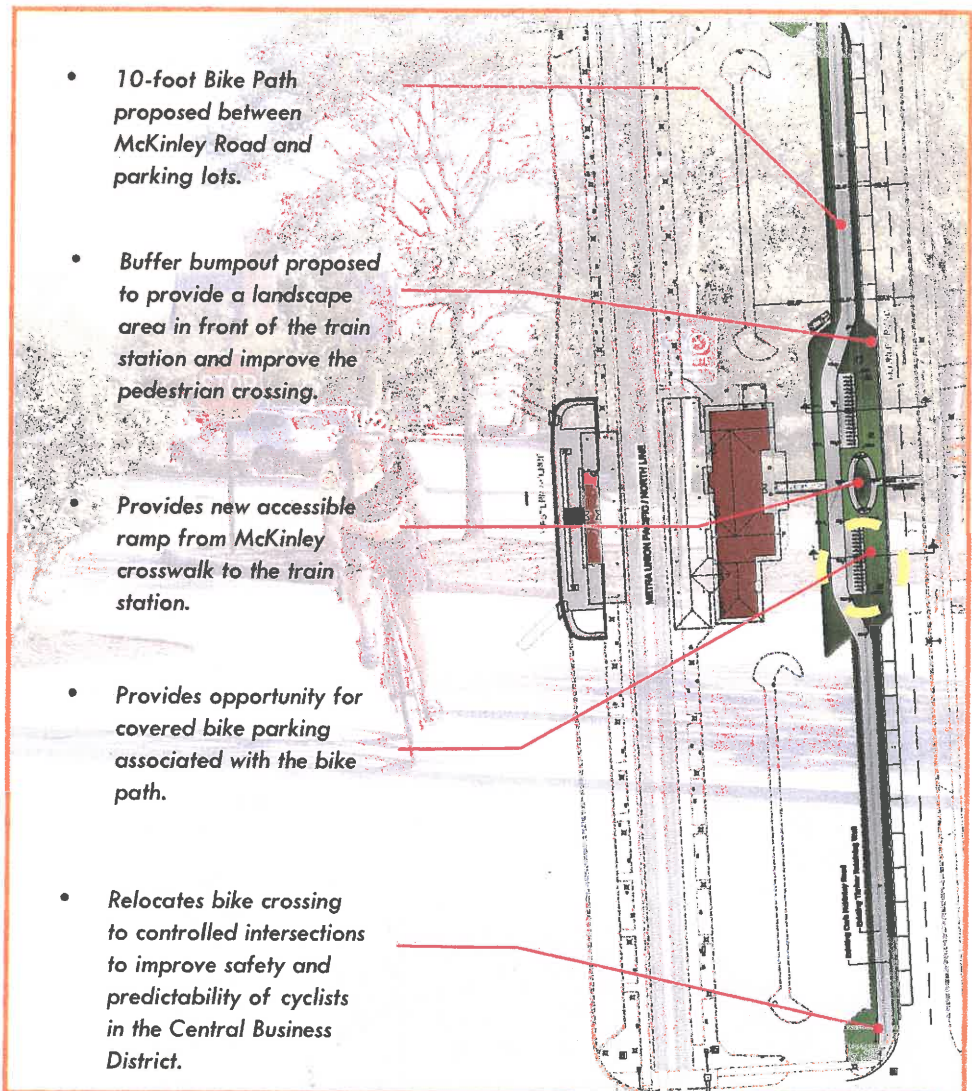
grant funding to improve conditions for bicyclists in the Central Business District including a bike path connection and additional bicycle parking at the train station.

ROBERT MCCLORY BIKE PATH CONNECTION

The Robert McClory Bike Path was constructed in the former Chicago North Shore and Milwaukee Railroad right of way. The bike path is separated from vehicular traffic throughout Lake Forest, except from

FIGURE 12:
PROPOSED
MCKINLEY TWO-
WAY SIDE PATH
CONCEPT PLAN

- 10-foot Bike Path proposed between McKinley Road and parking lots.
- Buffer bumpout proposed to provide a landscape area in front of the train station and improve the pedestrian crossing.
- Provides new accessible ramp from McKinley crosswalk to the train station.
- Provides opportunity for covered bike parking associated with the bike path.
- Relocates bike crossing to controlled intersections to improve safety and predictability of cyclists in the Central Business District.



Woodland Road (north of the train station) to Illinois Road (south of the train station). Between Woodland and Illinois Roads bike traffic is routed through a series of parking lots serving the Metra Train Station, and the City of Lake Forest Central Business District, a distance of approximately 1/2 mile.

Improving the connection of the McClory Bike Path through the Central Business District to create a safe bicycling environment is recommended. Several public comments were received regarding the existing conditions of roads and traffic patterns in this area and the need to improve the connection for all users of the Robert McClory Bike Path. The proposed separated bike path along McKinley Road provides a continuous route between Illinois and Woodland Roads. As the design of this connection is finalized, the following considerations are critical to the success of the project.

- The path material should be consistent with the existing asphalt path with minimal pavement markings.
- Signage along the connection specifically, and Robert McClory Bike Path generally, should be minimized to preserve the character of the bike path.
- Signage limited to the necessary directional signage needed to direct cyclists to the Central Business District and Metra station is appropriate.
- Sufficient space should be installed between the path and the parking spaces on McKinley to protect bicyclists from open car doors.
- Careful attention to the approach and treatment of intersections to ensure predictability and safety of all modes of transportation is required. See Figures 13 and 14.

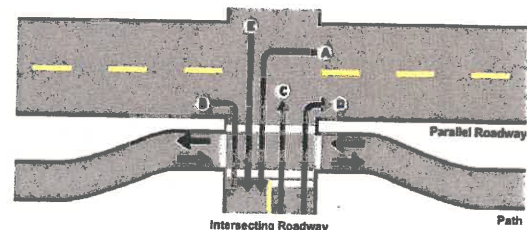
- Landscaping should be installed to effectively screen parked cars from McKinley Road.
- Location, size, and design of the bicycle parking structures and modifications to the landscaping and streetscape in front of the East Lake Forest Train Station will be considered by the Historic Preservation Commission, consistent with standard City practices.
- Given the nature of the Robert McClory Bike Path as a multi-user pathway, design techniques to slow the flow of bicycle traffic through the Central Business District is encouraged.
- If after further study a separated side path is determined to be infeasible, wayfinding signage or marked, shared lanes for bicycling should be considered.

FIGURE 13:
SAMPLE SIGNAGE
ANNOUNCING
INTERSECTION



Source: League of Illinois Bicyclists
(Presentation at UIC, 2010)

FIGURE 14: SAMPLE INTERSECTION TREATMENT



Source: League of Illinois Bicyclists
(Presentation at UIC, 2010)

The intersection of the proposed path with Deerpath and Westminster should be designed to increase visibility and provide safe crossing for all modes of transportation.

SIGNAGE AND MAPS

Signage is an important component of the Bicycle Master Plan. Signage helps to identify a bicycle route, remind motorists and bicyclists to share a roadway, and provides wayfinding information to key destinations.

CENTRAL BUSINESS DISTRICT

The Central Business District is a hub for the Bicycle Network in Lake Forest. Clarification of the signage around the Central Business District is recommended as part of this plan to direct cyclists to key destinations and

create a bike friendly environment in the Central Business District. The East Lake Forest Train station serves as a warming house for bicyclists using the Robert McClory Bike Path and commuters taking the train toward Chicago or Kenosha. Standard directional and wayfinding signage is encouraged in this area to support bicycle activity. Figure 15 provides an example of how signage could be clarified to encourage the pedestrian character of the downtown, while still encouraging bicyclists to ride to the Central Business District.

FIGURE 15:
CENTRAL BUSINESS
DISTRICT SIGNAGE



Before - "Walk Bikes" signs imply that no bike riding is allowed in the Central Business District



After - install "Walk on Sidewalk/Ride on Street" signs to encourage predictable behavior

BIKE ROUTE SIGNAGE

There are several different types of bike route signage including signs to “Share the Road” shown in Figure 16 and basic “Bike Route” and Directional signage shown in Figure 17 and Figure 18. This type of signage can supplement pavement markings on a preferred bicycle corridor or stand alone as a reminder to all users that bikes and cars should be expected on the roadway. Installation of bike route signage is an affordable and effective way to establish a bicycle network. Whenever possible, existing sign poles should be used to avoid visual clutter along the roadways.

FIGURE 16: SAMPLE SIGNED ROUTE - CONWAY FARMS



FIGURE 17: SAMPLE BIKE ROUTE AND DIRECTIONAL SIGNAGE INSTALLATION AT LONGMEADOW

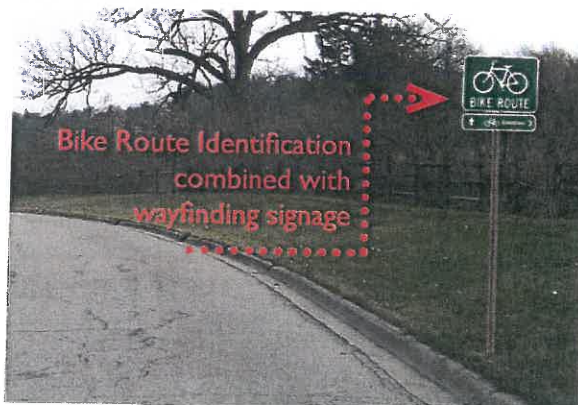
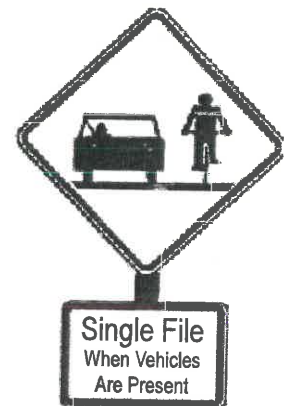


FIGURE 18: SAMPLE DIRECTIONAL SIGN



FIGURE 19: SAMPLE REGULATORY SIGN

When vehicles are present, bicyclists should ride single file and in a manner that does not impede vehicular travel in accordance with State Law.



In addition, regulatory signage should be installed in key location to remind cyclists of the State law to ride in a manner that does not impede the normal flow of traffic. For example, in instances where approaching cars are present, cyclists should ride single file and in no case ride more than 2 riders abreast. Figure 19 provides an example of how signage could be clarified along preferred streets for cycling.

PUBLICATIONS

The City of Lake Forest has been selected to work with the League of Illinois Bicyclists to create a “Bike to Metra” brochure in an effort to raise awareness of how to utilize biking as part of a daily commute. The pamphlet will promote bike routes and destinations of interest in Lake Forest including the shops and restaurants in the Central Business District.

BICYCLE PARKING

Bicycle Parking is an important component of a bicycle friendly environment. Well-placed bicycle parking can encourage cyclists to make a trip on bike and also decrease clutter and hazards throughout the Central Business District and at key destinations (See Figure 21). Creative solutions to provide additional bicycle parking, such as the "BOOKS" rack at the Public Library are encouraged.

TYPE OF BIKE RACKS

The type of bike rack may vary depending on the location, character and anticipated capacity. Bicycle rack design should follow standards outlined in the Bicycle Parking Guidelines prepared by the Association of Pedestrian and Bicycle Professionals.

The chosen bike rack should:

- Support the bicycle in an upright position.
- Stabilize the wheel of the bicycle from tipping.
- Support all types of bicycles.
- Enable both the frame and wheel of a bicycle to be secured.

DESTINATION BICYCLE PARKING

Providing bicycle parking at key locations requires collaboration with private property owners and The City of Lake Forest. Continued monitoring of bicycle parking throughout Lake Forest is encouraged to facilitate and encourage bicycle use to key destinations.

- Bicycle parking should be considered as part of new development in the Business and Office Zoning Districts and Special Use Permits.
- Bicycle parking should be provided at all City owned buildings and parks.
- Bicycle parking should be located in a manner that does not restrict pedestrian access to building entrances or use of the sidewalk.
- Bicycle parking should be located within 50 feet of a desired destination and be visible from the main entrance to a destination or park.
- Temporary Bike Corrals are encouraged to support bicycling in the warmer months. Figure 20 provides an example of a temporary bike corral on Western Avenue within existing vehicle parking spaces.

FIGURE 20:

EXAMPLE OF TEMPORARY BICYCLE PARKING IN CENTRAL BUSINESS DISTRICT



Observed bicycle parking in the Central Business District within a doorway to a local business. Blocking the entrance to buildings is not only a nuisance but a safety concern as well.



Temporary bicycle corrals at key locations in the Central Business District will help promote bicycle use.

FIGURE 21: OBSERVATION OF EXISTING BICYCLE PARKING ISSUES IN CENTRAL BUSINESS DISTRICT



The provided bicycle parking is located too far from the front door and is not used by cyclists. Providing visible, well located bicycle parking is essential to creating a bicycle friendly community.

COMMUTER BICYCLE PARKING

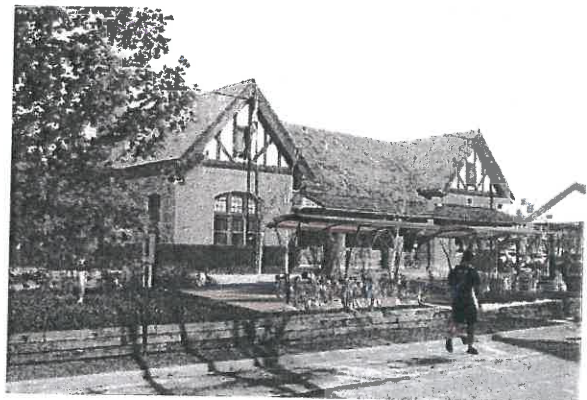
Covered, long-term bicycle parking at the two train stations in Lake Forest should be installed to promote bicycling to and from the train stations. Additional consideration of commuter bicycle parking at major office centers such as the Conway Office Park should be considered.

Covered bike parking should:

- Be located in a manner that does not negatively impact historic structures or landscapes. Figure 22 provides a conceptual idea for bicycle parking at the East Lake Forest Train Station.
- Be located within 50 feet of the train station or destination.
- Be safe and secure.
- Protect bicycles from the elements.

FIGURE 22:

EXAMPLE OF COVERED BICYCLE PARKING



Possible Covered Bike Parking at East Lake Forest Train Station. Structures in this area should not block views of the historic station and will be considered by the Historic Preservation Commission.

Toolbox of Bicycle Facilities

LOWER FINANCIAL IMPACT

SIGNAGE

- Signed bike routes identify destinations and connections using standard signage. Given the historic character of Lake Forest, careful attention to the placement and number of signs will be critical to the success of this tool. Signage in key areas will help guide residents & visitors around town.
- Share the Road signage identifies a preferred bicycle route in Lake Forest and provides a visual sign for motorists and bicycles to share the road.
- Destination and mileage signage is appropriate to direct visitors to the Central Business District and key destinations throughout town.



PAVEMENT MARKINGS



- Pavement markings help to identify preferred bike routes in the city. Tools like "sharrows" and bike boulevard markings provide clear direction to share the road in circumstances where a designated bike lane is not feasible due to road width constraints.
- Intersection improvements such as "bike boxes" help to identify placement for cyclists at busy intersections.
- Colored bike lanes assist in directing bicycles to a preferred location on the roadway and crosswalks. Appropriate locations include intersections, crosswalks, key connections to destinations and bike paths and in circumstances not easily navigated by bicycle but critical to the Bicycle Network.

BIKE LANES

- A minimum of 5 feet in each direction is needed for a standard bike lane. Given the narrow streets in Lake Forest, very few streets are suitable for bike lanes without significant improvements to widen the road.
- Road design should be in compliance with current AASHTO design guidelines included by reference at the end of this plan. A copy of the 1999 Guide is available at the City of Lake Forest.
- In areas where only 4 feet are available within the existing roadway, wide shoulders could be incorporated into the Lake Forest street network to provide cyclists with a safe, designated area to share the road with motor vehicles.



2-WAY SIDE-PATH



- Side-paths are best located along busy streets with limited curb cuts or conflicts with turning vehicles.
- Side paths may be appropriate in instances where a bicycle connection is needed and on-road facilities are not desirable or feasible.
- A 10-foot minimum width is recommended for a two-way cycle path. In cases where right of way is limited, a two-way path of no less than 8 feet may be considered.
- "No Turn on Red" signage is important to protect cyclists traveling along side-paths to avoid conflict with turning vehicles.
- Vegetation may be installed between the road and the bike path but should not block views of cyclists on the path from the drivers on the road.

PATHS/TRAILS

- Off-road trails are typically located through wooded areas or along railroads and rivers and are excellent for the recreational rider.
- A minimum of 10 feet in width with 2 feet of clearance from shrubs and other hazards is recommended.
- Signage along trails should be limited with key destination and directional signs installed at access points.
- Access to paths and trails should be well marked, free of vegetation and accessible with depressed curbs.
- Bike paths should be free of debris and tree roots.
- Path lighting should be reviewed by the Historic Preservation Commission or Building Review Board.



Application of Bicycle Facilities

Careful evaluation of the bicycle facilities included in this plan is critical to the success of the bicycle network. Priority should be given to the Core Routes and Branch Connections identified in this plan. Determination of facilities should be based on current road configuration, current and anticipated use of the corridor, streetscape character and overall consistency with the City's Capital Improvement Plan.

Core Routes are expected to facilitate more bicycle traffic than Branch Connections. Greater impact facilities such as pavement markings and side paths may be necessitated based on the posted vehicle travel speed and the road configuration.

In situations where a segment of a corridor is proposed for infrastructure improvement, consideration should be given to the entire corridor when choosing a bicycle facility. When possible, on-street facilities should be evaluated in advance of more expensive options such as side paths and off-road trails.

Bicycle improvements should correspond with Capital Improvement Projects and specific projects may require consideration by City Boards and Commissions in advance of final approval by the City Council.

FIGURE 23: WESTLEIGH ROAD - EXISTING



Wide vehicle travel lanes and a moderate speed limit make Westleigh Road a good option for bicyclists.

CASE STUDY - WESTLEIGH ROAD

A combination of bicycle facilities are appropriate for the Westleigh Road corridor given the difference in road width and number of motor vehicles present on the road between Western Avenue and Waukegan Road.

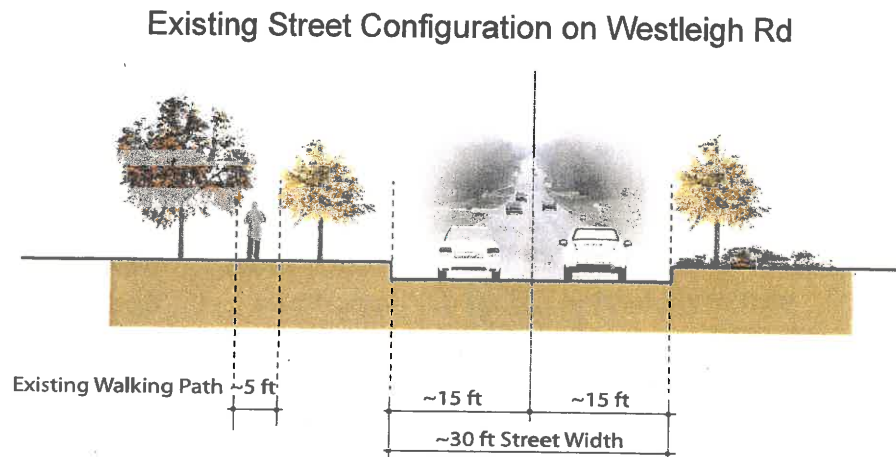
1. Evaluate Character and Challenges

The road and sidewalk configuration changes along Westleigh Road. The road segment east of Highway 41 has wide lanes and drainage ditches on either side of the road as shown in Figure 23. Sidewalks are found on one or both sides of the street in this area. Extended curbs from side-streets that intersect with Westleigh Road protrude into the existing shoulder on Westleigh Road. The location and possible hazard of these curbs should be evaluated prior to installation of a bicycle facility on this road to determine the necessity of additional roadway improvements. West of Highway 41, Westleigh Road changes to a residential lane with no curb and a sidewalk on the south side of the road. Given the varied character along the route, multiple types of on-road facilities could be appropriate.

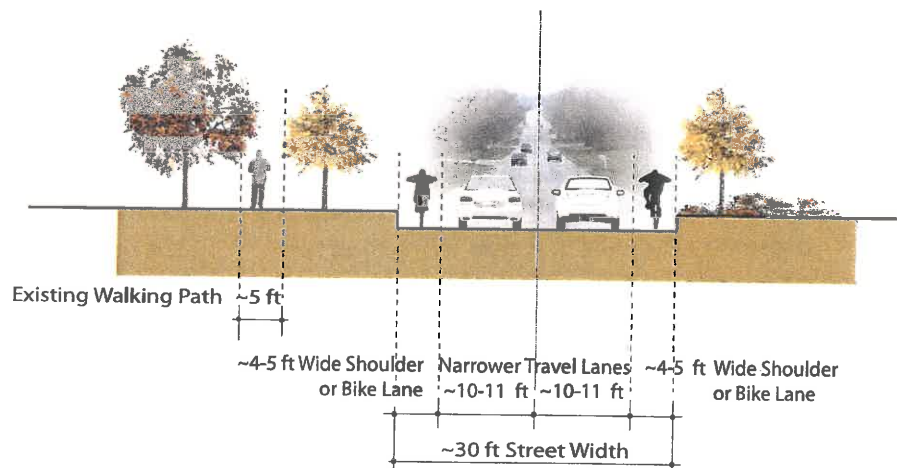
2. Determine the Lowest Impact Facility

Given the character of the roadway, and the fact that this corridor is a major vehicular route with several cross streets and driveways, on-road bicycle facilities are more appropriate to ensure safety of bicyclists and motorists. The existing sidewalks support pedestrian and younger cyclists along this route. Given the width of the roadway east of HWY 41, pavement markings would be more effective than signage to clearly designate where cyclists should travel on the roadway. Continuation of pavement markings along the entire route is appropriate.

**FIGURE 24: SAMPLE
WESTLEIGH ROAD DIET**



Opportunity for Wide Shoulder for Cycling on Westleigh Rd



3. Review National Standards for Bike Facilities

The American Association of State Highway and Transportation Officials (AASHTO) regulations require a minimum of 5 feet for a designated bike lane. However, other design standards such as the National Association of City Traffic Officials (NACTO) Design Guidance for Bike Lanes indicate that a minimum of 4 feet is necessary to safely designate a bike area on the road. Figure 24 demonstrates an example of a “road diet” for Westleigh Road, east of Highway 41. The existing 15 foot wide vehicular

travel lanes could be reduced to 10 feet to allow for a bike lane to designate an area for bicyclists. Reducing the width of vehicle travel lanes has been proven to slow traffic and support adherence to the posted speed limit creating a safer environment for motorists, cyclists, and pedestrians.

Alternatively, the travel lanes could be reduced to 11 feet in both directions, more typical of the engineering standards in Lake Forest, to clearly designate an area for motor vehicles and bicycles along a designated bicycle route. The wide shoulder could be utilized for cyclists in this area.

A greater impact solution to improve this route for cycling is to widen the road east of Highway 41 two or more feet to allow for a 5 foot bike lane and wider vehicular travel lanes.

The width of the road along Westleigh Road, west of Highway 41, does not support bike lanes or the installation of a wide shoulder given the drainage ditches and surface restraints in this area. Figure 25 provides a graphic representation of how the addition of a “sharrow” designates an area of the roadway for bicycles. Sharrows alert motorists and bicyclists to share the road while preserving the historic character of the roadway. A sharrow implies that bikes will use this route, but cars may have to wait to pass cyclists along this portion of the road since there is not enough roadway for both to travel side by side. In all cases, bicyclists should move to single file when a vehicle is present and should not ride more than two abreast.

The major intersections along Westleigh Road should be reviewed and updated as appropriate to improve safety and predictability at the crossing.

4. Determine Location of Key Destinations.

Westleigh Road is a Branch Connection between Waukegan Road and East Lake Forest. The Skokie Valley Bike Path is easily accessed from Westleigh Road and destination and directional signage would be appropriate along this route. New bicycle signs should utilize existing traffic signs and poles to limit clutter along the roadways.

5. Obtain Appropriate Permits and Approvals

Bike facilities are most cost effective when implemented at the time of a Capital Improvement Project. Depending on the type of project, presentation at a public hearing may be appropriate. Figure 26 establishes a process for review and consideration of bicycle improvements on City streets.

6. Identify Grant Opportunities

Several grant opportunities are available for communities that have a Bicycle Master Plan in place. Creating local and regional connections for bicycles is important. A summary of current grant opportunities is provided in Appendix B of this report.

FIGURE 25: SAMPLE WESTLEIGH SHARROW - WEST OF HIGHWAY 41



Before: Narrow lane, no designation for bicyclists

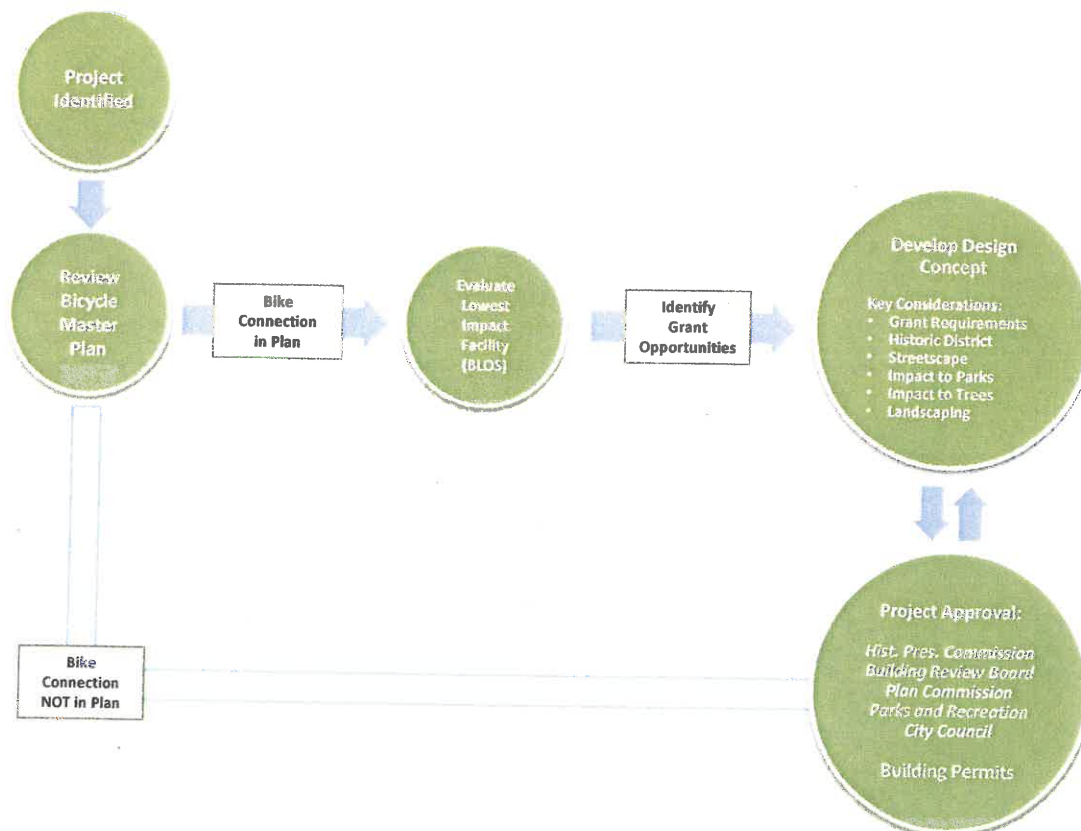


After: installation of a sharrow is a cost effective way to designate a road as a preferred bike route.

**FIGURE 26: CAPITAL
IMPROVEMENT REVIEW
PROCESS**

PROCESS

1. Evaluate which bike facility will maintain a Bicycle Level of Service (BLOS) rating of B or higher on all Core Routes and a rating of C or higher on all Branch Connections.
2. Evaluate facility designs for neighborhood context and immediate surroundings.
3. Evaluate intersections in the context of other bike facilities as well as safety for all modes of transportation.
4. Identify key destinations along route and evaluate availability of bike parking at destinations along the proposed facility.

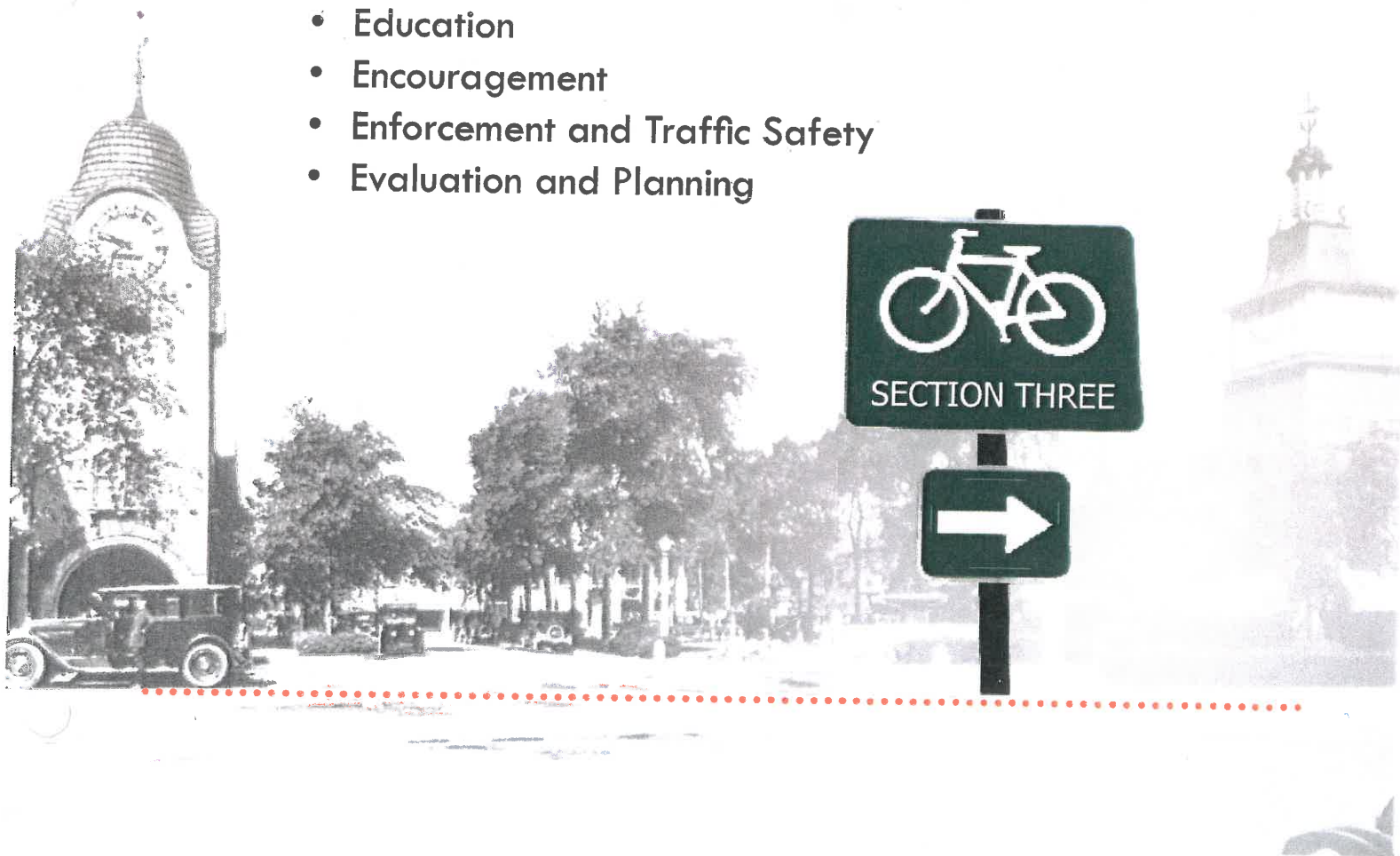


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JUNE 2013



BICYCLE TUNE-UP: BIKE FRIENDLY PLANNING

- Engineering
- Education
- Encouragement
- Enforcement and Traffic Safety
- Evaluation and Planning



Engineering Priorities

THE 5E'S

Use the five E's to provide a bike friendly community and support new and experienced riders.

ENGINEER
EDUCATE
ENCOURAGE
ENFORCE
EVALUATE

Provide Way-finding Signs



Designate Bike Routes



TRAIL AND SIDE PATH IMPROVEMENTS

- Provide adequate clearance of trees and shrubs along all bike trails and side paths.
- Repair damaged pavement along all bike trails and side paths.
- Verify that stop signs are present at all major intersections along bike trails and side paths to notify bicyclists to stop at the intersection ahead.
- Widen existing Side Path on Waukegan Road to meet minimum standards in plan.

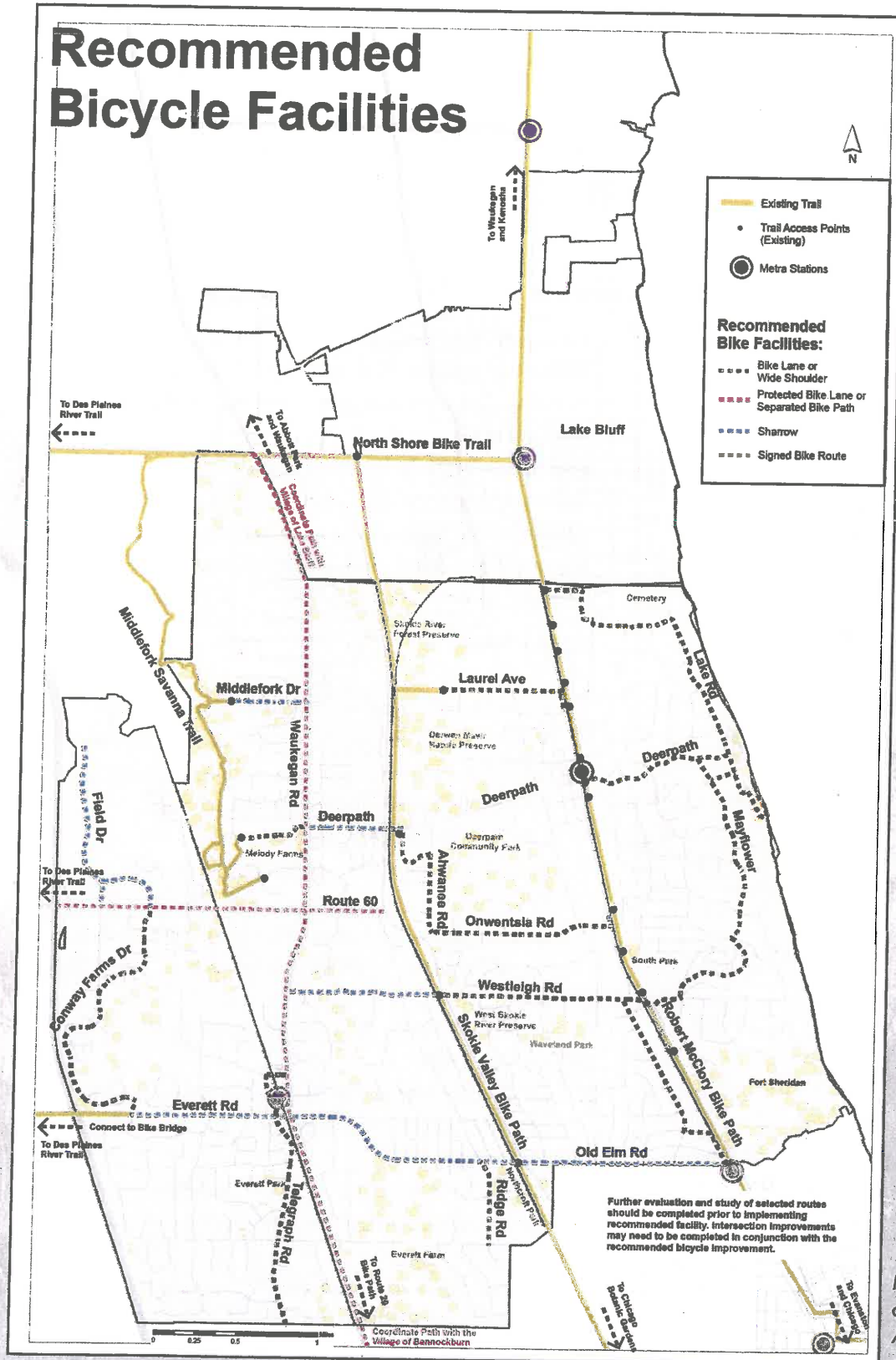
POLICY & REGULATORY

- Consider requirements to provide bike parking for new businesses.
- Install regulatory and directional signs on designated routes.

ROADWAY IMPROVEMENTS

- Implement bicycle facilities identified in the Plan.
- Maintain roads edge to edge.
- Install bike friendly sewer grates along Core Routes and Branch Connections that are flush with the pavement and do not create a hazard for cyclists.
- Improve road material at railroad crossings to protect bike wheels.
- Use non-slip paint for pavement markings.
- Prioritize snow removal on Core Routes and Branch Connections.

**FIGURE 27:
RECOMMENDED
BICYCLE FACILITIES**



Route priorities are identified in Appendix D.

Education & Traffic Safety

THE 5E'S

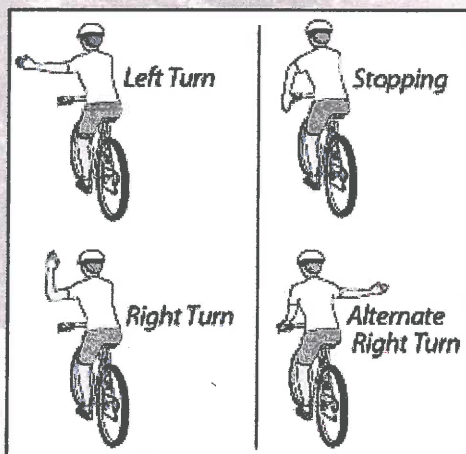
Use the five E's to provide a bike friendly community and support new and experienced riders.

ENGINEER
EDUCATE
ENCOURAGE
ENFORCE
EVALUATE

Share the Road!



Be Predictable!



Source: City of Lawrence, KS
(www.lawrenceks.org)

An important component of the Bicycle Master Plan is education. Educating bicyclists on how to ride when cars are present and motorists on how to coexist on the road with bicyclists will help encourage people to ride more and drive less. There are several resources available that provide access to the rules of the road to provide clear expectations of how all modes of transportation will behave on the street.

ACTION STEPS

- Provide access to rules of the road on City Website and distribute Traffic Safety Cards.
- Establish Police Community Training Events and presentations to students in the schools.
- Educate Police Officers and post current bicycling regulations at the Public Safety Building.
- Encourage driver education programs to include lessons on how to share the road as a driver and a cyclist.
- Sponsor Bike Rodeos for young children on an annual basis.
- Encourage local bike shops and advocates to provide bicycle maintenance classes for students and adults.
- Support the establishment of Bike Clubs in the community including the schools, Senior Center, and CROYA.
- Remind riders and drivers of the rules of the road annually in the Spring issue of the Dialogue!

Encouragement

THE 5E'S

Use the five E's to provide a bike friendly community and support new and experienced riders.

ENGINEER

EDUCATE

ENCOURAGE

ENFORCE

EVALUATE

Explore Lake Forest!



Perks for bikes!



In order to encourage more people to ride bicycles in Lake Forest and promote healthy lifestyles, The City supports and encourages community events and facilities that promote bicycling. All special events should follow standard City procedures and obtain the appropriate approvals in advance.

POSSIBLE ACTIVITIES TO ENCOURAGE BICYCLING

- Community Bike Rides – coordinate with local bike clubs and stores.
- Bike to School/Work Days – coordinate with schools and Lake Forest High School Environmental Club.
- Discounts Days for bicyclists – coordinate with the Chamber of Commerce and the City's Economic Development Coordinator.
- Bike and Dine Events – coordinate with Chamber of Commerce and the City's Economic Development Coordinator.
- Temporary Bike Corrals in the Central Business District during the summer and at special events such as the Fourth of July Fireworks and Saturday morning Farmer's Market.
- "Bike Sheridan Road" or "Bike the Square" events where the roads are closed to cars for a morning to allow bicyclists to experience the roads car-free.

Enforcement

THE 5E'S

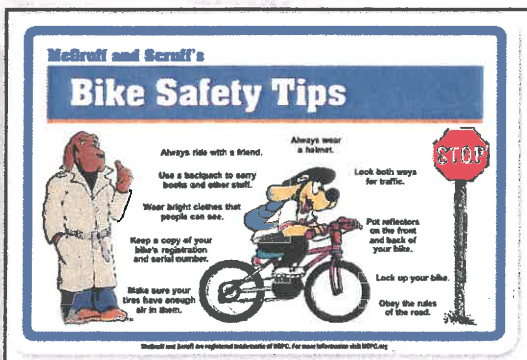
Use the five E's to provide a bike friendly community and support new and experienced riders.

ENGINEER
EDUCATE
ENCOURAGE
ENFORCE
EVALUATE

Know the Rules!



Be Safe!



The Lake Forest Police Department played an active role in the development of this plan. The Police Department already utilizes bicycle patrol in Lake Forest and continues to set an example of how to follow the "rules of the road" while cycling on the streets.

RULES OF THE ROAD - THE BASICS

- Obey traffic laws, signs and signals.
- Ride in the right lane, except when passing another vehicle, preparing for a left turn or avoiding hazards.
- Ride on paved shoulders and bike lanes when present and free of hazards.
- Ride on the right, never ride against traffic.
- Ride no more than two abreast, returning to single-file if riding two abreast impedes the flow of traffic.
- Use hand signals to indicate right or left turns, slowing or stopping.
- Use a headlight, taillight and reflectors at night.
- Act like a vehicle on the roads -- bicycles have the same rights and responsibilities.
- Never assume motorists see you or that you have the right-of-way.
- Wear appropriate gear to protect yourself: helmet, glasses and gloves.

Evaluation and Planning

THE 5E'S

Use the five E's to provide a bike friendly community and support new and experienced riders.

ENGINEER
EDUCATE
ENCOURAGE
ENFORCE
EVALUATE

WHAT MAKES LAKE FOREST A BIKE FRIENDLY PLACE?

Bicycle parking at key destinations

Making all driveways a trailhead and using the roads to access designated bike trails

Covered bike parking at train stations and key employment hubs for commuters

Traffic regulations that support bicycle use

Smooth roads

Safe intersection crossings for all modes of transportation

Way-finding signage to help cyclists find key destinations

Bike lanes and pavement markings to alert bicyclists and motorists to share the road

The Bicycle Master Plan is not a static document but should be evaluated every 5 years to ensure consistency with current trends and that the improvements are meeting the needs of residents. The Bicycle Level of Service tool and other resources identified in Appendix B should be used to evaluate bicycle routes and help to inform the design of proposed modifications to increase the bicycle compatibility of a route.

ACTION STEPS

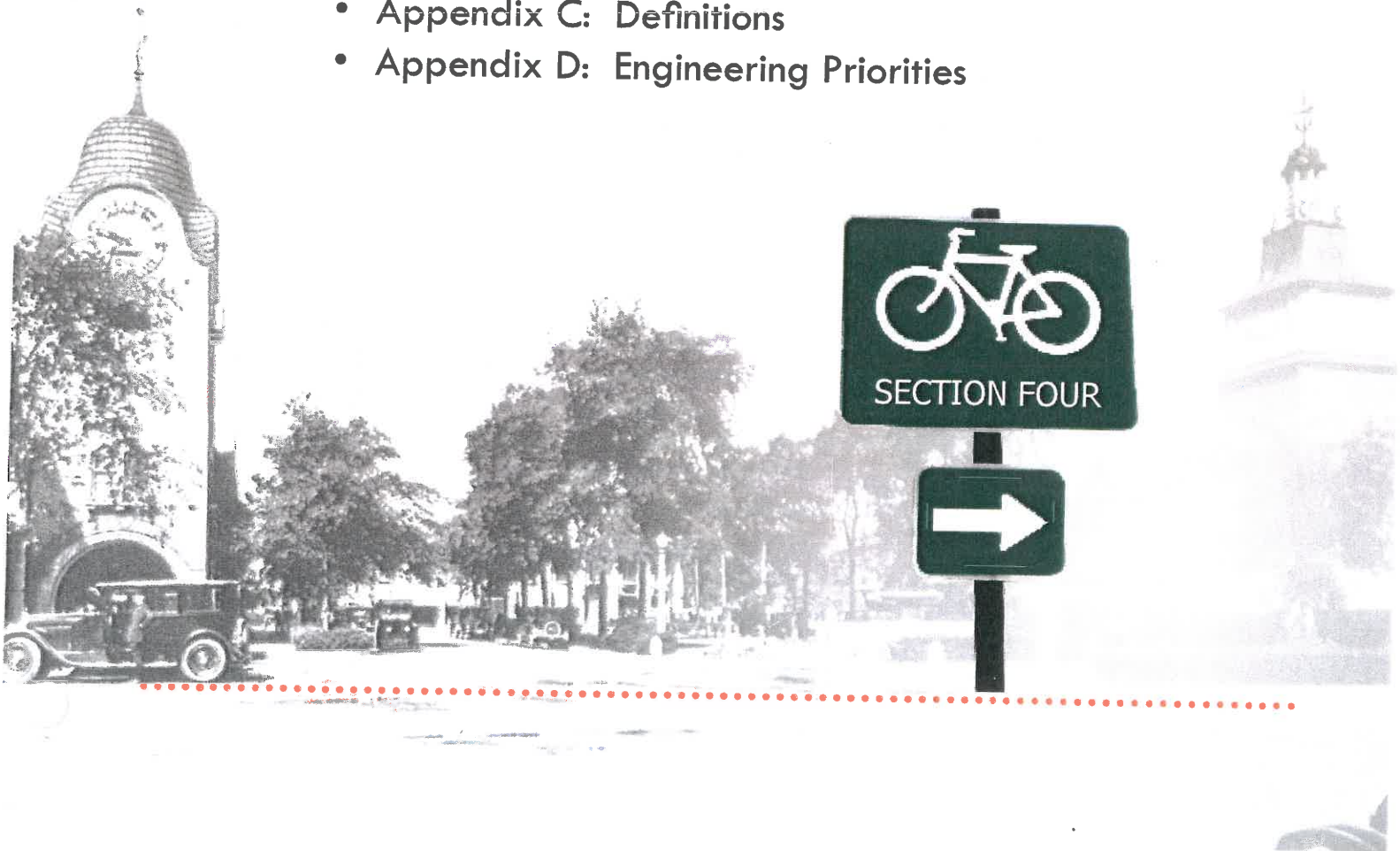
- Add 15 miles of designated bicycle routes in Lake Forest by 2025.
- Install "Share the Road" signage on all designated routes to raise awareness of bicycling in Lake Forest.
- Maintain a bicycling section on the City of Lake Forest Website to serve as an information source for residents and visitors including a feedback form.
- Actively seek grant funding sources for projects. A list of current grant opportunities is included as Appendix B.
- Prepare an annual report to the City Council on the progress of implementing bicycling improvements, give a review of bicycle crashes and establish priorities for the coming year to continue to improve safety and conditions for bicycling.

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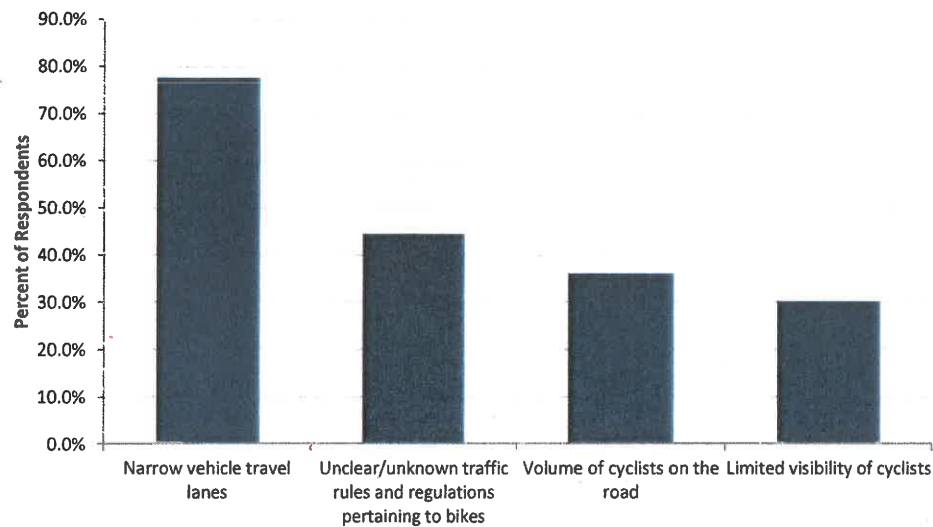
APPENDICES:

- Appendix A: Community Survey Summary
- Appendix B: Resources
- Appendix C: Definitions
- Appendix D: Engineering Priorities



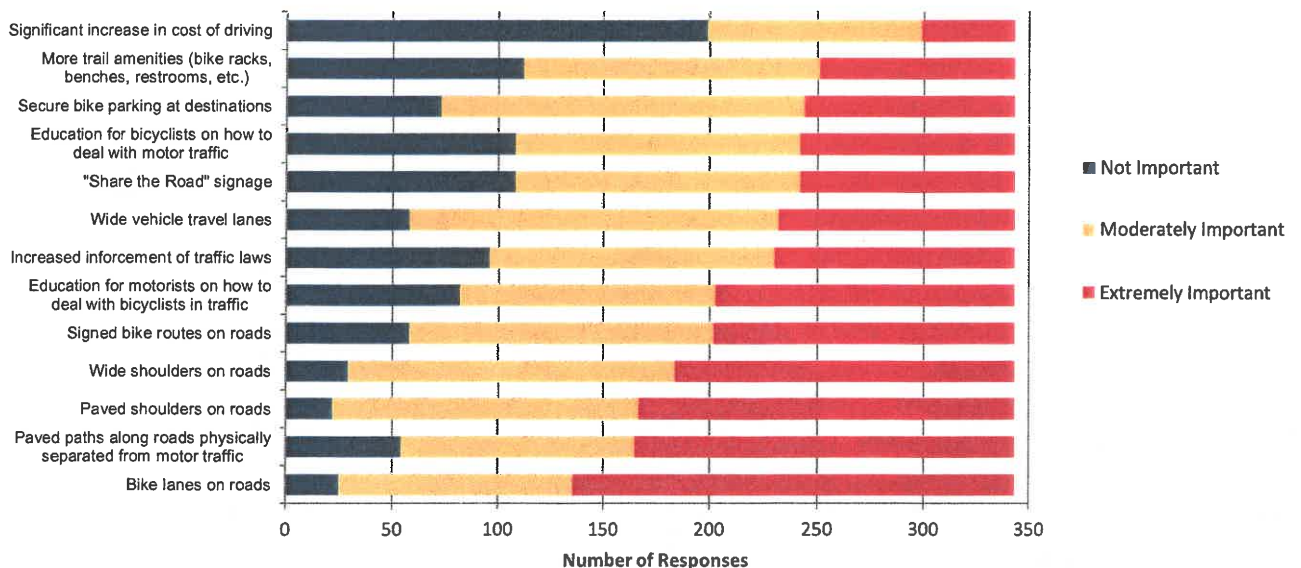
Appendix A: Community Survey Summary

1. When driving on streets where cyclists are present, what challenges currently exist in Lake Forest?



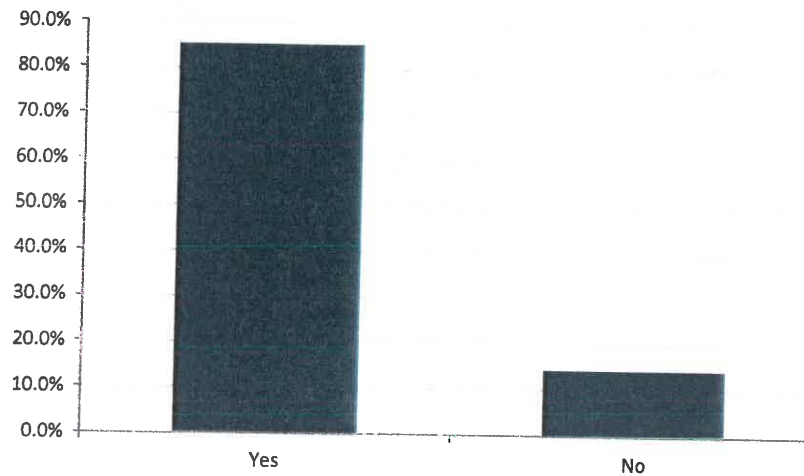
Seventy-eight percent of respondents indicated that narrow vehicle travel lanes are an issue in Lake Forest when it comes to driving on streets where cyclists are present. Respondents identified unclear or unknown traffic rules and regulations pertaining to bikes as the second most common issue.

2. Which conditions would encourage you to bike more than you do today?



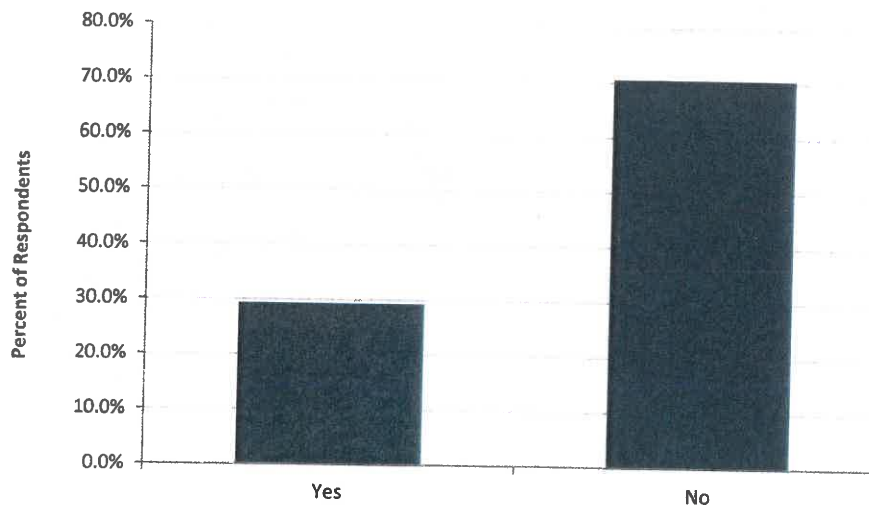
Most of the respondents indicated that they would be "extremely" or "moderately" encouraged to ride more often if there were marked bike lanes on the roads. The majority also indicated that paved or wide shoulders on roads would also encourage them to ride more often. Many indicated that signed bike routes, education of motorists and cyclists and increased enforcement of traffic rules would be encouraging as well.

3. Do you think it is important for bike routes in Lake Forest to provide connectivity beyond city boundaries?



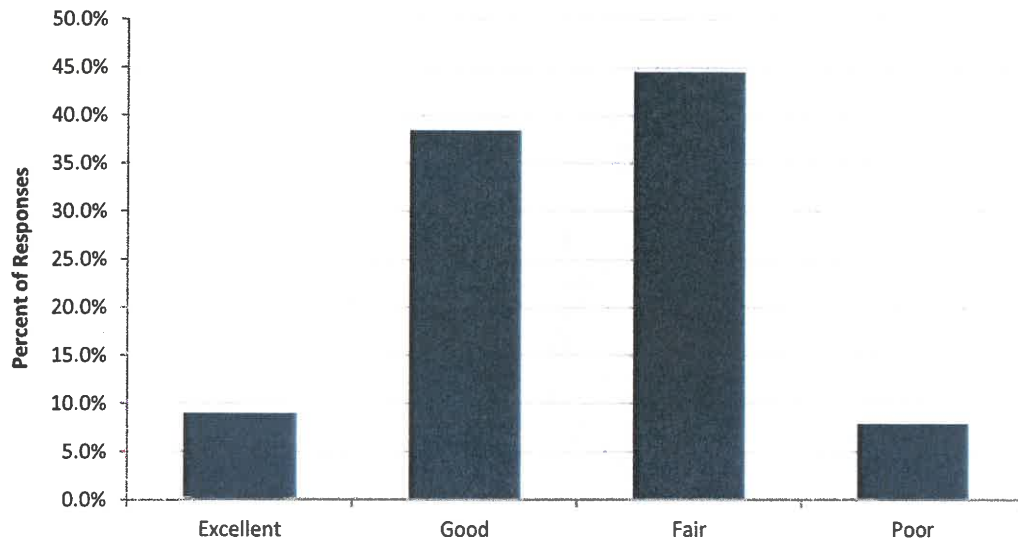
Over 85% of respondents indicated that it is important that bike routes connect Lake Forest to destinations beyond the City limits.

4. Do the existing bike facilities in Lake Forest provide adequate connectivity within Lake Forest?



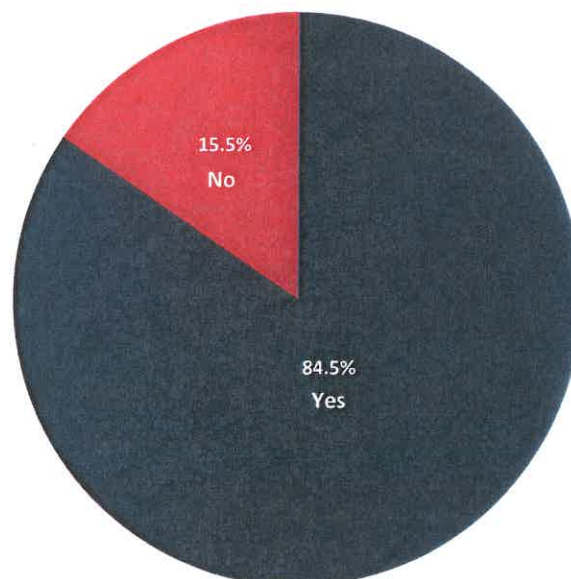
The majority of respondents (71%) indicated that Lake Forest does not provide adequate connectivity within the City.

5. What is your opinion of availability of bike trails and paths in Lake Forest?

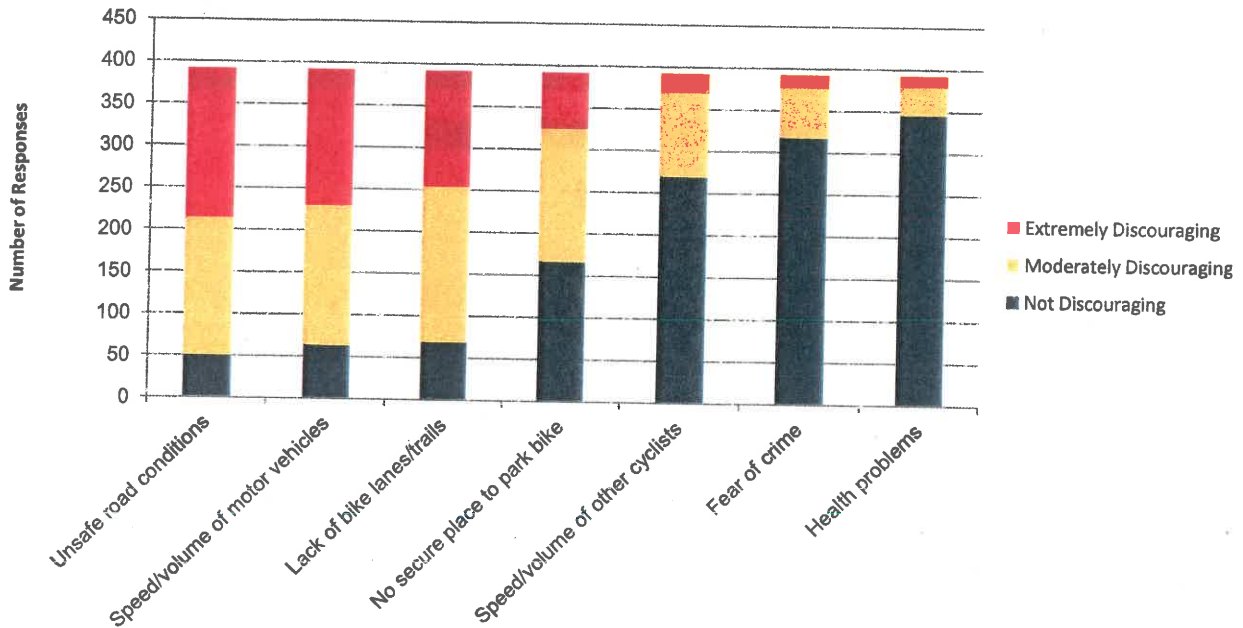


Forty-five percent of respondents indicated that the availability of bike trails and bike paths in Lake Forest is only fair; while 39% indicated that the availability is good.

6. Would you take longer routes to your destination in order to use bike facilities?

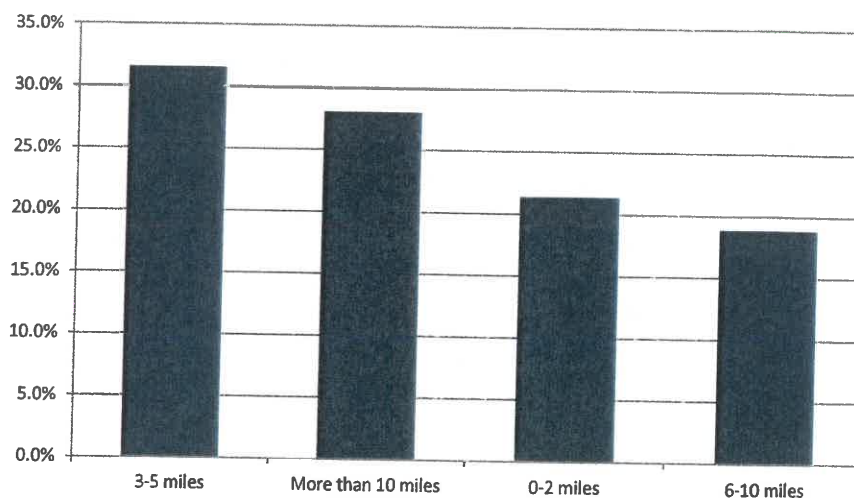


7. Which situation discourages you from riding a bike more often or from not riding at all?



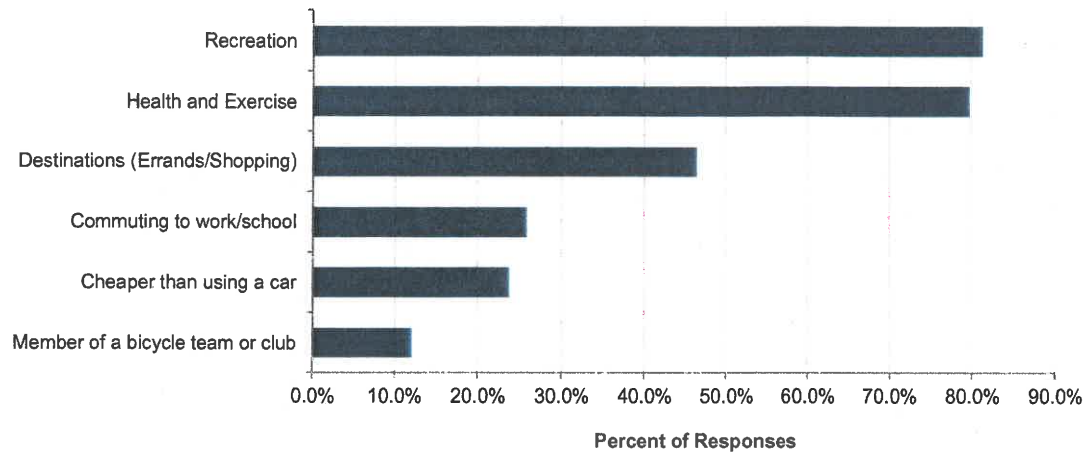
Responses to the survey indicate that cyclists are more discouraged from riding more by unsafe road conditions, the speed and volume of motor vehicles, and the lack of bike facilities. Lack of secure bike parking also discourages a large percentage of cyclists. Several responses also indicate concerns about the speed and volume of other cyclists.

8. How many miles do you typically ride your bike during a single trip?



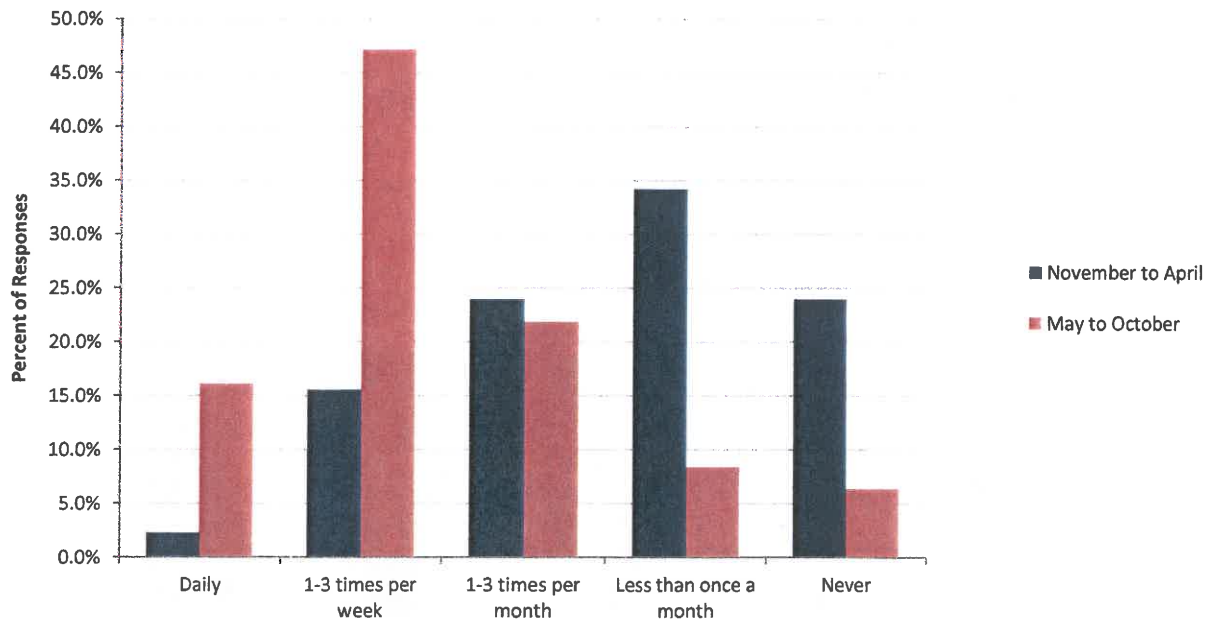
Responses to the survey indicate that bikes are used in Lake Forest for a variety of trips including recreation purposes and exercise, commuting, and to run errands. Over 30% of respondents indicated that they ride 3-5 miles during a single trip and 28 % ride more than 10 miles for a typical ride.

9. Why do you ride your bike?



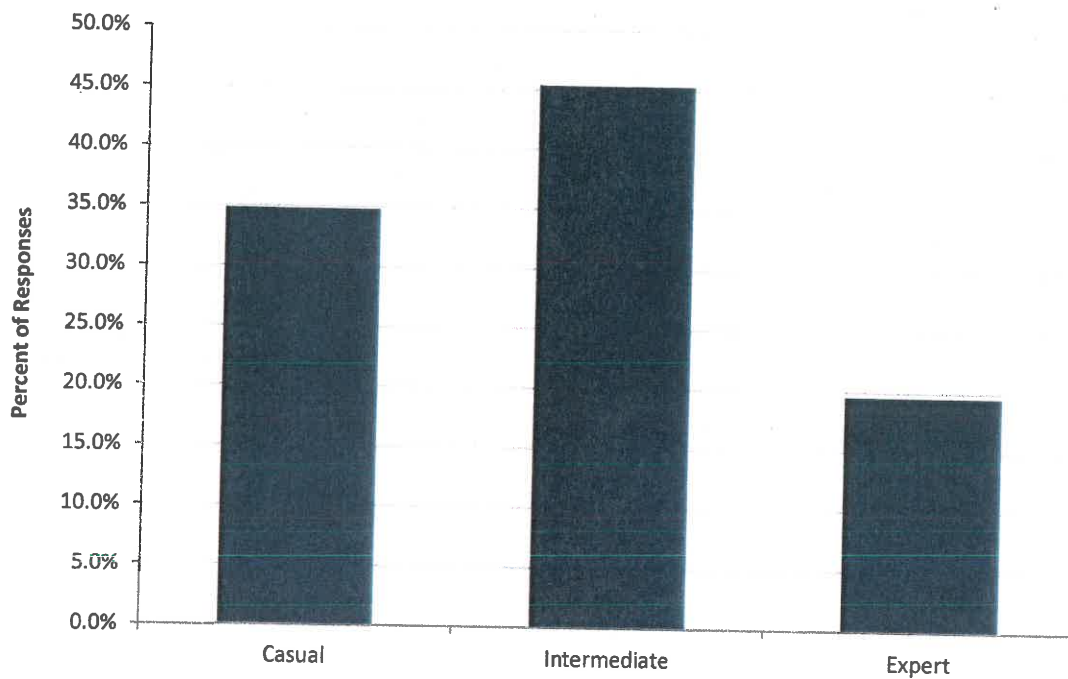
Most respondents who live, work or attend school in Lake Forest indicated that they bike for health and exercise as well as for recreation. Almost 50% of respondents indicated that they also ride their bikes to run errands or to go shopping. Twenty six percent of respondents indicated that they use their bikes to get to and from work or school.

10. How often do you ride your bike in Lake Forest?



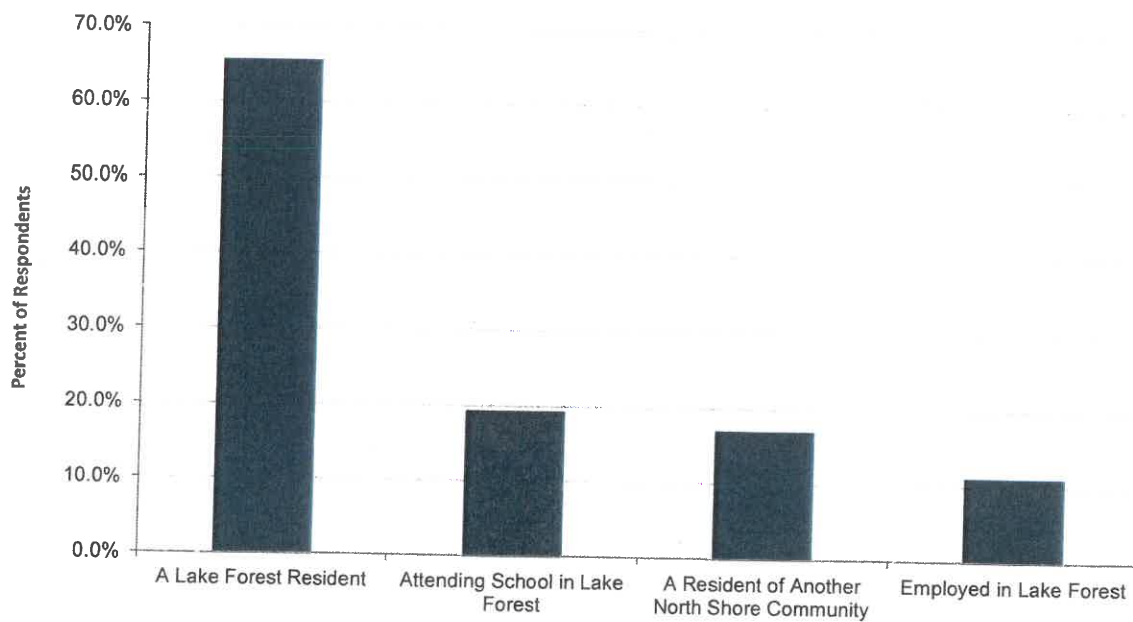
Most respondents indicate that they ride their bikes in Lake Forest more often during the warmer months of May to October than November to April. However, over 15% of respondents indicate that they still ride their bikes 1-3 times per week during the winter months and 24% ride 1-3 times per month during that time. Fifteen percent of respondents ride their bikes daily during the warmer part of the year. Thirty-two percent of the total “daily” riders cycle for the purpose of getting to and from school.

11. What do you consider your level of biking experience?



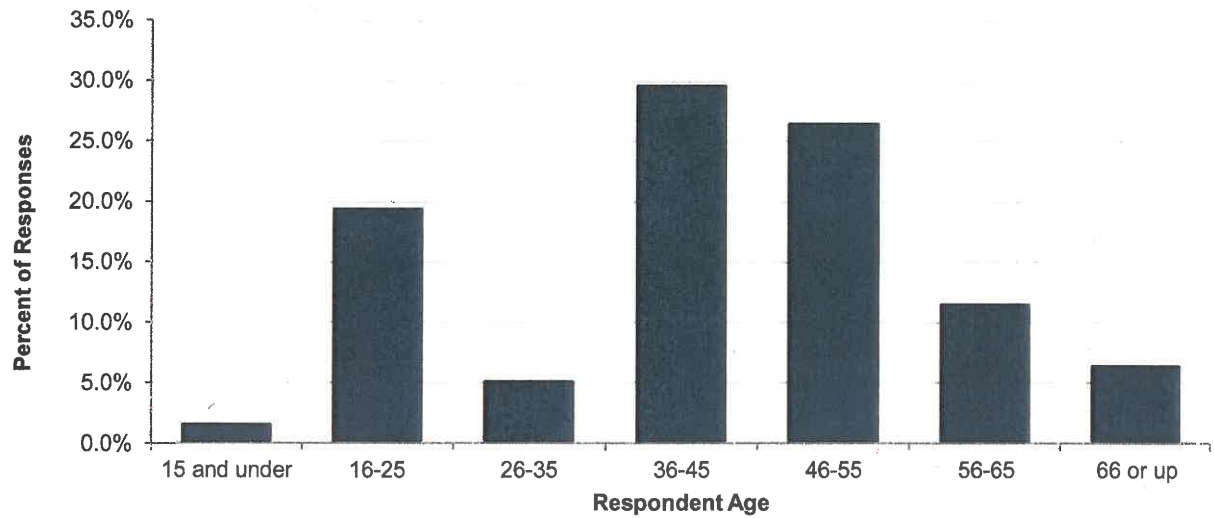
Most respondents were of "intermediate" or "casual" level of experience (45% and 35% respectively).

12. Are you...



The majority, 66%, of respondents were Lake Forest residents. Nineteen percent of respondents attend school in Lake Forest.

13. Respondent Age



393 people responded to the Bicycle Master Plan Survey. The highest response came from people aged 36-45 (almost 30%). The second largest group of respondents were aged 16-25 and represented 19% of the total responses.

Appendix B: Resources

DESIGN CRITERIA

The proposed planning and design of the routes identified in the Bicycle Master Plan should follow the industry standards and accepted design guidelines in the State of Illinois. The following manuals, as updated by the State, or Advocacy Groups should be consulted as part of the implementation of any new bicycle facility.

- Active Transportation Alliance
- Bicycle Parking Guidelines - Association of Pedestrian and Bicycle Professionals
- Guide for the Development of Bicycle Facilities - AASHTO, American Association of State Highway and Transportation Officials
- Illinois Bicycle Rules of the Road - Secretary of State
- League of Illinois Bicyclists (LIB)
- League of American Bicyclists (LAB)
- Manual on Uniform Traffic Control Devices, Part 9 - Federal Highway Administration, U.S. Department of Transportation
- Urban Bikeway Design Guide - NACTO, National Association of City Transportation Officials

FUNDING OPPORTUNITIES (REVISED APRIL 2012)

	Surface Transportation Program (STP)	Highway Safety Improvement Program (HSIP)	Safe Routes to School Program (SRTS)	Transportation Enhancement Activities (TEA)	Recreational Trails Program (RTP)	Federal Transit Administration Capital Funds (FTA)	Bridge (BRT)	State and Community Traffic Safety Program (AOT)	State/Metropolitan Planning Funds (PLA)	Transportation and Community and System Preservation Pilot Program (TCSP)	Access to Jobs/Reverse Commute Program (RJW)	Federal Lands Highway Program (FLH)	Scenic Byways (BTW)
Bicycle lanes on roadway	*	*	*	*	*	*	*	*	*	*	*	*	*
Paved Shoulders	*	*	*	*	*	*	*	*	*	*	*	*	*
Signed bike route	*	*	*	*	*	*	*	*	*	*	*	*	*
Shared use path/transportation trail	*	*	*	*	*	*	*	*	*	*	*	*	*
Recreational trail	*	*	*	*	*	*	*	*	*	*	*	*	*
Spot improvement program	*	*	*	*	*	*	*	*	*	*	*	*	*
Maps	*	*	*	*	*	*	*	*	*	*	*	*	*
Bicycle parking facilities	*	*	*	*	*	*	*	*	*	*	*	*	*
Bicycle share (capital costs only, operations not eligible)	*	*	*	*	*	*	*	*	*	*	*	*	*
Bicycle storage/service center	*	*	*	*	*	*	*	*	*	*	*	*	*
Sidewalks, new or retrofit	*	*	*	*	*	*	*	*	*	*	*	*	*
Crosswalks, new or retrofit	*	*	*	*	*	*	*	*	*	*	*	*	*
Trail/highway intersection	*	*	*	*	*	*	*	*	*	*	*	*	*
Signal improvements	*	*	*	*	*	*	*	*	*	*	*	*	*
Curb cuts and ramps	*	*	*	*	*	*	*	*	*	*	*	*	*
Traffic calming	*	*	*	*	*	*	*	*	*	*	*	*	*
Safety/education position	*	*	*	*	*	*	*	*	*	*	*	*	*
Police Patrol	*	*	*	*	*	*	*	*	*	*	*	*	*
Helmet Promotion	*	*	*	*	*	*	*	*	*	*	*	*	*
Safety brochure/book	*	*	*	*	*	*	*	*	*	*	*	*	*
Training	*	*	*	*	*	*	*	*	*	*	*	*	*

Source: "FHWA Guidance - (Updated October 22, 2008) Bicycle and Pedestrian Provisions of Federal Transportation Legislation"
http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/bp-guid.cfm#bp4

Appendix C: Definitions

AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS)

A nonprofit organization representing highway and transportation departments in the US with a goal to foster the development, operation, and maintenance of an integrated national transportation system.

ACTIVE TRANSPORTATION

A form of travel that is powered by the human body. Most popular active modes of transportation are cycling and walking, but also includes in-line skating, using a wheelchair, riding a skateboard, cross country skiing, canoeing and kayaking.

ALTERNATIVE TRANSPORTATION

A type of transportation that does not utilize the use of a private car such as bicycling or riding a train.

BICYCLE (BIKE) FACILITY

Improvements and provisions made to accommodate or encourage bicycling such as: new or improved lanes, path or shoulders for the use of bicyclists, traffic control devices, shelters and parking facilities for bicycles.

BICYCLE LEVEL OF SERVICE (BLOS)

A nationally recognized measure of on-road bicyclist comfort level as a function of a roadway's geometry and traffic conditions as developed by the League of Illinois Bicyclists.

BICYCLE PARKING:

Infrastructure specifically designed for the safe parking of bicycles.

BICYCLE (BIKE) ROUTE - Signed:

A roadway designated as preferential for bicycle use by adding "bike route" signs, without providing other specific bicycle facilities.

BIKE BOX:

A colored area at a signalized intersection that allows bicyclists to pull in front of waiting traffic. Designed to be used only at red lights, the box is intended to reduce car-bike conflicts, increase cyclist visibility and provide bicyclists with a head start when the light turns green. Of particular concern is the "right hook" collision that can happen when drivers turn right as a bicycle starts straight through an intersection. Bike boxes have been shown to be most effective when paired with a brightly colored bike lane that extends through the intersection, to remind motorists that cyclists may be traveling straight.

BIKE LANE:

Portion of a roadway which has been designated by pavement markings for the preferential or exclusive use of bicyclists.

BIKE TRAIL:

A bikeway physically separated from motorized vehicular traffic by an open space or barrier.

COMPLETE STREET:

A street that is designed for all users alike: motor vehicles, pedestrians and cyclists.

IDOT:

Illinois Department of Transportation.

.....

LANE (TRAVEL)

Lanes on the road designated for vehicular traffic

LEAGUE OF ILLINOIS BICYCLISTS (LIB):

A not-for-profit organization dedicated to improving bicycling conditions in Illinois and a statewide advocate for all Illinois bicyclists, promoting bicycle access, education, and safety.

LIMITED ACCESS ROADWAY:

A highway or arterial road for high-speed traffic with limited or no access to adjacent property, some degree of separation of opposing traffic flow, use of grade separated interchanges to some extent, prohibition of some modes of transport such as bicycles or horses and very few or no intersecting cross-streets.

MODE-SHIFT:

Transitions from one mode of transportation to the other as the advantages are acknowledged.

NACTO:

National Association of City Transportation Officials. A coalition of several US largest cities with a mission to "encourage the exchange of transportation ideas, insights and practices among large cities while advocating for a federal transportation policy that prioritizes investment in infrastructure in the nation's large cities and metropolitan areas."

PAVEMENT SENSORS:

Sensors embedded in the pavement of the road triggering traffic signals to change. Many pavement sensors are not sensitive to bikes.

UTILITARIAN USE OF A BIKE FACILITY:

The use of a bike facility for the purpose of transportation such as commuting or running errands rather than for recreation.

ROAD DIET:

Reducing the width of a vehicle travel lane to accommodate bicycle improvements.

SHARROW:

A street marking installed just right of center in a vehicle travel lane to indicate an area for bicyclists. Sharrows are used when vehicle lane width is not great enough to allow a car and bike to move side by side. Cars passing bicycles on a route with sharrows may need to cross the road centerline when on-coming traffic has cleared to move around the cyclist.

SHOULDER:

The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles. Shoulders are recognized as the best way to accommodate bicyclists in rural areas.

TRAFFIC VOLUME:

The average amount of traffic passing on a street measured in Average Annual Daily Traffic Count (AADT or ADT), which is the average number of cars per day on a given section of a road. AADT is reported as one number, indicating both lanes of traffic combined or as two numbers, one for each lane of traffic. Low = Under 2,000 AADT; Medium = 2,000 to 10,000 AADT; High = Over 10,000 AADT.

Appendix D: Engineering Priorities

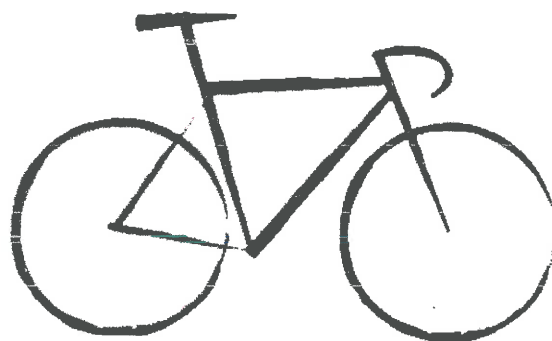
Connection	Improvement/Bicycle Facility	Priority Level		
		High	Med.	Low
Everett/Old Elm Roads (Fort Sheridan to West Metra Station and I-94 Overpass)	Improve bicycle crossing at the intersections with HWY 41 and Route 43 by incorporating bike boxes and sensors.	X		
	Improve the roadway surface conditions.	X		
	Replace existing signage and install updated signage.	X		
	Install Sharrows.	X		
Westleigh Rd	Improve bicycle crossing at the intersections with HWY 41 and Route 43 by incorporating bike boxes and sensors.	X		
	Install sharrows between HWY 41 and Waukegan Road.		X	
	Install Share the Road signage.	X		
	Improve the roadway surface conditions.	X		
	"Road Diet" between Route 41 and Western Ave to provide a wide shoulder/bike lane for bicyclists.		X	
Route 60 (Route 41 to Tollway)	Coordinate with State authorities and surrounding land holders to develop a vision for Route 60 corridor and the surrounding connection opportunities including a railroad crossing north of Route 60.	X		
	Improve bicycle crossing at the intersections with Route 43 by sensors and pavement markings at crossing.			X
Laurel Ave (Robert McClory Bike Path to Skokie Valley Bike Path)	Improve intersection with Green Bay Road.	X		
	Install wayfinding signage on Western Ave to Woodland Rd to provide a connection to the Robert McClory Bike Path.		X	
	Improve the roadway surface conditions.			X
	Install wayfinding signage along Laurel Ave.			X
Deerpath (Skokie Valley Bike Path to Middlefork Savanna Trail)	Improve bicycle crossing at the intersections with Route 43 by incorporating bike boxes.	X		
	Improve intersection with HWY 41.	X		
	Install Sharrows.		X	
	Improve the roadway surface conditions.			X
	Provide connection to Middlefork Savanna Trail.			X
	Install wayfinding signage showing alternative route along Ahwanee/Onwentsia.	X		
Deerpath (Robert McClory Bike Path to Forest Park)	Install wayfinding signage and "Bike Route" signs.		X	
	Provide improved bicycle parking at Forest Park.	X		
	Improve the roadway surface conditions.			X
Onwentsia-Ahwanee	Install wayfinding signage and "Bike Route" signs.	X		
	Improve the roadway surface conditions.		X	

Connection	Improvement/Bicycle Facility	Priority Level		
		High	Med.	Low
Lake and Ravine Tour (Ringwood-Mayflower-Spring-Lake-Spruce-McClory Bike Path)	Install wayfinding signage and "Bike Route" signs.		X	
	Improve the roadway surface conditions.		X	
Conway Farms (Everett Rd to Route 60)	Install wayfinding signage and "Bike Route" signs.		X	
	Improve the roadway surface conditions.			X
Field Drive (Route 60 to Municipal Services Building)	Install sharrows.			X
	Install wayfinding signage and "Bike Route" signs.		X	
	Improve the roadway surface conditions.			X
	Provide bicycle parking at office buildings.			X
Middlefork Drive (Waukegan Rd. to Middlefork Savanna Trail)	Install wayfinding signage and "Bike Route" signs.			X
	Improve the roadway surface conditions.			X
Telegraph Road (West Lake Forest Train Station South to Bannockburn)	Install wayfinding signage and "Bike Route" signs.			X
	Improve the roadway surface conditions.		X	
Ridge Rd (Skokie Valley Bike Path to Senior Center and Northcroft Park)	Install wayfinding signage and "Bike Route" signs.		X	
	Improve the roadway surface conditions.	X		
Waukegan Rd (Lake Bluff-Lake Forest Bannock-Connection)	Coordinate regional connections with state authorities, Village of Lake Bluff, Village of Bannockburn and surrounding land owners		X	
	Provide wayfinding signage.		X	
	Modify existing side path to meet standards outlined in the Bicycle Master Plan.		X	
Robert McClory Bike Path	Improve the pathway surface conditions.	X		
	Provide a multi-use connection between Illinois and Woodland Roads.	X		
	Provide wayfinding signage.	X		
	Clear pathway of brush and vegetation that restricts visibility and is hazardous to trail users.	X		
Skokie Valley Bike Path	Improve the pathway surface conditions.		X	
	Provide wayfinding signage.	X		
	Clear pathway of brush and vegetation that restricts visibility and is hazardous to trail users.		X	

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JUNE 2013



Keep on Pedaling!





LAKE FOREST SUSTAINABILITY PLAN

JULY 2016

*Created by the City of Lake Forest with support from the
Lake Forest Collaborative for Environmental Leadership*



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SPECIAL THANKS TO THE RESIDENTS OF LAKE FOREST AND THE FOLLOWING
ORGANIZATIONS FOR THEIR INPUT...

American Legion, McKinlock Post #264

City of Lake Forest

Deerpath Middle School

Dickinson Hall

Elawa Farm Foundation

Gorton Community Center

GreenMinds of Lake Forest and Lake Bluff

Lake County Sustainability Office

Lake Forest Academy

Lake Forest City Council

Lake Forest Civic Beautification Committee

Lake Forest College

Lake Forest Country Day School

Lake Forest Library

Lake Forest Open Lands Association

League of Women Voters LF/LB

School District 67

School District 115, Lake Forest High School

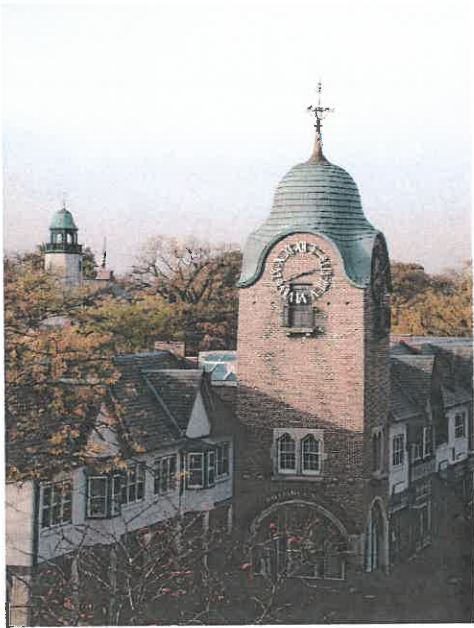
Village of Lake Bluff

Woodlands Academy



INTRODUCTION

The 2013-2018 Lake Forest Strategic Plan includes a goal to “develop a Lake Forest Sustainability Plan to identify priorities and guide future initiatives.” The Strategic Plan further recommends that the community take a “leadership role in modeling best practices in environmental sustainability” in



collaboration with educational institutions, property owners, neighboring communities, garden clubs, and land management associations¹. These recommendations reflect the intent of the City’s original 1861 motto “Love of Nature and Science”, the desire to protect Lake Forest’s unique ecosystems, and desire to nurture pride in the community’s conservation ethic for generations to come.

In 2015, the City requested the assistance of the Lake Forest Collaborative for Environmental Leadership (“LFCEL”) to develop the Sustainability Plan. With representatives from Lake Forest School Districts 67 and 115, Lake Forest Open Lands Association, Lake Forest College, and the City of Lake Forest, the LFCEL is a volunteer organization formed to educate and engage the community in environmental action and to promote sustainable practices within the City.

The mission of the LFCEL is to combine the collective resources of its member institutions to recognize and address existing issues while identifying new programs and approaches that encourage environmental awareness and action. LFCEL’s goals include protecting Lake Forest’s unique natural heritage; enhancing residents’ quality of life; making meaningful contributions to creating a healthier community and local ecosystems; and expanding the conservation ethic and residential pride.

The purpose of the Sustainability Plan (“Plan”) is to identify the issues and opportunities most relevant to Lake Forest and its natural resources, particularly land, water and air. Building on the City’s current successes and strengths, the Plan identifies specific actions City staff, residents, and businesses should consider when addressing the issues and opportunities.

CURRENT LAKE FOREST SUCCESSES

- Named a Tree City USA for 36 years
- Finalist for “Top Transit Suburb” with high walkability
- LEED Gold certification for new Municipal Services Building
- Purchased 100% renewable electricity for 2 years through municipal aggregation saving residents >\$4 million
- Replaced streetlights with LEDs
- 43% recycling rate in 2015

¹ http://www.cityoflakeforest.com/assets/1/7/SPS_Report_2012_final.pdf



As stated in the Strategic Plan, “we must strive to sustain our natural resources and environment for future generations by ensuring that policies, activities, and operations are environmentally-responsible, efficient, and fiscally-minded.” Lake Forest’s residents, businesses, and City staff can make significant contributions by following the recommendations of the Plan and by actively participating in its implementation.

Lake Forest has a natural beauty and unique local ecosystems that first attracted our forefathers and continue to attract people to the community today. While our natural landscapes are certainly beautiful and provide wonderfully unique recreational opportunities for residents, many also support a valuable and rare biodiversity that receives the highest level of recognition in our State. It is important to preserve this natural beauty for current residents and for future generations, ensuring the community remains a highly desirable place to live, work, and raise families.

CREATING LAKE FOREST'S SUSTAINABILITY PLAN

Lake Forest joins many other organizations in creating a Sustainability Plan, as the concept of sustainability has become a strategic priority for businesses and governments around the world in the last 5-10 years.

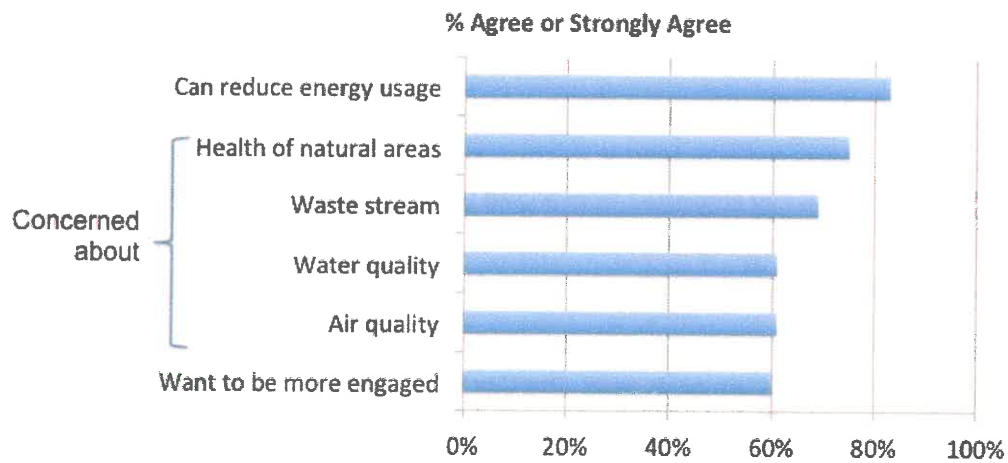
The City, together with the Lake Forest Collaborative for Environmental Leadership ("LFCEL"), began its plan development by reviewing Sustainability Plans from other Illinois communities and government organizations including the Chicago Metropolitan Agency for Planning, Lake County, City of Chicago, Highland Park, Northbrook, Evanston, Oak Park/River Forest, and Normal.

From this research, the LFCEL identified five categories and associated potential actions that are most relevant to Lake Forest, specifically:

- Stormwater Management and Water Use
- Ecosystem Vitality and Ravine Conservation
- Waste Management
- Renewable Energy and Energy Efficiency
- Transportation and Air Quality

Requesting Community input was a critical step in developing the plan. The City and LFCEL conducted an on-line survey in the summer of 2015, which included a series of questions and a request for action steps related to the five categories. Over 400 residents responded to the survey, and key results include:

- 80% of respondents agree or strongly agree that Lake Forest should create a Sustainability Plan.
- 82% of respondents agree or strongly agree with the statement "I have an opportunity to reduce energy usage in my home".
- More than 60% of respondents are concerned about the health of our natural areas, air and water quality, and Lake Forest's waste stream.
- 3 out of 5 respondents want to be more engaged in the City's sustainability efforts.
- Critical issues identified by respondents include pesticide use reduction, replanting trees in our community, preserving ravines, educating residents on the impact of non-biodegradable materials and toxins on our stormwater, polystyrene/Styrofoam elimination, bike friendly streets, and making homes more energy efficient.



2015 Lake Forest Sustainability Survey Results

To continue gathering resident input, the LFCEL hosted a Community Engagement Forum in October 2015, student forums at Lake Forest High School and Lake Forest College in February 2016, and a second Community Engagement Forum in April 2016. At each of these forums, participants shared ideas and voted on what they considered to be the highest priority and secondary priority actions in each of the five categories.

From an initial list of 66 potential actions, the participants identified 14 high priority and 12 secondary priority actions reflecting the consensus view from the various community forums.

STORMWATER MANAGEMENT & WATER USAGE

Lake Michigan and the Great Lakes are the world's largest source of fresh water with 20% of the earth's available supply. In addition to providing abundant recreational opportunities for residents, Lake Michigan is the source of Lake Forest's potable or drinking water.

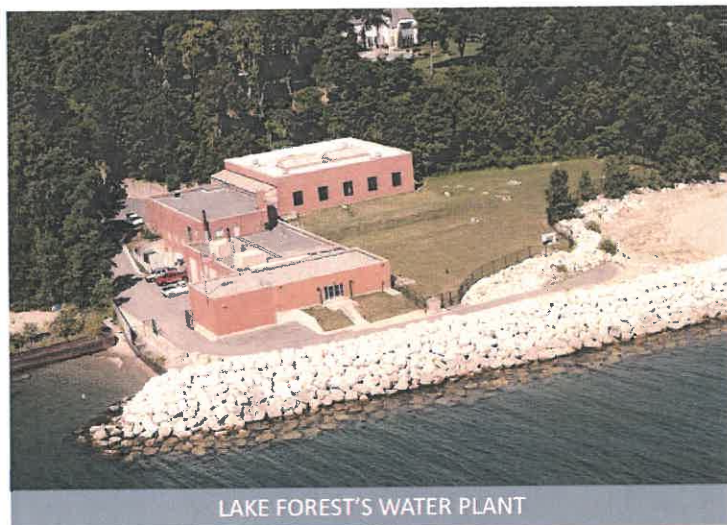
The City cleans and purifies its potable water at the Lake Forest water treatment plant, originally constructed by private residents in 1890 as the Lake Forest Water Company, and later purchased by the City in 1921. In 2004, the City converted from a sand filtration system to an ultrafiltration or membrane system, the first of its kind in Illinois. Two water intake pipes (one $\frac{3}{4}$ mile and the second $\frac{1}{2}$ mile into the lake) supply the treatment plant, which can process 12-14 million gallons of water per day.

In recent years, the water plant has nearly exceeded its capacity during the hot summer months when irrigation and lawn watering are at its peak. The City subsequently adopted watering restrictions from May 15 through September 15 to defer the need for costly upgrades to the plant and water system.

Lake Forest's wastewater – that is water flushed down the toilets, sinks and drains of City homes and businesses - flows through the City's sanitary sewer system to a large collector pipe under Highway 41 and to the North Shore Sanitary District plant on Clavey Road in Highland Park. At this plant, a series of processes separate the solid and liquid waste while cleaning and sanitizing the water to meet all applicable state and federal water standards. Ultimately, the treated wastewater empties into the Skokie River and lagoons just south of the Chicago Botanic Gardens, flowing to the Chicago River, connecting to the Illinois River, to the Mississippi River, and eventually to the Gulf of Mexico.

Lake Forest's stormwater system is completely separate from its wastewater sewer system, and two unique features distinguish stormwater flow in Lake Forest.

First, the sub-continental divide between the Great Lakes and Mississippi River watersheds bisects Lake Forest with Green Bay Road as the natural divider. This means that rainfall landing on the east side of Green Bay Road will, with assistance from the City's storm sewer system, naturally make its way to Lake Michigan. Rainfall on the west side of Green Bay Road will naturally flow through the storm sewer system to the Skokie River or the Middlefork of the North Branch of the Chicago River.





The thirteen miles of ravines in eastern Lake Forest, which serve as natural channels into Lake Michigan, are the second distinguishing feature of the City's stormwater flow. Most of the City's stormwater runoff east of Green Bay Road flows through the stormwater sewer system into the ravines before emptying into Lake Michigan.

Many of Lake Forest's buildings, streets, driveways, and parking lots are impermeable and stormwater washes over these surfaces collecting sediment, oil, chemical pollutants, and other dirt and debris. East of Green Bay Road, this polluted runoff flows directly through the ravines and directly into Lake Michigan, the source of Lake Forest's drinking water.

Increasing volumes of rain from severe storms, exacerbated by residents connecting their downspouts and draining their swimming pools directly into the storm sewer system, increase ravine and land erosion, degrade wildlife habitat, and degrade water quality.

Green infrastructure—such as trees, native plants, bioswales, rain gardens, rain barrels, permeable surfaces and green roofs— absorbs rainwater, reduces stormwater runoff, protects ravine stability and habitat health, and improves Lake Michigan water quality.

The following goals and actions reflect Lake Forest's priorities for conserving and protecting the unique water resources of our community. While Lake Michigan and the Great Lakes may currently offer an abundant supply of fresh water, we recognize that they are not infinite resources and, as a lakeshore community, must treat them responsibly. The goals and actions also reflect the importance of minimizing the downstream effects of what enters Lake Forest's wastewater and stormwater systems.

Goals

- Reduce the volume of stormwater entering the ravines, Skokie River, and Middlefork of the Chicago River North Branch using stormwater infrastructure best management practices
- Improve the quality of water entering Lake Michigan through the ravines
- Increase water conservation
- Educate residents on the importance of Lake Forest-specific water issues

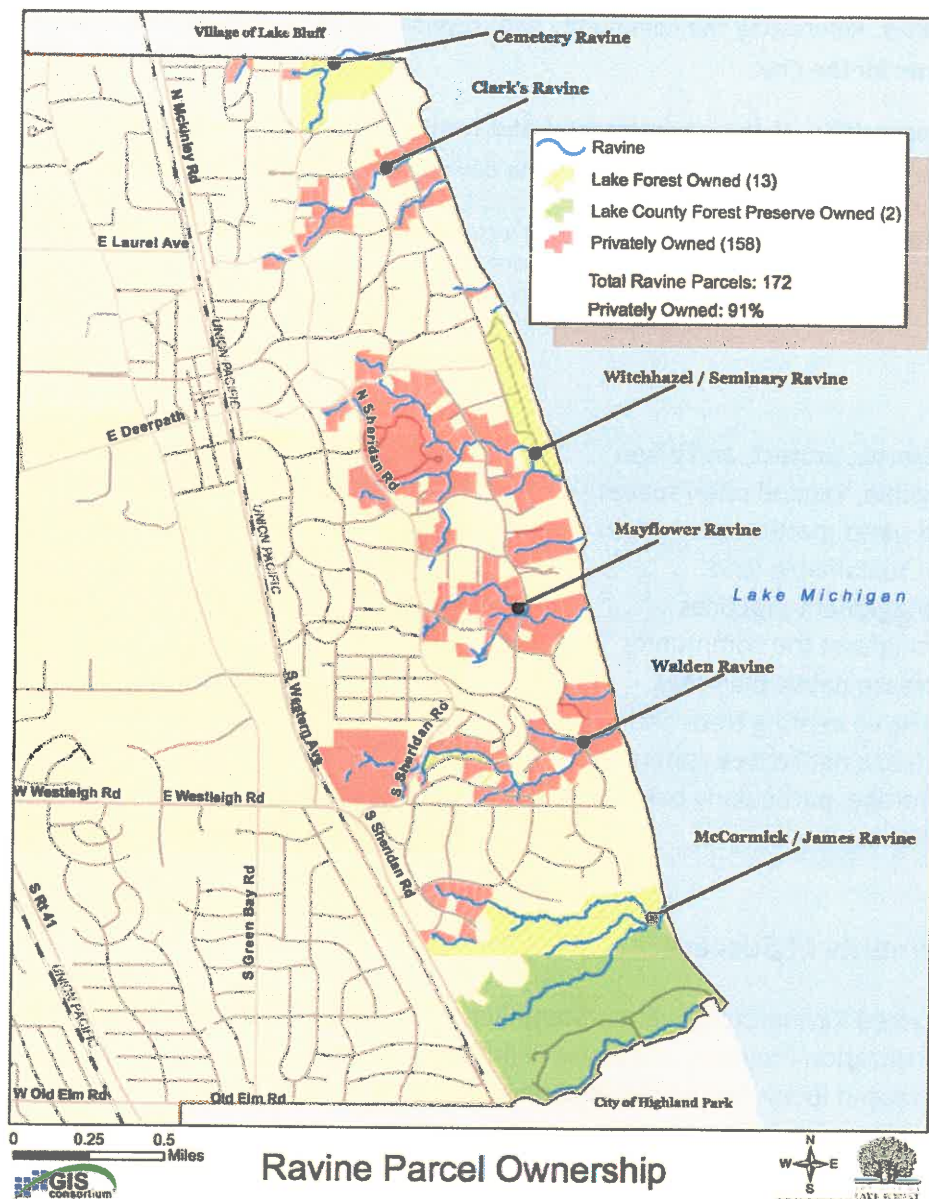
Measurements of Success

- Decreased water usage per household and business per year
- Increased number of households with downspout disconnection and/or rain barrels
- Increased square footage/number of bioswales and rain gardens
- Increased square footage of permeable surfaces
- Increased public awareness of water issues

ECOSYSTEM VITALITY & RAVINE CONSERVATION

Lake Forest has a natural beauty with abundant trees, wetlands, prairies, savannas, ravines, gardens, and parks. The City is home to 3.5 miles of lakefront, over 11 miles of bike trails, 446 acres of public parks, over 800 acres of protected open space, and 13 miles of nature preserve trails.

Lake Forest's thirteen miles of ravines, the majority of which are on private property, are a unique and beautiful natural landform that helps to define our City's character. The ravines function as natural drainage systems for stormwater runoff flowing towards Lake Michigan, habitat for many rare plants and animals, and as physical support for many homes.



Unfortunately, accelerated erosion is occurring along ravine slopes as a result of excessive stormwater runoff, residential and commercial development, and invasive species compromising the resilience of ravines to maintain their structure. The erosion from stormwater and private drainage results in slumping of ravine slopes, poor water quality, and destroyed natural habitat.

Residents can help conserve and protect our ravines by reducing the volume of water entering the City's stormwater sewer system, limiting the watering of lawns, using organic fertilizers, planting native plants, minimizing land paving and irrigation, addressing direct drainage of pools and other stormwater, and by properly disposing of yard waste.

Lake Forest also faces a significant threat from the devastating Emerald Ash Borer, in addition to increasing threats to other tree species. Our community expects to lose over 100,000 ash trees in the next 5-10 years. Reforesting the community with diverse, native species for the future has become a critical priority for the City.

Finally, in recognition of the environmental and health benefits of locally grown food, the City has expanded its Open Air Market and increased the development of school and community gardens.

The following goals and actions reflect the City's commitment to ecosystem vitality and preservation of our unique natural spaces.

Goals

- Preserve, protect, and when possible, expand open spaces and parks, particularly ravines
- Use sustainable land management practices throughout the community
- Increase native plantings
- Preserve existing trees and increase native tree canopy coverage, particularly oak varieties.



Measurements of Success

- Enacted Ravine Conservation/Steep Slope Ordinance, Pesticide Protocol, Landscaper Certification Program, and Noise Pollution Ordinance
- Increased linear feet of restored ravines
- Increased square footage of lawns converted to native plantings
- Increased number of school and community gardens

WASTE MANAGEMENT

Waste management includes the collection, transportation and disposal of garbage and other unwanted materials. Unless diverted through recycling, reuse, composting or other means, Lake Forest's waste ends up in a landfill where it is buried and left to decompose, a process that can take hundreds of years. Waste items made from plastic and polystyrene can take millions of years to decompose.



According to a 2014 Illinois Environmental Protection Agency report, the six active landfills serving the Chicago metropolitan region have only 13 years of capacity remaining at current disposal rates². Therefore, the continuation and expansion of recycling, composting, and hazardous and electronic waste management programs are critical to reduce the strain on existing facilities.

Lake County officials have recognized the need to significantly reduce the volume of material sent to landfills and established a goal of increasing the county-wide recycling rate to 60% by 2020.

A recent local survey reported that Lake Forest residents create 702 pounds of household waste per person annually, the second highest of seven North Shore communities analyzed³.

Lake Forest currently operates a comprehensive waste management program. City staff collects refuse from residents twice weekly and disposes it at the Advanced Disposal Services Landfill in Zion. Yard waste is also collected twice weekly, transported to Lake Forest's Compost and Recycling Center on Route 60 ("Recycling Center"), and composted on site. Recycled items are collected once per week, trucked to the Recycling Center and re-loaded into transfer trailers. The trailers are transported to the Resource Management facility in Chicago Ridge, where the material is separated and sold to other businesses worldwide.

The Recycling Center is open on weekends for residents to drop off refuse, yard waste, recyclables, metal, electronics, clothing, shoes and textiles. Residents can also pick up mulch, compost and wood chips at the center for free.

Lake Forest residents can drop off hazardous household waste - including household chemicals, oil-based paint, medications, and electronics - at the Solid Waste Agency of Lake County (SWALCO) permanent facility in Gurnee. SWALCO also holds a collection event at Lake Forest Municipal Services Building every September.

² <http://www.epa.illinois.gov/Assets/iepa/waste-management/landfills/landfill-capacity/landfill-capacity-report-2015.pdf>, p. 11

³ <http://jwcdaily.com/2015/05/07/garbage-in-garbage-out/>

The Lake Forest Police Department collects unwanted medications and prescription drugs at the Lake Forest Police Station in secure drop boxes seven days a week.

The Public Works Department provides residents with the opportunity to purchase compost containers (also termed earth machines) from the City at a below market rate. Sanitation employees deliver the compost containers to residents.

In addition to backyard composting, Lake Forest residents interested in composting food waste can have it picked up weekly or bi-weekly by Collective Resource, Inc., a food scrap pickup service based in Evanston. This company provides residents with a bucket to fill with food waste and leave at the door, reducing household garbage volume by at least 30%. Collected waste is delivered to a commercial composting site to become useful compost. Unlike backyard composting, Collective Resource has no dairy, meat, animal waste, or food-soiled paper restrictions.

The following goals and actions reflect Lake Forest's commitment to expand its existing waste management programs and to further reduce the volume of material sent to the landfill.

Goals

- Reduce the amount of landfilled waste
- Improve recycling rates and increase awareness of recycling and responsible disposal alternatives
- Increase composting
- Increase material reuse

Measurements of Success

- Recycling rate of 60% by 2020, consistent with the Lake County goal
- Increased residential and commercial composting
- Decreased use of plastic bags and polystyrene

ENERGY EFFICIENCY & RENEWABLE ENERGY

Energy is something taken for granted in our daily lives - we switch on the lights, turn on the stove, or watch television without even thinking about where the energy comes from to run them. Yet the negative air, water and climate impacts from conventional energy production are significant. Recent technology advances now provide opportunities to reduce the harmful impacts of conventional energy by decreasing our energy usage and increasing the amount of renewable energy we consume.

The primary forms of energy used in Lake Forest's homes and businesses are electricity and natural gas. Electricity powers lighting, air conditioning, appliances, electronics, computers, and phones. Lake Forest's electricity is currently supplied and delivered by Commonwealth Edison ("ComEd") and usage is measured in kilowatt hours (kWh).

Natural gas is the primary fuel for furnaces or space heating in Lake Forest and is also commonly used for hot water heaters, clothes dryers, and cooking in the residential sector. Our natural gas is supplied and delivered by North Shore Gas, and usage is measured in therms.

A 2010 study by CNT Energy found that Lake Forest households use significantly more energy than the typical Lake County home, and our residents have some of the highest energy bills in the region. The average electricity usage per household in Lake Forest is 87% higher than a typical home in Lake County, and the average natural gas usage per household in Lake Forest is 120% higher than the County average. Factors that affect electricity usage include square footage; efficiency of air conditioning, lighting, appliances and electronics; and occupant behavior. Factors that affect natural gas usage include building size and age, building envelope efficiency, efficiency of the furnace and water heater, and occupant behavior.

Average Annual Energy Consumption		
	Lake Forest	Lake County
Average electricity usage per household (kWh)	21,571	11,524
Average natural gas usage per household (therms)	2,708	1,229

Source: CNT Energy 2010 Municipal Energy Profile Project

Lake Forest residents are aware of an energy and cost savings potential, as 82% of the 2015 Sustainability Survey respondents agreed or strongly agreed with the statement, "I have an opportunity to reduce my household's energy consumption."

ComEd began installing advanced digital "smart meters" in Lake Forest in 2016, which will create additional opportunities to obtain real-time energy usage information and more easily reduce household electricity consumption and peak demand.

ComEd's 2015 Environmental Disclosure Statement reveals that the fuel sources for electricity supplied to its customers in 2015 were 37% coal, 36% nuclear, 23% natural gas, and 3% wind and hydroelectric⁴.

Declining costs for solar panels and installation, together with creative financing options from developers, make solar photovoltaic (PV) an increasingly viable alternative for homes, businesses and institutions in Illinois who wish to reduce their consumption of electricity from conventional sources and increase their renewable supply.



The following goals and actions reflect Lake Forest's commitment to expanded energy efficiency and renewable energy.

Goals

- Reduce energy consumption in homes and businesses
- Expand the use of renewable energy throughout the community

Measurements of Success

- Increased number of homes and businesses with renewable energy installations
- Increased participation in ComEd's energy efficiency and demand response programs
- Installed community (shared) solar project and/or model renewable energy system at a municipal facility
- Enacted Sustainable Development Incentive Program

⁴ https://www.comed.com/documents/about-us/environmental-commitment/environmental_disclosure_12mons_ending_20151231.pdf

TRANSPORTATION & AIR QUALITY

Transportation is the largest source of air pollution in the U.S., leading to significant risks for human health and the environment. Major pollutants from the burning of gasoline and diesel fuel in motor vehicles and other equipment include:

- Particulate matter (PM). These particles of soot and metals give smog its murky color. Fine particles - less than one-tenth the diameter of a human hair - pose the most serious threat to human health, as they can penetrate deep into lungs.
- Nitrogen oxides (NOx). These pollutants cause lung irritation and weaken the body's defenses against respiratory infections such as pneumonia and influenza.
- Hydrocarbons (HC). These pollutants react with nitrogen oxides in the presence of sunlight to form ground level ozone, a primary ingredient in smog.
- Carbon monoxide (CO). This odorless and poisonous gas is formed by the combustion of gasoline and diesel and is emitted primarily from cars and trucks.
- Sulfur dioxide (SO₂). Power plants and motor vehicles create this pollutant by burning sulfur-containing fuels, especially diesel fuel. SO₂ can react in the atmosphere to form fine particles and poses the largest health risk to young children and asthmatics.
- Greenhouse gases. Motor vehicles also emit carbon dioxide, a potent greenhouse gas.

The 2015 Urban Mobility Scorecard ranked Chicago as having the third worst automotive travel delays among very large urban areas (behind only New York and Los Angeles), with 303 million extra hours of travel time each year due to congestion⁵. This translates to 61 hours of travel delay per commuter each year and results in 147 million gallons of excess gasoline consumed.

Lake Forest experiences its own congestion, particularly on weekday mornings and afternoons during the school year. The drop off and pickup of Deerpath Middle School students leads to significant

traffic bottlenecks on Deerpath Road twice each weekday. Similarly, traffic flow on McKinley Road is impaired each school day due to the arrival and departure of the high school students.



⁵ <http://d2dtl5nnlpfr0r.cloudfront.net/tti.tamu.edu/documents/mobility-scorecard-2015-wappx.pdf>

Local air pollution also comes from idling vehicles and gas-powered landscaping equipment. Idling occurs at schools, train stations, parking lots and roadways throughout the City. With over 300 professional landscaping companies licensed to work in Lake Forest, emissions from lawn care and snowplowing are significant.

The following goals and actions reflect Lake Forest's commitment to reduce negative air quality impacts from transportation.

Goals

- Reduce traffic congestion
- Reduce idling
- Reduce air pollution from the City's fleet and equipment
- Increase bicycling and utilization of other non-automotive forms of transportation



Measurements of Success

- Enacted Anti-Idling policy
- Increased percentage of City fleet that is hybrid or electric vehicles
- Reduced traffic counts on Deerpath and McKinley during school days
- Achievement of the Bicycle Master Plan goals

ACKNOWLEDGEMENTS AND CREDITS

CITY COUNCIL

Cornelius B. Waud, Mayor
John . Anderson, First Ward
Samuel J. Henry, First Ward
Thomas J. Tropp, Second Ward
Howard J. Kerr, Second Ward
Gail T. Hodges, Third Ward
Henry T. Chandler, Third Ward
Mary Ann Pekarek, Fourth Ward
G. Bishop Gallagher, Fourth Ward

Rhett W. Butler, Mayor (1993-96)
John E. Preschlack, First Ward (1990-96)
Abigail G. Fassnacht, Second Ward (1991-97)
Richard C. Ernest, Fourth Ward (1990-96)

PLAN COMMISSION

Donald C. Battaglia, Chairman
James E. Morris, First Ward
John C. Litchfield, First Ward
Ren Goltra, Second Ward
Roger J. Mohr, Third Ward
Lawrence R. Temple, Third Ward
David G. Williams, Fourth Ward

Corinne G. Wood, First Ward (1993-97)
Thomas J. Tropp, Second Ward (1994-97)

COMPREHENSIVE PLAN ADVISORY COMMITTEE

Deerpath Garden Club
Forest Bluff Garden Club
Garden Art Club of Lake Forest and Lake Bluff
Junior Garden Club of Lake Forest - Lake Bluff
Lake Forest Garden Club
North Shore Horticultural Society

March 1998

Woodlands Garden Club
Lake Forest Foundation For Historic Preservation
Lake Forest - Lake Bluff Historical Society
Lake Forest Open Land Association
Chamber Of Commerce
Board of Education, District #67
Board of Lake Forest High School District #115
Lake Forest Academy
Lake Forest College
Barat College
Lake Forest Country Day School
Lake Forest Graduate School Of Management School of St. Mary
Woodlands Academy of the Sacred Heart
Lake Forest Hospital
Gorton Community Center
Lake Forest Library Board
Rotary Club of Lake Forest
Volunteer Bureau of Lake Forest- Lake Bluff
Recreation Board
American Youth Soccer Association
Friends of Lake Forest

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Larry Okrent - Business District aerial photographs, pg. 54, 60

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