STRATEGIC REGIONAL ARTERIAL CORRIDORS

LAND USE COMPATIBILITY

Prepared by Northeastern Illinois Planning Commission Staff

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STRATEGIC REGIONAL ARTERIAL CORRIDORS LAND USE COMPATIBILITY

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STRATEGIC REGIONAL ARTERIAL CORRIDORS LAND USE COMPATIBILITY

EXECUTIVE SUMMARY

A. Background:

An objective of the SRA planning process, initiated through Operation GreenLight, is to coordinate land uses, development projects and transportation improvements. The Strategic Regional Arterial Corridors Land Use Compatibility project began in April of 1992 as an effort to identify how the design of Strategic Regional Arterials might be more compatible with adjacent land uses. The ultimate goal of the study, is to reach agreement regarding future land uses and functions of the roadways within each corridor.

B. Implications for Congestion Management:

By promoting compatible urban design and roadways, this study aids in managing congestion. One of the functions of Strategic Regional Arterials is to supplement the regional expressway network. This function is preserved through access management which minimizes traffic collisions and promotes consistent traffic flows along arterial roadways. When adjacent land uses are planned to facilitate alternative modes of travel (walking, bicycling, and public transportation) this also contributes to the reduction of traffic congestion. Together, these objectives may be reached through coordinated planning efforts which involve local municipalities, counties, and the Illinois Department of Transportation.

C. Project Design:

Portions of three Strategic Regional Arterial roads were studied in northeastern Illinois: Illinois Route 59 (Wilson Road to Caton Farm Road), U.S. Route 30 (Interstate-57 to Western Avenue), and North Avenue (Cicero Avenue to Lake Shore Drive).

Each corridor was carefully analyzed to identify conflict areas and investigate land use management techniques that influence service levels of SRA routes. These techniques include the following:

(1) Land use mix and density,
(2) Site design considerations,
(3) neighborhood connectivity,
(4) access management techniques,
(5) demand management,
(6) parking management,
(7) freight delivery and distribution systems,
(8) thoroughfare plans in SRA service areas,
(9) right-of-way preservation,
(10) pedestrian and bicycle access plans,
(11) transit service plans, and
(12) transit accessible design considerations.

D. **Summary of Analysis:**

Part I - IL Route 59 (Wilson Road to Caton Farm Road)

Approximately 20 miles of Illinois Route 59 were studied through portions of Warrenville, Naperville, Aurora, unincorporated Will County, and Plainfield. Existing land use consists of vacant/agricultural land and open space (68%); residential land (21%); and employment-based land (11%). This corridor is developing rapidly, and land use plans reflect a 55% increase in development (compared with land uses existing in 1990). The corridor is currently served by Pace buses, and the Burlington Northern train station south of North Aurora Road. Though pedestrian and bicycle access is limited along the corridor, there are opportunities to improve access as development continues.

Traffic volumes averaged between 21,000 - 44,400 vehicles per day within the northern portion of the study corridor (DuPage County), and between 12,700 - 15,400 vehicles per day within the southern portion of the corridor (Will County). Daily vehicle estimates for the year 2010 are between 30,000 - 50,000 for the north corridor, and between 17,000 - 30,000 for the southern corridor.

Part II - U.S. Route 30 (I-57 to Western Avenue)

A 3 1/2 mile segment of US 30 was studied within the Villages of Matteson, Park Forest, and Olympia Fields in Cook County. This corridor is located in an area which has experienced extensive development, and serves as the economic center of the south suburban area. Land uses consist primarily of single family residential (42%), office and commercial developments (10%). Other land uses include institutional facilities and utilities (8%). Though forty percent of the study area is either open space or vacant, more than half of this land is planned for development.

The corridor is served by two Metra commuter rail stations in Matteson, and two Pace bus routes. Pedestrian and bicycle access is inhibited by a lack of connectivity between residential subdivisions, adjacent retail shops and businesses. Traffic volumes along US 30 average between 32,000 - 37,000 vehicles per day, and traffic is forecasted to exceed 50,000 vehicles per day by the year 2010.

Part III - North Avenue (Cicero Avenue to Lake Shore Drive)

Over half of the land within the North Avenue corridor is residential, consisting of duplex (50%) and multi-family units (6%). Other land uses include manufacturing (17%), commercial and office (15%), institutional (4%), parks (8%). There is very little vacant land in the corridor, and many older, industrial buildings are being converted for commercial, office and residential uses.

North Avenue is a major east-west route within the City of Chicago. It carries 18,900 - 33,600 vehicles per day (from Cicero Avenue to LaSalle Street) and by the year 2010, it is expected to carry an average of 30,000 - 50,000 vehicles per day. Three Metra commuter trains serve the North Avenue corridor. There are also three CTA rapid transit lines and extensive bus service through the corridor. With the variety of retail shops and businesses, proximity of lake front parks, and transit accessibility in this area, pedestrian and bicycle activity is also quite high.

E. Recommended Development Actions:

Following the analysis of existing and future land use and transportation, specific recommendations to promote compatible land and roadway design were developed. These recommendations, which were primarily focused on changes in land use, site design, access management, and road way design, were discussed with municipalities and counties along each corridor, as well as with the Illinois Department of Transportation.

Part I - IL Route 59

Compatibility issues of particular concern to local communities include access management, pedestrian/bicycle access, reducing traffic congestion while preserving landscaping and community character. Recommendations to address these issues of compatibility between the roadway and adjacent land are summarized below. Detailed actions are located in Section C, beginning on page 23.

In order to manage access from Wilson Road to Diehl Road, commercial driveways are to be consolidated and a frontage road is recommended; pedestrian/bicycle access is recommended between the Illinois Prairie Path and adjacent commercial development; mixed use developments, sidewalks, and "pedestrian friendly" site design is recommended to reduce traffic congestion near the commuter rail station, south of the Burlington Northern tracks; urban design and landscaping improvements are recommended for the area surrounding Fox Valley Shopping Center in Aurora. Between 75th Street and 143rd Street consideration should be given to encourage consolidated access, access from collector roads or mid-mile connectors, and providing pedestrian/bicycle access. From 143rd Street and south to Caton Farm Road, primary recommendations include an alternative alignment for U.S. Route 30; redirected traffic along IL 59; and landscaping and urban design to create a balance between roadway improvements and community character within the downtown Plainfield area.

Part II - U.S. Route 30

Two of the major issues of concern along the U.S. Route 30 corridor are traffic circulation and improvements for pedestrian and bicycle access. While the development of residential and commercial property is planned to increase by more than 28% within the corridor, vehicle traffic is also expected to increase by approximately 26%. Recommendations to improve traffic circulation include the development of a new bus service to serve the Village Center in Matteson and to train stations; consolidating access for properties at Cicero Avenue and at specific locations along US 30, to Western Avenue.

Pedestrian and bicycle access is inhibited by a lack of connectivity between residential subdivisions, adjacent retail shops and businesses. In order to improve bicycle and pedestrian access, it is recommended that the bicycle and pedestrian path proposal developed by the Village of Matteson, be implemented to create a circular route around the Village. It is also recommended that the Old Plank Trail be extended to connect with the Cook County Forest Preserves in the Bloome Township. Local development actions listed in Section II.C. are specifically recommended to alleviate these types of concerns and conflicts.

PART I - ILLINOIS ROUTE 59

(From Wilson Road to Caton Farm Road)

INTRODUCTION

Illinois Route 59 was selected as a pilot project for the SRA Land Use Compatibility Study because it is located in a developing area experiencing the rapid conversion of vacant and agricultural land to more intense land uses. IL 59 is a primary north-south arterial roadway which crosses northeastern Illinois and serves communities located in the counties of Lake, Cook, DuPage, and Will. The purpose of this study was to identify strategies to improve the compatibility between the roadway design and existing/planned land uses along the corridor.

Local Actions

In order to improve planning efforts and communication throughout the twenty mile corridor, NIPC staff coordinated with the Illinois Department of Transportation, DuPage and Will counties, and the communities of Warrenville, Naperville, Aurora, and Plainfield. NIPC staff offered comments to IDOT regarding immediate roadway improvements proposed to widen IL 59 and regarding ultimate designs as an SRA roadway. Staff also met individually with each of the communities and discussed local development actions that might be implemented. These efforts resulted in a list of local development actions to ensure compatibility.

Compatibility

Existing land use along the corridor consists of vacant/agricultural land and open space; residential land; and employment-based land. This area is developing rapidly, and land use plans reflect a 55% increase in development (compared with land uses existing in 1990). With regard to the roadway design, IL 59 is in the process of being widened to six lanes with a 30-foot barrier median (from north of 75th Street to 95th Street) and will continue with four lanes throughout the rest of the corridor (from 95th Street to Caton Farm Road) and south to Shorewood Lane.

Compatibility issues of particular concern to local communities include access management from Wilson Road to Diehl Road; pedestrian/bicycle access and traffic congestion near the commuter rail station area south of the Burlington Northern tracks; reducing traffic congestion while preserving landscaping at the Fox Valley Shopping Center in Aurora; managing access and providing pedestrian/bicycle access between 75th Street and 143rd Street (primarily undeveloped land at the present); and creating a balance between roadway improvements and community character within the downtown Plainfield area. Specific recommendations to address these issues of compatibility between the roadway and adjacent land are located in Section C.

Next Steps

The next phase of this study will require a traffic analysis and urban design assistance in order to evaluate the feasibility of local development actions listed in Section C. The Illinois Department of Transportation and local communities will be involved in the review of this evaluation.

A. COMPOSITE PLANS FOR THE ILLINOIS ROUTE 59 CORRIDOR

Illinois Route 59 is a strategic regional arterial roadway located within Lake, Cook, DuPage, and Will Counties. The IL 59 corridor studied for this SRA Land Use project is approximately 20 miles from Wilson Road in DuPage County, to Caton Farm Road in Will County. The study area includes portions of Warrenville, Naperville, Aurora, unincorporated Will County, and Plainfield. For the purpose of this pilot project, base information was prepared for this 20 mile portion of IL 59 beginning at Wilson Road in Warrenville, to Caton Farm Road south of Plainfield. See Figure I-1, Project Study Area.

Inventory of base information consisted of the following:

- Identification of land uses from 1990 aerial photographs
- Collection of land use plans for the communities of Warrenville, Naperville, Aurora, Plainfield, and Will County
- Identification of development areas
- Identification of regional transit station areas, and
- Identification of regional highway interchange areas

LAND USE INFORMATION

Existing Land Uses

Land adjacent to IL 59 is of semi-rural character (especially within Will County). Approximately 17,125 acres (67.8%) of the land in this corridor is currently vacant, agricultural, or designated open space. As shown below in Table I-1, 20.8% of the land within the IL 59 corridor is residential, and 11.4% is employment-based development (ie. office, commercial, shopping centers, manufacturing, research, and institutional). Development is of highest density adjacent to the Fox Valley Center in Aurora, and in downtown Plainfield.

Table I-1 - LAND USES WITHIN ILLINOIS ROUTE 59 CORRIDOR

LAND USE	EXISTING ACRES	PERCENT OF TOTAL	PLANNED ACRES	PERCENT OF TOTAL
OPEN SPACE/VACANT	17,125	67.8 %	3,070	13.1 %
RESIDENTIAL	5,254	20.8 %	13,029	55.6 %
EMPLOYMENT	2,891	11.4 %	7,323	31.3 %
TOTAL	25,270	100.0 %	23,422	100.0 %

Within the northern portion of the study corridor (Wilson Rd to 103rd Street), there are approximately 8145 acres which are currently vacant or dedicated open space (golf courses,

public parks, wetlands or forest preserves). There are approximately 3223 acres of residential property, 863 acres of manufacturing/ research/warehousing, 537 acres of office development, and 508 acres of the land is commercial. Development near the Fox Valley Center in Aurora is primarily commercial, office and high density residential.

In the southern portion of the corridor, land is of semi-rural character and agriculture is the predominant land use (8980 acres). There are also single family (1987 acres) and multifamily residential developments (44 acres) scattered throughout the corridor. In the central downtown area of Plainfield, the primary land uses are single-family and multi-family residential units. The commercial focus is at the intersection of US 30 and IL 59. From 103rd Street to Caton Farm Road, there are approximately 790 acres of employment-based land uses. See Figures I-2 and I-3, 1990 LAND USE MAPS and Appendix I-A.

Figure I-1

PROJECT STUDY AREA

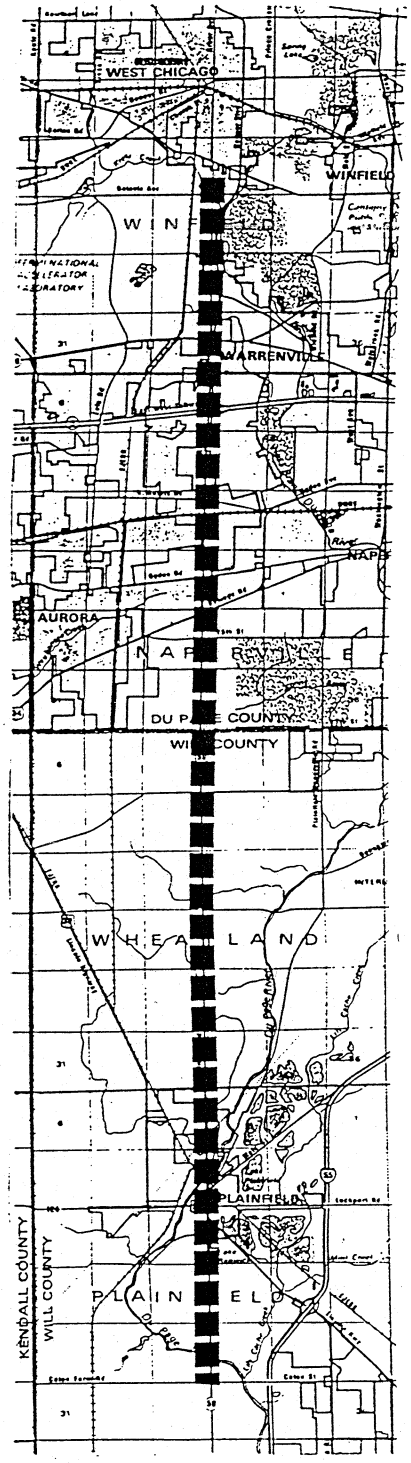


Figure I-2

1990 LAND USE MAP - NORTH CORRIDOR

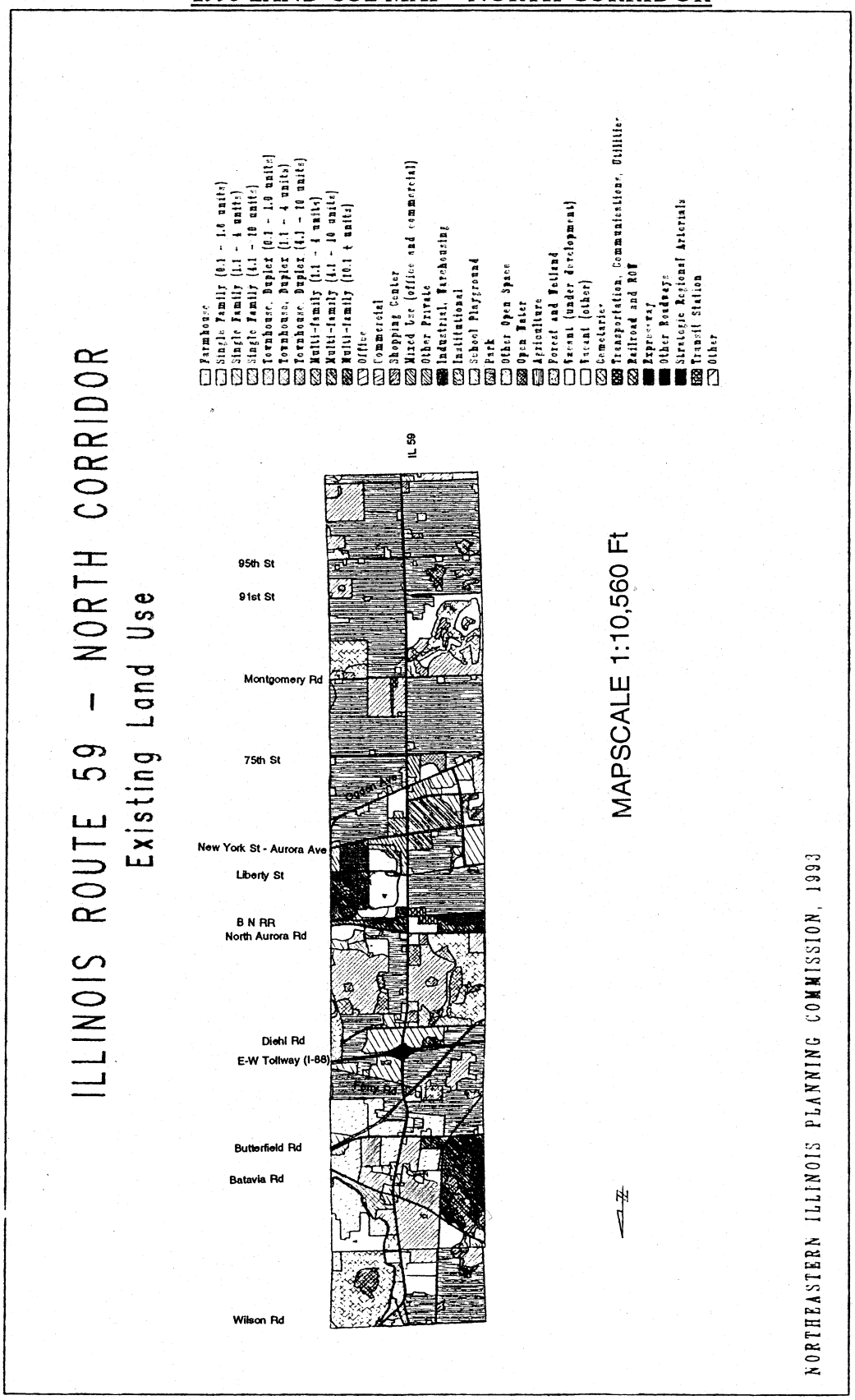
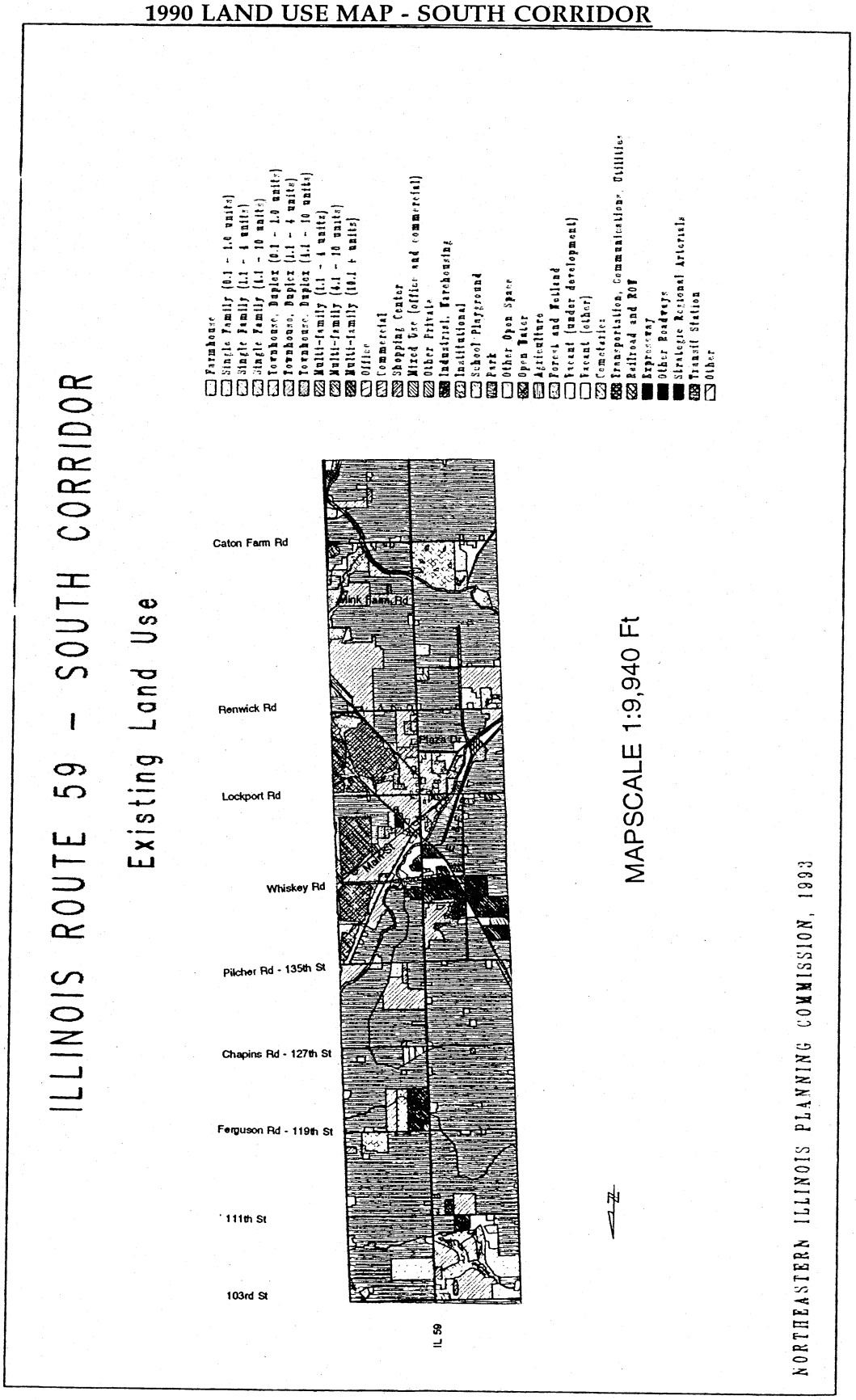


Figure I-3

1990 LAND USE MAP - SOUTH CORRIDOR



Planned Land Uses

North Corridor: Of the 8145 acres of vacant or open space land which existed in 1990, 6900, or 85% is planned for development. Residential develop is expected to increase 76% to 5660 acres in the north corridor. Employment-based development is expected to increase 172% to 5715 acres. Office development will increase to 2600 acres (an increase of 385%), and commercial development is expected to increase 123% to 520 acres.

Within the City of Warrenville, land uses consist primarily of single family residential (1.1 - 4 units/acre), industrial/manufacturing, and strip commercial. In Naperville, the interchange area of the East-West tollway is planned exclusively for office and research development (REFERENCE: CITY OF NAPERVILLE 1985 LAND USE PLAN). North of the Burlington Northern RR tracks there is a pocket of low (0-5 d.u./acre single family or estate), medium (5-15 d.u./acre town homes, coach homes and garden apartments), and high density (15+ d.u./acre multi-story apartments and condominiums) residential development which abuts IL 59 and extends north to Diehl Road, approximately 1/4 mile from the East-West tollway.

As shown in Figure I-4, COMPOSITE PLAN MAP - NORTH CORRIDOR, land uses along the north of 95th Street are primarily office/research, manufacturing, and commercial development. The City of Aurora abutts the eastern edge of IL 59 at the Burlington Northern Railroad crossing and extends south to 75th Street, and between Montgomery Road and the DuPage - Will County line. The primary traffic generators within this area are the Fox Valley Shopping Center, Yorkshire Shopping Center, and the Fox Valley Market Place. Planned land uses north of the Fox Valley Center and East New York Street- Aurora Avenue include office/research and limited manufacturing (M-1) - located between IL 59 and the EJ & E Railroad tracks. To the west of IL 59, land planned in Naperville is primarily commercial, office, and industrial/manufacturing.

The 1985 Land Use Plan for the City of Naperville designates four square miles of low density residential (0-5 d.u./acre) between 95th and 111th Streets. Two educational facilities are planned within this residential area, and are adjacent to IL 59. Within Naperville, manufacturing and warehouses are planned for several properties located within 1/4 mile of IL 59, however no such properties are located immediately adjacent to the roadway.

South Corridor: Within 103rd Street and Caton Farm Rd, approximately 80% of all vacant or agricultural land is planned for development. Residential development will increase 263% to 7370 acres, and employment-based development will increase 103% to 1610 acres.

IL 59 passes through the center of the Village of Plainfield. Land within the Village's central downtown area is primarily single family residential, with several areas of multifamily housing (See Figure I-5, COMPOSITE PLAN MAP - SOUTH CORRIDOR). The commercial focus of downtown Plainfield is at the intersection of U.S. Route 30 and IL 59. North of Plainfield-Naperville Road, land use is primarily industrial, with a pocket of residential property (single family; two-family; and multifamily housing - allowing 3-6 dwelling units per acre) south of the intersection of IL 59 and Pilcher Road (REFERENCE: VILLAGE OF PLAINFIELD 1985 ZONING MAP).

Figure I-4

COMPOSITE PLAN MAP - NORTH CORRIDOR

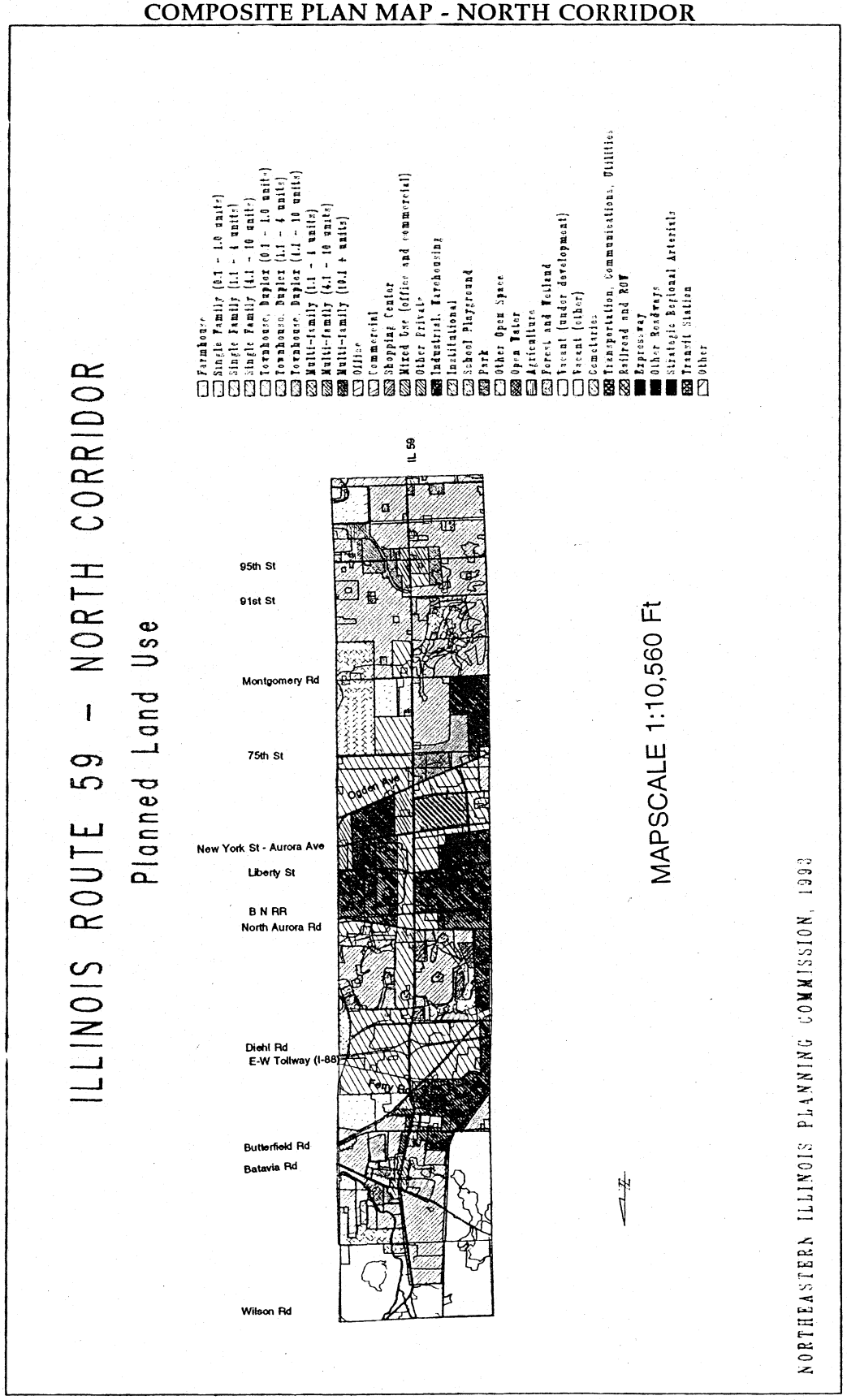
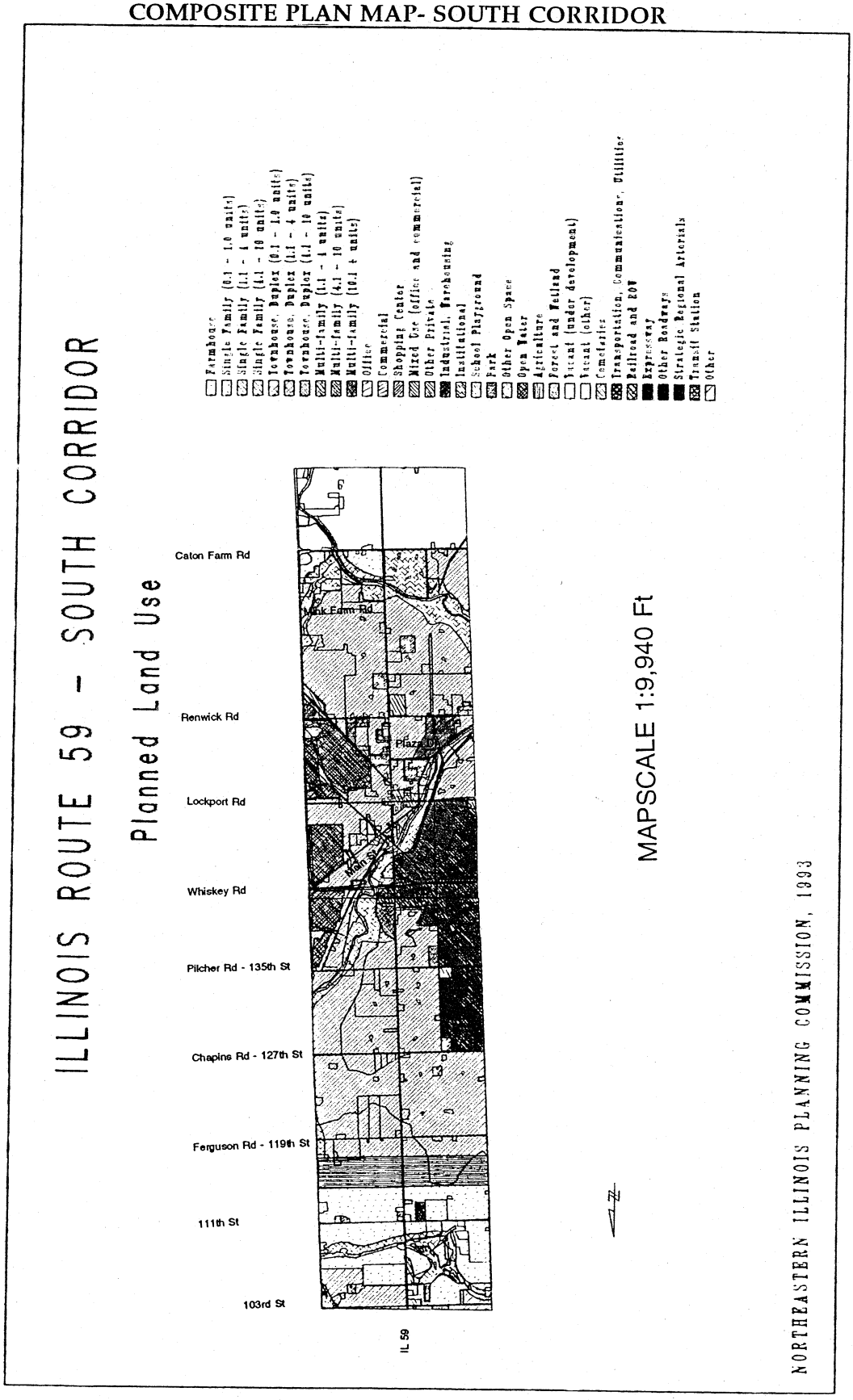


Figure I-5

COMPOSITE PLAN MAP- SOUTH CORRIDOR



DEVELOPMENT AREAS

Major development areas are located near the Fox Valley Center and the NaperWest Plaza in Naperville. At the southern edge of the study boundary, the Louis Joliet Mall in Joliet also serves as a major traffic generator and may encourage spin-off development.

Future Development

Throughout the IL 59 corridor, agricultural land is planned for residential, commercial and industrial uses. Little open space has been planned for the area. The NIPC development database (NDD) records developments which are planned, proposed, or under construction. At the northern boundary of the IL 59 study area, there are two developments proposed at the East-West Tollway. The Shell Oil Company has proposed a 270 acre business park (White Oaks Business Park) located at Eola Road and the Southwest corner of the East-West Tollway. Further west on the East-West Tollway, Randall Partners proposed a 62 acre industrial development for Randall Road. This second project calls for a complex of office, research and light industrial development.

Warrenville: There are two large developments which were recently constructed or are nearing completion in the City of Warrenville. The first of these developments, Timber Creek, is a 14 acre townhouse development with 92 units, ranging in price from $90,000 - 120,000. Timber Creek is located at the intersection of IL 59 and Meadow Avenue, north of Butterfield Road. Within the Warrenville industrial park there is a Plumbers Union facility which was under construction in July of 1991. This facility is located at the northwest corner of Butterfield Road and IL 59. The Cantera development is a 643-acre parcel of land proposed for development by the Warrenville Development Ltd. Located at Mill Street and I-88, the Cantera development is to include a variety of uses: residential (64 acres), commercial (114.5 acres), office/industrial (334 acres), open space (88.5 acres), and institutional uses (26.5 acres). Though preliminary plat approval was granted in 1991, redevelopment has been contingent upon the conclusion of quarry operations.

Aurora: Development along IL 59 is occurring at Liberty Street, 75th Street, and Route 34 in Aurora. The Meridian Business Park is a 660 acre mixed-use development consisting of an industrial park (complete), an office/warehouse (planned: 116,000 sq.ft), and a corporate office/distribution center (proposed: 220,000) at the intersection of Liberty Street and IL 59. Aurora Marketplace is a 317,000 sq.ft. shopping center constructed at the northwest corner of 75th Street and IL 59. A 10,000 sq.ft. bank building is also proposed as an additional phase of the Aurora Marketplace development.

On Route 34 and IL 59, the Meadow Lakes Corporate Park is a major corporate park with industrial, office and commercial uses. This project encompasses 358 acres of land and has over 190,000 square feet which have been completed or which are currently under construction.

Naperville: Within Naperville there are seven major developments expected to influence traffic activity along IL 59. On the northeast corner of IL 59 and East New York Street (Aurora Ave.) 558,000 square feet have been constructed at Westridge Court (formerly Glacier Business Park).

The project includes a 434,000 square foot shopping center (anchors include K-mart, Cub Foods, and Spiegel Outlet), a 40,000 square foot theater, and an additional 84,000 square feet for retail use. At the immediate corner of IL 59 and Aurora Road is the recently constructed Heritage Square shopping center. This 214,000 square foot center is anchored by a Montgomery Wards and Filene's Basement. A 130,000 square foot Target opened recently at the northeast corner of IL 59 and Jefferson. Plaza Shops of Fox Valley (also known as Fox River Commons) is another shopping center (550,000 square feet) constructed along IL 59 and Route 34. Retail anchors attracting traffic to this location include Wal-Mart, Sam's Wholesale Club, Waccamaw, Silo and F&M Discount.

A residential development (Eagle Lake Apartments) is proposed north of North Aurora Road and west of IL 59. Eagle Lake is expected to include 44 buildings with 14-16 units each. Also under construction is an apartment complex called Burlington Woods which includes 30 apartment buildings (180 units) located at IL 59 and North Aurora Road, and a 170 acre business park (High Grove of Naperville) located at the northeast corner of Jefferson Avenue and IL 59.

The Macom corporation is completing the final phases of White Eagle Club; a 75 million dollar development including 940 single-family residential units, 158 town homes, a golf course and clubhouse. White Eagle Club is located on the southwest corner of IL 59 and Montgomery Road (83rd Street), within Naperville and Wheatland Township. High Meadows is a residential community approved for the southeast corner of 111th Street and IL 59 in Wheatland Township. This development will include up to 600 single family detached units.

In Wheatland Township, there are also two major developments. The first is a one hundred acre mixed-use development planned for IL 59, south of the Wolf Creek subdivision. This development will include 19 acres of commercial property, 45 acres of industrial property, 21 acres of single-family detached housing, and a 15 acre park or open space. Crestview Knolls is the second development planned for Wheatland Township (north of Plainfield). The project will be located both north and south of 103rd Street, east of IL 59, and consist of 90 acres and approximately 200 to 220 single family units.

Plainfield: In the Village of Plainfield there are five residential developments proposed along IL 59. At IL 59 and Renwick Road, the Arbor of Plainfield includes 189 lots; Renwick Point Estates located at Renwick and Howard includes 63 lots; and 86 single family lots are proposed as part of the Quail Run development, located at 139th Street and IL 59. The Golden Meadows development includes two sections: 71 single family detached units are proposed at IL 59 and 131st Street; and 85 lots are proposed at IL 59 and 135th Street. The Village of Plainfield has also annexed in excess of 600 acres along IL 59 south of Renwick. This undeveloped land is served by public water and sewer along IL 59 and Renwick Road and development inquiries are ongoing.

REGIONAL TRANSIT STATION AREAS

In 1989, Metra conducted a ridership survey along the Burlington Northern Rail line which stops at the IL 59 station in Aurora. There were approximately 1,112 boardings at the time of the

survey. Two years later there were approximately 1,740 boardings and in 1993, the IL 59 station showed the highest growth along the Burlington Northern line - with a total of 2,011 boardings.

Pace buses also serve communities located along the IL 59 corridor. At the northern end of the corridor, bus route #790 runs from Warrenville to the Burlington Northern station. This area is also served by routes #676, 781, 737, 791. South of the Burlington Northern Railroad tracks, route #534 serves the Fox Valley Center and continues south of US 34/Ogden Avenue. Bus route #530 also serves the NaperWest Plaza in Naperville, crosses IL 59 to the Vox Valley Center and continues west to downtown Aurora. At the southern end of the corridor, bus route #507 serves downtown Plainfield and continues southwest to downtown Joliet.

REGIONAL HIGHWAY INTERCHANGE AREAS

The East West tollway (I-88) is a major highway interchange area at the northern boundary of the pilot study. This is a four way interchange for east and west bound traffic on the tollway. Beyond the pilot study area, there are two additional interchanges with the Stevenson Expressway (I-55). These interchanges are located at Main St (IL 126) and at Joliet-Plainfield Rd (US 30). South of the study area, IL 59 passes through the Village of Shorewood and runs into I-55.

B. TRANSPORTATION ANALYSIS

The transportation analysis portion of this study includes an investigation of site design considerations, neighborhood connectivity, access management, demand management, parking management, freight delivery and distribution, thoroughfare plans, right-of-way preservation, transit service plans, and transit accessible design considerations. Combined with existing and planned land use information, this information regarding the transportation system within the IL 59 corridor is used to identify locations in which land use and transportation objectives conflict. Located on page 23, Section C. contains a set of recommendations for each conflict area identified through the transportation analysis.

SITE DESIGN CONSIDERATIONS

Interaction of Adjacent Land Uses

At the north end of the IL 59 corridor, land uses between Wilson and Butterfield Rd include single family residential, industrial/manufacturing, open space, and commercial. Recognizing that auto-oriented strip development produces congestion and compromises traffic safety, the City of Warrenville adopted an Arterial Corridor Development Plan for IL Routes 59 and 56. This plan encourages consolidated commercial development and recommends that transportation facilities "be designed, located and managed so as to complement a desirable land use pattern, achieve a higher level of aesthetic quality, and minimize the impact of noise, vibration, and air and water pollution on human and natural environments in the City." Warrenville is now exploring the possibility of developing a collector street system to connect subdivisions between Mack Road and Continental Drive. The City is also working with property owners to assemble

vacant parcels between Branch Ave and Batavia Rd, and to consolidate driveway access between Batavia Rd and Continental Drive/Meadow Ave, between Meadow Ave and Butterfield (56), and near Estes St.

Between Butterfield Rd and I-88, land uses consist primarily of commercial, manufacturing and single family residential. Ferry Road provides access to manufacturing properties, minimizing delays on IL 59, due to unnecessary curb cuts and turning vehicles. South of the I-88 interchange there is also a mix of high density residential, office, and light manufacturing. Diehl Road provides access to many of these properties.

Between I-88 and New York Street (Aurora Ave.) there are a variety of developments which include residential, institutional, commercial, and office. South of N. Aurora Rd. land uses are primarily commercial, office, and light industrial. The Fox Valley Shopping Center is located between New York Street (Aurora Ave.) and 75th Street. Land uses in this area include commercial, office, high density residential, and scattered row crops and farm houses.

South of 75th Street there is a considerable amount of agricultural land with scattered residential and commercial developments. White Eagle is a large development between Montgomery and 91st Streets. The Royal Worthington development (located north of 111th) and the Naperville Polo Club are two additional developments which contribute to traffic along IL 59.

Between Pilcher and Renwick Roads there are several industrial properties located to the north of Plainfield (at Whiskey Road/143rd Street and IL 59), which contribute to truck traffic. Between Renwick and Caton Farm Road there are some commercial and warehouse properties, however land uses are primarily agricultural and single family residential.

Location and Number of Driveways

Identifying the location and number of driveways along IL 59 is important to evaluate appropriate access management techniques. Appendix I-B lists a variety of techniques which are applicable to a medium to high volume roadway with relatively low levels of development. These techniques are recommended due to the number of access points and driveways (over 300) located along the 20-mile stretch of the IL 59 corridor.

Internal and External Traffic Circulation Patterns

At the north end of the corridor, between Batavia Road and Continental Drive/Meadow Avenue, traffic accidents have been above the state average. Since a potential commercial center has been identified at this location, internal and external traffic circulation will unequivocally be important. In its Arterial Corridor Development Plan, the City of Warrenville identified a number of access management strategies to apply at this location. Strategies include developing shared driveways and cross access easements between adjacent parcels, restricting left turns on IL 59, developing a collector street system to accommodate local vehicle traffic, and providing pedestrian and bicycle access from adjacent residential areas. Details of these proposed strategies are located in Section C.

High density residential development (multi-family and townhouse) is located at the intersection of Diehl Road and IL 59. This location has been identified as a problem area due to limitations

of Diehl Road to handle traffic volumes. The intersection of New York Street-Aurora Ave and IL 59 is a second location where traffic bottlenecks occur. Left-turn movements heading northbound from New York Street are not adequately accommodated by a single left-turn lane.

Access from the Fox Valley Shopping Center is limited to one major entrance onto IL 59. Remaining access is provided from New York Street-Aurora Ave and McCoy Drive. The core buildings of the Fox Valley Shopping Center are surrounded by a ring road. This ring road provides access to outlying parcels and avoids unnecessary curb cuts along IL 59.

North of the Village of Plainfield there is an industrial area located along the EJ & E railroad tracks. Primary access to these industrial parcels is limited to Whiskey Road/143rd Street, north of Lockport Road.

IL 59 is a major north-south arterial which provides access through the center of downtown Plainfield. There is little right-of-way along this portion of IL 59, as it is densely built and many older residences have direct access onto the roadway.

Future residential subdivisions are planned along the IL 59 corridor. Internal site circulation and access will have to be carefully planned so as to minimize unnecessary delay for egress/ingress movements and to facilitate movement along IL 59. Other modes of transportation, such as walking and bicycling, should also be encouraged to reduce auto demand.

Projected Traffic Volumes

Traffic volumes recorded in 1989 range from 21,000-44,400 vehicles per day in DuPage County-with the heaviest volumes identified south of the East-West tollway. From 95th St to Caton Farm Road in Will County, traffic volumes range between 12,700-15,400 vehicles per day. Traffic volumes estimated for the year 2010 range between 30,000-50,000 vehicles per day in DuPage County and between 17,000-30,000 vehicles per day in Will County. Though 2010 estimates were not available for Wilson or Butterfield Roads, less than 30,000 vehicles are projected between Hawthorne Lane and IL 38-Roosevelt Rd in West Chicago.

Table I-2

AVERAGE DAILY TRAFFIC VOLUMES FOR MAJOR LOCATIONS ALONG IL 59

(Wilson Road to Caton Farm Road)

LOCATION	AVERAGE DAILY TRAFFIC	
	1989	2010
Wilson Road	29,900 vehicles	NA
South of Butterfield Road	37,500 "	NA
South of the East-West Tollway	44,400 "	40,000 - 50,000
Burlington Northern RR	38,700 "	40,000 - 50,000

North of Oswego Road	35,500 "	40,000 - 50,000
South of the Oswego Road	34,900 "	30,000 - 40,000
75th Street	27,300 "	44,000
North of 83rd Street	21,000 "	40,000
		COUNTY LINE
South of 95th Street	14,600 "	30,000
South of 111th Street	13,000 "	22,000
135th Street	12,700 "	22,000
Plainfield-Naperville Road	15,400 "	24,000
Renwick Road	14,200 "	18,000
North of Caton Farm Road	13,900 "	17,000

Accident Data

In 1990 there were 514 automobile accidents reported along the IL 59 study corridor (Wilson Road in DuPage County, south to Caton Farm Road in Will County). This was approximately 2.2% of the state total for rural roads designated as state routes. In 1991 there were 423 accidents.

Accidents in the DuPage County portion of the study area occurred primarily during the hours of 6:00 AM and 11:00 PM. Over 40% of total accidents in 1990 occurred between 1:00 PM and 6:00 PM. In 1991, the rate of accidents between 1:00 PM and 6:00 PM increased to 48%. Roadway pavement was wet, icy or snow covered in 40% of the accidents in 1990 and only 30% of the 1991 accidents.

Types of collisions which occurred most often in 1990 and 1991 include rear end collisions (52%, 58%), turning movements (31%, 29%), and sideswiped vehicles traveling in the same direction (10%, 8%). In 1991 there was an additional 4% of total accidents which resulted in damage due to sideswiped vehicles from opposite directions or perpendicular angles. Intersections where collisions were most frequent include the following:

Table I-3

NUMBER OF AUTOMOBILE COLLISIONS PER INTERSECTION (1990 & 1991)

IL 59 (From Wilson Road to DuPage County Line)

	1990	1991
Wilson Road	44	32
Joliet St	25	14
Mack	1	6
Branch	1	0
Waverly	1	1
County Ridge	2	1

Winchester	1	0
Meadow	5	3
Prairie	1	0
Butterfield Road	42	29
Ferry Road	10	6
SB Entrance Ramp (I-88 to IL 59)	32	22
SB Exit Ramp (IL 59 to I-88)	30	20
Diehl Road	29	34
McDowell	8	2
Bruce Lane	6	6
North Aurora Road	34	47

In 1990, there was one pedestrian-related accident which occurred at Butterfield Road. There also were two bicycle-related accidents in 1990 which occurred at the IL 59/Meadow intersection and north of the Gowdey Road intersection. These were the only pedestrian or bicycle-related accidents within the DuPage County portion of the study area in 1990 and 1991.

In the Will County portion of the study area, accidents occurred primarily during the hours of 6:00 AM and 10:00 PM. Approximately half of all accidents occurred between 1:00 PM and 6:00 PM in 1990. In 1991, 43% of all accidents occurred between these afternoon hours. Roadway pavement was wet, icy or snow covered in 38% of the accidents in 1990 and 41% of the 1991 accidents.

Types of collisions which occurred most often in 1990 and 1991 include rear end collisions (39%, 46%), turning movements (28%, 25%), sideswiped vehicles traveling in the same direction (8%, 6%), and collisions which occurred on perpendicular angles (16%, 9%). There was an additional 4% of total accidents in 1990, and 8% in 1991 which resulted in damage due to sideswiped vehicles from opposite directions or head-on collisions. Intersections where collisions were most frequent include the following:

Table I-4

NUMBER OF AUTOMOBILE COLLISIONS PER INTERSECTION (1990 & 1991)

IL 59 (From DuPage County Line to Caton Farm Road)

	1990	1991
91st Street	6	3
95th Street	20	9
103rd Street	8	2
111th Street	13	7
143rd Street	5	11
Lockport Road	12	12

Renwick Road	4	8
Caton Farm Road	8	7

In 1990 there were three pedestrian-related accidents within the Will County portion of the corridor, which accounted for 3% of the state total of pedestrian-related accidents on rural routes. These accidents occurred at 143rd Street, between Arnold Street and US 30 in Plainfield, and between Frazier Road and Wedgewood Court. One bicycle related accident occurred at Renwick Road in 1991.

In 1992, Lockport Road and Renwick Road continued to be two of the five intersections in Plainfield with the highest rate of accidents. Lockport Road had 11 accidents and Renwick Road had 18 accidents.

NEIGHBORHOOD CONNECTIVITY

South of I-88 there is a large amount of residential development of differing types and densities. Single and multifamily residential properties are connected by internal collector roads which access IL 59, and sidewalks are also present within residential developments. Along IL 59, however, there is a clear absence of sidewalks.

PEDESTRIAN AND BICYCLE ACCESS

The absence of sidewalks along IL 59, together with the gravel shoulder and high speed of travel result in a corridor which is virtually impossible to walk along. These same conditions inhibit the travel of the bicyclist. A survey conducted by the Chicagoland Bicycle Federation revealed the following conditions for bicyclists on IL 59. The southern section of the study corridor, from Caton Farm Road to 75th Street, can be improved to have excellent compatibility for all cyclists with a paved shoulder to 8 feet and a resurfacing of poor pavement in problem areas. As the roadway travels north, development and activity becomes more prevalent and biking along the arterial becomes more difficult. Recommendations for improvements on the remainder of the study corridor include replacing hazardous drain grates, installing pedestrian controls and crosswalks at intersections, and repairing pavement at the I-88 overpass. An abundance of driveways for in and out traffic at the commercial developments pose hazards for the bicyclists. Even with the recommended improvements, the compatibility on this segment of the arterial ranges from good to excellent for experienced cyclists, but remains fair to poor for average and novice cyclists.

Because of the rural nature of the area in which IL 59 is located, there is no viable alternate route for the bicyclist to use. There is no parallel roadway within 1/2 mile of the arterial, and even the nearest north/south roads tend to be gravel, thereby limiting travel on those roads to automobiles.

ACCESS MANAGEMENT

One of the difficulties in managing access in northeastern Illinois is the development of narrow parcels of land which each have individual access to arterial roadways and result in short spacing between driveways. Access management is a process whereby public agencies and private developers are able to negotiate the number, type, and location of access points along a roadway. This process provides a balance between maintaining high standards for traffic capacity and providing necessary access to abutting development.

Four primary traffic management techniques are recommended by the Federal Highway Administration to control access to arterial roadways and facilitate safe and efficient traffic flows. These four techniques include: (1) Limiting the number of conflict points along a roadway (limiting or preventing certain kinds of maneuvers), (2) Separating basic conflict areas (reducing the number of driveways or directly increasing the spacing between driveways or intersections), (3) Providing for deceleration requirements (increasing driveway turning speeds, decreasing through highway speeds, or increasing driver perception time), and (4) Removing turning vehicles from the through lanes (providing separate paths and storage areas for turning vehicles).

The planning process for Illinois Route 59 is guided in part by the objective of managing access to SRA routes in order to improve through traffic movement and reduce conflicts. The Strategic Regional Arterial Design Concept Report, endorsed by CATS Policy Committee on January 31, 1991, provides guidance for rural SRA routes (2010) which limits direct access to the rural SRA route from frontage roads and collectors. An additional list of applicable techniques are included in Appendix I-B of this document. These techniques are recommended due to the number of access points and driveways (over 300) located along the 20-mile stretch of the IL 59 corridor.

The City of Warrenville's Arterial Corridor Development Plan includes specific recommendations to guide the number and location of driveways on individual properties. The Plan discourages "the subdividing of larger parcels along arterials unless individual property access is consolidated into a planned driveway or streetway access system". The Plan also encourages the consolidation of smaller parcels, consolidated driveways, and connections between properties.

Consolidated access is an access management technique also supported by the cities of Naperville and Aurora. Though there is not a written policy requiring consolidated access in either of these communities, the development review process does provide an opportunity to negotiate consolidated access points between adjacent properties. In Aurora, consolidated access was implemented during the construction of the Fox Valley Mall. The City of Aurora also has a policy to limit signalized access points to 1200 feet. Though this is an objective applying to Naperville and to Aurora, it has not been followed consistently when confronted with the political reality of desired development.

DEMAND MANAGEMENT

Demand management is an approach to consolidate, reduce or hold travel demand at present levels. The term "Transportation Demand Management" generally refers to policies, programs, and actions that increase the use of high occupancy vehicles (public transit, carpools, and vanpools), bicycling, walking, or encourage alternative commute patterns (such as telecommuting or work schedule changes). A comprehensive demand management strategy may involve a number of alternative transportation modes and/or services; a set of incentives intended to induce commuters to shift to alternative modes of travel and/or services; growth management policies designed to maintain a balance between transportation demand and transportation facilities; and an implementation mechanism.

On March 3, 1993, Governor Edgar signed Senate Bill 2177 which enacted the Illinois Employee Commute Options Act. This legislation requires all employers with 100 or more employees to increase the average passenger occupancy for commuting trips by 25% above the regional average vehicle occupancy. Within the IL 59 corridor, employers that have 100 + employees arriving to any one work site will be required to survey all employees arriving the worksite between 6:00 a.m. and 10:00 a.m., Monday through Friday; calculate the average passenger occupancy; and submit a plan that proposes demand management strategies and demonstrates how these strategies will be implemented within a 2 year period.

At this time there are no comprehensive demand management strategies in place for the Village of Plainfield or the City of Aurora. Within the City of Naperville, the Hewlett-Packard Company (located on E. Diehl Road) is participating in a regional demonstration project organized by the Chicago Area Transportation Study. Hewlett-Packard is one of 17 employers in northeastern Illinois that has begun to survey its employees and develop a plan to increase average passenger occupancy (APO). Over the 18 month period between the initial survey in 1992 and the re-survey of employees in November of 1993, the APO rate had increased 5% to 1.06. During the fall of 1993, 4% of Hewlett-Packard's employees were participating in a carpool program and 4.3% were registered in a guaranteed ride home program. In order to continue to increase the site's APO and reach the regional average vehicle occupancy (AVO) target, Hewlett-Packard may pursue the following strategies: a telecommuting policy, a variable work hours program which includes a compressed work week schedule, and a clean fuel fleets program.

PARKING MANAGEMENT

Parking management plans include efforts to provide, control, regulate or restrict the use or availability of parking spaces. Plans may be developed to meet various objectives including support of commercial and retail activities; preserved access for local residents; and encouragement of other modes of transportation, such as walking, bicycling, car pools and public transportation.

Employers may implement parking management programs as a demand management strategy to reduce vehicle trips. Within an individual worksite, parking management might include giving priority to high occupancy vehicles (carpools, vanpools); restricting the number of spaces

for vehicles carrying only one person; charging fees for employer parking; and working with local municipalities to restrict on street parking during rush hours or to establish parking permit programs for residential and/or employee parking. Though employers within the IL 59 corridor are becoming aware of the Illinois Employee Commute Options legislation, no employers are known to be implementing parking management programs at this time.

FREIGHT DELIVERY

In order to accommodate freight delivery along SRA's and minimize unnecessary traffic delay, considerations should be given to improve vertical clearances, improve turning radii, and account for loading zones. Alternate freight routes should also be considered where there are inherent features restraining freight delivery or where freight delivery is not required to serve adjacent land uses. All new roadways should be constructed with 16 feet-3 inches vertical clearance. On rural SRA's such as IL 59, the turning radius should be designed to accommodate a WB-60 design vehicle.

IL 59 is a primary freight route in northeastern Illinois. Within the study corridor the average daily traffic volume ranged from 1,300 (southern corridor) to 3,600 heavy commercial vehicles (northern corridor) in 1992. One particular portion of the study area which has imposed weight restrictions is Pilcher Road (135th Street) in Plainfield. Due to these weight restrictions, trucks are re-routed to 143rd Street (Whiskey Road) from IL 59.

THOROUGHFARE PLANS

To maintain traffic flow at intersections between SRA's and other arterial roadways, coordinated planning efforts are needed. Prior to SRA roadway design, programmed uses of the arterial street system should be identified through use of municipal comprehensive plans and county transportation plans. The programmed uses of arterial streets in the SRA service areas should be considered when designing the SRA roadway, especially at roadway intersections. Local and county transportation plans should also incorporate relevant portions of the SRA system.

The Illinois Department of Transportation is in the process of designing IL 59 from 75th Street to Interstate Route 55. Proposed roadway designs include six lanes and a 30-foot barrier median from north of 75th Street to 95th Street; four lanes through the rest of the study corridor (from 95th Street to Caton Farm Road), and south to Shorewood Lane. From Shorewood Lane to the end of the project, three lanes are proposed (two southbound, one northbound) with a 4-foot median.

Transportation improvements proposed in the Fiscal Year 1993 Annual Element of the Transportation Improvement Program (TIP) which are expected to have a direct impact on thoroughfares within the corridor include the addition of a new interchange to the East-West Tollway (I-88), at Winfield Road, and added lanes to Ogden Avenue (from Montgomery Road to IL 59) in Naperville. These two projects are programmed to occur within the first and second years of the FY 94-97 program.

In March of 1993, the Village of Plainfield Transportation Committee submitted a report to the Village, recommending transportation improvements in order to complete a transportation network plan. With regard to IL 59, the Committee recommended the coordination of traffic signals to promote an efficient flow of traffic and recommended the provision of safe pedestrian crosswalks along the length of IL 59 throughout the Village. The Committee also recommended that a landscaped median and/or parkway be implemented to buffer noise and visual impacts associated with the roadway.

The relocation of U.S. Route 30 was recommended along Renwick Road at Lake Renwick to IL 59. "The two roadways would co-exist to 143rd Street at which point U.S. Route 30 traffic would be diverted to its existing alignment west of the industrial area. Traffic signalization must be modified under this proposed scenario; however, the dangerous turns and heavy traffic through the downtown area would be eliminated. Joliet Road between Renwick Road and Division Street would be returned to 'local street' status".

Additional thoroughfare recommendations by the Plainfield Transportation Committee included a full interchange at Interstate 55 and IL Route 126; redirecting IL Route 126 east of the present village limits so that the route would follow a new 143rd Street alignment to IL 59 and U.S. Route 30; and minimizing the impact of Ferguson Road (119th) and 111th Street by using a sunken profile, planted medians and parkways, and by routing the roadway below or above IL 59.

The City of Aurora has also proposed a number of thoroughfare improvements which include a U.S. Route 30 bypass along 95th Street; the widening of 127th Street; and the widening of Eola Road, Heggs Road, and County Line Road to accommodate north-south traffic that would otherwise travel along IL 59. Aurora staff have proposed these recommendations as a set of alternatives to the Fox Valley Freeway.

RIGHT-OF-WAY

Right-of-way (ROW) should be preserved along IL 59. While current widths range between 66-120 feet, the desirable ROW width for a rural SRA is between 168 - 192 feet. As with thoroughfare plans, local and county plans should incorporate future rights-of-way for strategic regional arterials. Counties and municipalities are encouraged to adopt dedication requirements for the SRA as part of their subdivision process regardless of roadway ownership. Due to the proximity of buildings to the roadway, downtown Plainfield is one location where right-of-way acquisition may need to be considered.

TRANSIT SERVICE PLANS

Pace Service

As mentioned previously, there are a number of Pace buses that serve the IL 59 corridor. At the northern end of the corridor, bus route #790 runs from Warrenville to the Burlington Northern station. This area is also served by routes #676, 781, 737, and 791. South of the Burlington

Northern Railroad tracks, route #534 serves the Fox Valley Center and continues south of US 34/Ogden Avenue. Bus route #530 serves the NaperWest Plaza in Naperville, crosses IL 59 to the Fox Valley Center and continues west to downtown Aurora. At the southern end of the corridor, bus route #507 serves downtown Plainfield and continues southwest to downtown Joliet. Additional bus routes to the Metra train station in Naperville include #684, 685, 686.

Metra Rail Service

Between the City of Chicago and communities along IL 59, there are two major rail lines: the Burlington Northern Rail line, which stops at the IL 59 station in Aurora; and the Chicago & North Western West line, which stops west of IL 59 in West Chicago.

Recommendations

The draft SRA report produced in 1991 by Harland Bartholomew & Associates for the Illinois Department of Transportation, recommends bus stops, signage, park and ride facilities, and transportation centers as future transit improvements for the IL 59 corridor. Bus stops are recommended provided that express bus service is implemented along the entire length of the corridor. These bus stops are typically located at signalized intersections with a one-quarter to one-half mile spacing. The draft report also identifies several locations for potential park-and-ride facilities and for transportation centers. An example of a potential park and ride site would be located along the eastern edge of IL 59, providing access between DuPage County and the eastern part of I-88, and then onto the Oak Brook area. Other potential locations would be at Caton Farm Road and Renwick Road.

Identified in the 2010 Transportation System Development Plan as a major transit corridor of the future, the EJ&E Railroad runs parallel to IL 59. Constructing a transit station along this rail corridor would increase transit access to portions of Will, Cook, DuPage, and Lake Counties. According to the draft SRA report for IL 59, consideration is being given to locate transit stations along this corridor between 111th and 103rd Street and at the intersection of Illinois Route 56 (Butterfield Road) and the EJ&E Railroad.

TRANSIT ACCESSIBLE DESIGN CONSIDERATIONS

With the considerable amount of residential development planned throughout the southern portion of the corridor, it is recommended that Pace Development Guidelines be followed to maximize transit access. Similarly, the development of larger non-residential parcels should be designed to accommodate transit vehicles or to promote safe and convenient access to fixed transit services.

C. PRELIMINARY RECOMMENDATIONS FOR IL ROUTE 59

This portion of the study contains a list of local development actions designed to promote compatibility between future land uses and transportation functions within the corridor. Composite land use plans and the transportation analysis along IL 59 were used to identify areas of conflict and to subsequently recommend strategies that could be implemented by local municipalities and by the Illinois Department of Transportation.

LIST OF LOCAL DEVELOPMENT ACTIONS

NORTH CORRIDOR

Wilson Rd - Butterfield Rd

Land uses planned for the northern portion of the corridor include single family residential (0,1 - 1,0, 1.1 - 4.0, and 4.1 - 10 du/acre), multifamily residential (10.1 + du/acre), commercial, and industrial development. The Fermi National Accelerator Laboratory is a significant development located to the west of the Elgin Joliet & Eastern (E J & E) railroad tracks, and north of Butterfield Road.

Consolidated Access: For the purpose of reducing automobile congestion along IL 59, it is recommended that commercial strip development proposed north and south of the intersection of IL 59 and Batavia Road be designed to minimize unnecessary curb cuts, and promote pedestrian/bicycle access and safety. Specific recommendations include consolidating commercial driveways between the Winchester home association and the strip commercial center on eastern edge of IL 59; consolidating access for two adjacent shopping centers at the Batavia Road intersection; locating consolidated access at Continental Drive (SW of Batavia) and at East. Continental Drive.

Frontage Road: Along the western side of IL 59 (at Batavia Road) the City of Warrenville has considered limiting access to that which currently exists and encouraging future developments to tie to a frontage road. The feasibility of the frontage road concept should be explored in greater detail.

Pedestrian-Bike Linkages: Consideration should be given to link residential, commercial, and industrial areas located between Ferry Road and Butterfield Road with the Illinois Prairie Path (located just south of Butterfield Rd) and install sidewalks and bikeways where possible. Special consideration should be given to developing a sidewalk or walkway from the IL Prairie Path to the triangular property (currently zoned as B-2 non-residential) located north of the path, on east side of IL 59.

East West Tollway (I-88)
South of Diehl Road there are a variety of land uses including office development, single and multi-family residential, commercial, institutional, and the Country Lakes Golf Course.
It is recommended that mixed uses be encouraged (through multi-use zoning) and that facilities be provided to promote pedestrian and bicycle access.

Mixed Use Development: Consideration should be given to develop the land along the eastern edge of IL 59 - between Diehl Rd. & N. Aurora as mixed use development.

Consolidated Driveways and Cross Access Easements: Recommended for implementation at the southwest corner of North Aurora and IL 59 and between parcels zoned R-3 residential and B-2 business along Ogden Avenue, to the east of IL 59.

North Aurora Rd
In December of 1973, the cities of Aurora and Naperville signed a boundary agreement in effect for the land located north and south of the Burlington Railroad tracks and to the west of IL 59. The land within this area is now under study by the DuPage County Development Department and by a consortium including the cities of Aurora, Naperville, Pace, Metra, and NIPC. The purpose of which is to develop a master plan for the IL 59 station area which encourages development that is easily accessible by train, walking or bicycling, and by bus. This effort is stimulated by 1990 amendments to the Clean Air Act, which require a reduction in automobile trips in order to improve air quality.

Mixed Use Development: The vacant parcel currently planned for light industrial development, south of the IL 59 station, should be developed as a mixed use development, as proposed by DuPage County staff. Features of the station area plan to be evaluated include innovative site designs and building orientation that promote alternative modes of transportation (ie. walking, bicycling), transit accessibility, and reduced parking. It is recommended that multiple plan scenarios be evaluated to determine the degree to which the traffic congestion is mitigated and air emissions decline.

Pedestrian-Bike Linkages: As development occurs south of Aurora Road, sidewalks should be constructed along IL 59 to ensure pedestrian facilities between Burlington Northern train station and adjacent land uses (office, industrial, commercial and residential).

New York St - Aurora Ave

Consolidated Access: Access should be limited to existing entrances to the Fox Valley Shopping Center and consolidated where additional access is needed to accommodate future development. Traffic signals should be limited to 1/2 mile locations, and permitted within 1/4 mile locations only where warranted.

Urban Design and Landscaping Improvements: Consideration should be given to replace any landscaping that is removed during future right-of-way acquisition to widen IL 59. Of specific concern is the Fox Valley Mall area - which has been heavily landscaped.

Pedestrian Linkages: It is also recommended that sidewalks be installed in order to ensure safety of people walking to/from residential areas (M 10+ du/acre, SF 4.1-10 du/acre), commercial, office and industrial properties located adjacent to the Fox Valley Shopping Center.

Intersection Improvement: The City of Aurora is interested in investigating whether an additional dual left turn lane is warranted for north-bound vehicles turning left from Aurora Avenue onto IL 59. Consideration should be given to evaluating the warrants and feasibility of this recommendation.

75th St, Montgomery Rd, 91st St, and 95th St

Though one half of the land between 75th Street and 103rd Street is currently being used for farming, future land uses include residential (SF 0.1-1.0, 1.1-4.0, MF 10+ du/acre), office, commercial, and institutional (NOTE: IL 59 and 75th Street are both designated Strategic Regional Arterials).

Access Management: In order to maintain traffic carrying capacity along these SRA's, it will become especially important to limit curb cuts along IL 59 and at major intersections, promote cross access easements between adjacent parcels, and restrict left-turn maneuvers to minimize potential traffic conflicts as these properties are developed. It is also recommended that signalized intersections be spaced not less than 1/2 mile in distance.

Pedestrian Facilities: Crosswalks and sidewalks are recommended at Montgomery Road and 91st Street to provide safe linkages between residential and employment areas, schools, and the White Eagle Golf Club. It is also recommended that the intersections of 95th Street and 103rd Street incorporate crosswalks or bridges as adjacent land is developed for commercial and residential uses.

SOUTH CORRIDOR

103rd St

For this area south of 103rd St. planned land uses include single family residential (0.1 - 1.0, 1.1 - 4.0 du/acre), open space, and a strip of commercial development along IL 59.

Access Management: Access to future developments should be consolidated at a mid-mile connector, such as Royal Worlington Drive, between 103rd St. and 111th St.

Mixed Use Development: It is also recommended that consideration be given to incorporate commercial or mixed use zoning for land surrounding the Tamarack Fairways Golf Course. By providing a variety of mixed uses, residents would have the opportunity to walk or bike to neighboring businesses and reduce reliance on the automobile.

111th St

South of 111th Street planned land uses include single family residential (0.1-1.0, 1.1-4 du/acre), commercial and institutional areas.

Access Management: As properties develop, it is recommended that access be consolidated at existing access locations and that cross access easements be provided to reduce ingress/egress traffic along IL 59.

Pedestrian-Bike Access and Mixed Use Development: There is a 460-acre parcel of land, under the jurisdiction of Will County, which is currently in use for agricultural purposes (row crops and a polo club). Depending upon its future use, this parcel may provide creative opportunities to promote non-auto modes of travel and reduce additional traffic congestion along the arterial roadway. Consideration should be given to evaluate whether an appropriate use for this parcel would be recreational open space or a mixture of residential and commercial development.

Ferguson Rd - 119th St

Access Management: Future residential development (planned with densities between 4.1-10 units/acre) on both sides of IL 59 should be designed to access collector roads, rather than have direct access onto IL 59. Developments should also have consolidated entrances and exits.

Alternative Routing: Consideration should be given to the Village of Plainfield recommendation to redirect IL Route 126 east of the village limits so that the route would follow a new 143rd Street alignment to IL 59 and U.S. Route 30. The proposals to minimize the impact of Ferguson Road (119th) and 111th Street by using a sunken profile, planted medians and parkways, and by routing the roadway below or above IL 59 should also be explored.

Chapins Rd - 127th St

Pedestrian-Bike Access: Access should be promoted where possible between future residential and industrial areas planned at the southwest corner of the intersection with IL 59.

Pilcher Rd - 135th St

Access Management: Distance between traffic signals should be limited to 1/2 mile locations, where possible. In order to reduce delays along IL 59, it is recommended that future access to Joseph Ave or Hazelcrest Drive be limited to right/in right/out rather than install signals within 1/4 mile segments. It is also recommended that access to industrial properties west of IL 59 be consolidated onto Whiskey Rd/143rd Street.

Landscaping: The Village of Plainfield recommends that a landscaped median be considered along IL 59 from north of 143rd Street - south of U.S. Route 30 to buffer noise and visual impacts associated with the roadway.

Lockport Rd

Mixed Use Development: Within the Village of Plainfield, it is recommended that vacant and redevelopable parcels south of Whiskey Road/143rd Street and within the central business area of Plainfield be developed to include mixed uses.

Access Management: Curb cuts should be minimized in order to reduce potential conflicts with traffic from Main St., US 30, and Renwick Rd. Vehicles should access Plaza Dr. through right-in/right-out driveways rather than adding an traffic signal within 1/4 mile of the signal at US 30 (Lincoln Highway).

Renwick Rd - Caton Farm Rd

Access Management: Future access to commercial, institutional, and residential properties should be limited or consolidated along this southern portion of the corridor. Renwick Rd is currently designated as an Strategic Regional Arterial and Caton Farm Rd has been suggested as an SRA. It is recommended that access be limited to a signalized intersection located between Caton Farm Rd and Renwick Rd, however, access to Fraser Rd and Mink Farm Rd should be limited to right-in/right-out or another access management technique -rather than a signalized intersection.

Alternative Routing: Consideration should be given to the Village of Plainfield recommendation to relocate U.S. Route 30 along Renwick Road at Lake Renwick to IL 59. The two roadways would co-exist to 143rd Street at which point U.S. Route 30 traffic would be diverted to its existing alignment west of the industrial area.

PART II - U.S. Route 30 (Lincoln Highway)

(From I-57 to Western Avenue)

INTRODUCTION

U.S. Route 30 was chosen for the SRA Land Use Compatibility Study because of its location in an area which has experienced extensive development and serves as the economic center of the south suburban area. A 3 1/2 mile segment of US 30 was studied within the Villages of Matteson, Park Forest, and Olympia Fields in Cook County.

Local Actions

Following an analysis of existing and future development and transportation patterns within the U.S. Route 30 corridor, NIPC staff produced a list of local development actions that might be taken to promote compatibility between transportation facilities and adjacent land uses (See Section II.C.). This list of recommendations was discussed with local municipalities and the Illinois Department of Transportation and will be evaluated during the final traffic analysis and urban design phase of this project.

Compatibility

Land uses along the U.S. Route 30 corridor consist primarily of single family residential, office and commercial developments. Other land uses include institutional facilities and utilities. Though forty percent of the study area is either open space or vacant, more than half of this land is planned for development.

Two of the major issues of concern along the corridor are traffic circulation and improvements for pedestrian and bicycle access. While the development of residential and commercial property is planned to increase by more than 28% within the corridor, vehicle traffic is also expected to increase by approximately 26%. Currently, traffic volumes along U.S. Route 30 average between 32,000 - 37,000 vehicles per day, and by the year 2010 traffic is forecasted to exceed 50,000 vehicles per day. Pedestrian and bicycle access is inhibited by a lack of connectivity between residential subdivisions, adjacent retail shops and businesses. Local development actions listed in Section II.C. are specifically recommended to alleviate these types of concerns and conflicts.

Next Steps

During the final phase of the SRA Land Use Compatibility Study, traffic analyses and urban design recommendations will be produced from the list of local development actions. The objective of this next step is to refine and augment the set of initiatives that can be implemented to promote compatibility.

A. COMPOSITE PLANS FOR THE CORRIDOR

The US 30 study area is approximately 3 1/2 miles from I-57 to Western Avenue. It is located within the Villages of Matteson, Park Forest, and Olympia Fields in Cook County.

Inventory of base information consisted of the following:

- Identification of land uses from 1990 aerial photographs
- Collection of land use plans for the communities of Matteson, Park Forest, and Olympia Fields
- Identification of development areas
- Identification of regional transit station areas, and
- Identification of regional highway interchange areas

LAND USE INFORMATION

Existing Land Uses

US 30 was selected as a pilot study for the SRA Land Use Project because it is located in an area which has experienced extensive development, particularly in office and commercial uses. The area serves as the economic center of the south suburban area. Development along the arterial is generally of moderate density throughout and the highest densities are located adjacent to the Lincoln Mall.

Forty percent of the study area is currently open space or vacant land. Along US 30, land uses consist primarily of single family residential (42%), office, commercial, and shopping center developments (10%). Development along the arterial is generally of moderate density, with higher densities located adjacent to the Lincoln Mall. The character land uses along US 30 shift from commercial and office, within the Village of Matteson, to low density residential units further east in Olympia Fields. The greatest mix of interactive uses in this corridor exists in the area surrounding the Lincoln Mall Shopping Center. At the intersection of US 30 and I-57 (just west of the mall), a hotel and office complex provides diversity to the highly concentrated commercial uses. In addition, various office complexes surround the shopping center.

Table II-1 - LAND USES WITHIN US ROUTE 30 (LINCOLN HIGHWAY) CORRIDOR

LAND USE	EXISTING ACRES	PERCENT OF TOTAL	PLANNED ACRES	PERCENT OF TOTAL
OPEN SPACE/VACANT	1,722	39.4 %	693	15.7 %
RESIDENTIAL	1,852	42.3 %	2,314	52.4 %
EMPLOYMENT	801	18.3 %	1,407	31.9 %
TOTAL	4,375	100.0 %	4,414	100.0 %

East of Governors Highway, US 30 experiences a shift in character. More open space and residential uses, with only pockets of commercial uses, act as frontage to the SRA. Along the roadway there are sporadically located developments which serve residential uses. These developments include churches, parks/open space, and train stations, etc.

There are no sidewalks present on US 30 in this corridor, thereby inhibiting pedestrian travel in those areas most likely to encourage it -- i.e., the western section where a mix of uses is beginning to emerge. Only the Village of Matteson provides for mixed use areas in their zoning ordinance. A "regional shopping center" classification allows both commercial and office uses to be located together. The Village of Park Forest has zoned the area surrounding US 30 as residential only (R-1). The Village of Olympia Fields has separated the residential areas from any commercial uses in their zoning map.

The highest densities in the US 30 corridor are found in the area surrounding the Lincoln Mall. In addition, residential areas of higher densities are found surrounding the train station on the south side of US 30. Both the Village of Matteson and the Village of Park Forest have zoned these residential areas to be of moderate to high density single family homes. However, on the north side of US 30, in the Village of Olympia Fields, there is a dramatic shift in density. Low density, single family residences characterize the area from Governors Highway to Western Avenue (including the area around the train station).

Planned Land Uses

US 30 passes through the Village of Matteson from I-57 to Crawford Avenue, on both the north and south sides of the road. The south side of US 30, from Crawford to the Metra Electric tracks is also within Matteson's village limits. Land uses within the boundaries of Matteson, adjacent to US 30, are primarily commercial and office. The Lincoln Mall serves as the focus of the commercial activity and is located at the intersection of Cicero Avenue and US 30. The character of the road shifts, west of Crawford to residential uses. Densities of residential units vary from low to moderate in this district. (REFERENCE: VILLAGE OF MATTESON 1987 LAND USE INTENSITY MAP).

The north side of US 30, from Crawford Avenue west to Western Avenue, is within the boundaries of the Village of Olympia Fields. Uses are primarily low density residential units with pockets of commercial and office uses located sporadically along the road. The village has planned for more scattered office and commercial development along US 30 to accommodate future growth in the area (REFERENCE: VILLAGE OF OLYMPIA FIELDS 1989 COMPREHENSIVE LAND USE MAP)

The Village of Park Forest abuts the southern edge of US 30 from the Metra Electric tracks on the west to Western Avenue on the east. This area is comprised predominantly of single family residences, of moderate density. In addition, scattered commercial uses have been planned for the area. (REFERENCE: VILLAGE OF PARK FOREST LAND USE MAP)

The US 30/Lincoln Mall area has been identified as a potential Diversified Regional Center (DRC) in NIPC's Strategic Plan for Land Resource Management. A DRC acts to alleviate traffic congestion by 1) creating major nodes of employment, 2) concentrating land uses well-served

by public transportation, 3) serving as "economic and social hubs" for the surrounding area, and 4) preventing low-intensity areas from becoming permeated with major trip generators which are dispersed. Already the Village of Matteson has established the Lincoln Mall area along US 30 as the "economic center" of the south suburban area. A report prepared by Teska & Associates (the result of a series of 4 charettes sponsored by NIPC) entitled Guidelines for Diversified Regional Centers, attempts to apply DRC concepts to the Lincoln Mall area. The following recommendations were included in the report in order to begin the Lincoln Mall area's transition into a bonafide DRC.

1) Providing extended bus service along Lincoln Highway and Cicero Avenue to connect these corridors to the DRC; providing commuter rail service on the EJ&E right-of-way and connection with the IC rail line to the Loop; and ultimately providing an internal distributor transit system.

2) Completing the existing, but discontinuous system of arterial roads at 0.5 mile intervals.

3) Creating a new mixed use, higher density core area along Lincoln Highway that will create the critical mass and central place that not only brings the DRC into focus, but establishes its regional identity.

4) Adding a significant variety of residential opportunities within and adjacent to the DRC to support its many activities and transportation systems.

5) Providing a continuous pedestrian system connecting all components of the DRC and extending into surrounding neighborhoods.

Within the limits of the Village of Matteson, a Village Center has been planned for an area east of I-57 and slightly north of US 30. The Village Center has been designed with a neo-traditional approach and hopes to promote commercial activity and other uses in a "Main Street" style of development -- i.e. limited or no setbacks, higher densities, etc. The Village Center complements the DRC concept recommended previously.

DEVELOPMENT AREAS

Future Development

Major development areas in the corridor are surrounding the Lincoln Mall, particularly toward the expressway interchange. No major residential developments have been planned for the area and proposals are predominantly for new office and commercial space. The NIPC development database (NDD) tracks developments which are planned, proposed or under construction.

Olympia Fields: One development has been tracked within the village of Olympia Fields which impacts the US 30 corridor. A 24,200 square foot shopping center is proposed along US 30, west of Crawford Avenue. The plans call for a strip development containing two buildings.

In anticipation of future growth in the area, the Village of Olympia Fields has planned for scattered office and commercial development along US 30. The Village of Park Forest has also planned commercial developments at scattered locations south of US 30 (between the Metra Electric tracks and Western Avenue). See Figure II-3, COMPOSITE PLAN MAP.

Matteson: Within the boundaries of the Village of Matteson, six new developments have been charted in the NDD. Along the western edge of the area, at I-57 and US 30, two major developments are underway. A 46 acre hotel and an 8 acre commercial bank will become part of a 100 acre corporate park planned for the area. Just south of the Lincoln Mall, a 353 acre Wal-Mart store and a 79 acre office center are two developments recently completed. Further east, along US 30, a 250 acre corporate center (consisting of one and two story office buildings) is proposed at Cicero Avenue and a 230 acre shopping center which includes a Dominicks, K-mart and Phar-Mor, is under construction at Governor's Highway. The Village of Matteson also has plans to develop a new Village Center, to be located north of US 30 and east of I-57.

In 1987, the Village of Matteson decided to change the pattern of development by creating a corridor between Cicero Ave. and I-57. US 30 is mostly developed east of I-57 and the Village center is no longer functional. The Village thus proposed a new community center, located between Cicero and I-57 (north of US 30, south of Volmer Rd.), which would have mixed use developments and accommodate pedestrians.

Details of the Village Center proposal include the following:
- 4 lane road as central arterial, with access to US 30 (between I-57 and Cicero)
- mixed use office-commercial developments (service oriented)
- new 3 lane bridge across I-57 for local auto traffic and one lane for bikes and pedestrians
- 2 to 3 story residential units

The Village of Matteson also plans to construct a bridge which would cross I-57, linking two quadrants of Village, without interfering with SRA or expressway traffic. ISTEA funding may be used. The bridge is to be built within 3 years, and when completed, Volmer will be widened to 4 lanes (NOTE: Cicero Avenue is now 4 lanes).

In its comprehensive plan, the Village of Matteson established the development policy of locating high intensity uses adjacent to or near I-57, where heavy traffic volumes can be best accommodated and have a minimum impact on local traffic. The Village also promotes less intense uses further from the central area and promotes pedestrian and bicycle movement. These are development policies which coincide with the concept of a diversified regional center (DRC), which is proposed in the Northeastern Illinois Planning Commission's Strategic Plan for Land Resource Management.

In April and May of 1991, the Northeastern Illinois Planning Commission and Teska Associates organized three charettes to explore the concept of a diversified regional center. At this time, the Lincoln Mall area of the Village of Matteson was discussed as a "potential" DRC. A critical feature which would transform the area into a DRC would be to create a new mixed use, higher density core area along Lincoln Highway that would create the critical mass and central place that establishes regional identity. Another critical feature would be to add a significant variety

of residential opportunities within and adjacent to the DRC to support its many activities and transportation systems

REGIONAL TRANSIT STATION AREAS

The corridor is served by two Metra commuter rail stations in Matteson, and two Pace bus routes. The two transit stations that serve Metra commuters in the US 30 corridor are:

1) Metra Electric 211th Street (Lincoln Highway) Station located between Olympian Way and Olympian Circle in Matteson, and
2) Metra Electric Matteson Station, also in Matteson, at 215th Street and Main Street.

In 1986, Metra conducted a survey of license plates in both station's parking lots. This survey concluded that commuters at the 211th Street Station live in close proximity to the station (approximately 7-10 square miles). Of the 170 vehicles parked in the lot, 90% were registered to people living within the commuter shed (see attached map). The remaining 10% drove in to the station from the outlying communities of Glenwood, Chicago Heights and University Park.

The Matteson Station, located one half mile south of US 30, is also within the study corridor. This same study revealed that most commuters live within 10-12 square miles of the station. Of the 850 vehicles parked in the lot, 97% were registered to people living within the commuter area (see attached map). Approximately 3% of the commuters travelled from residences in the surrounding communities of Frankfort and Country Club Hills.

Communities located in the US 30 study area are also serviced by Pace buses. Route #357 travels east and west along US 30 and route #753 services the Lincoln Mall.

REGIONAL HIGHWAY INTERCHANGE AREAS

One highway interchange serves the US 30 corridor at I-57. This interchange serves as the western boundary of the study area and provides access onto US 30 for both north and south bound traffic.

Figure II-1

PROJECT STUDY AREA

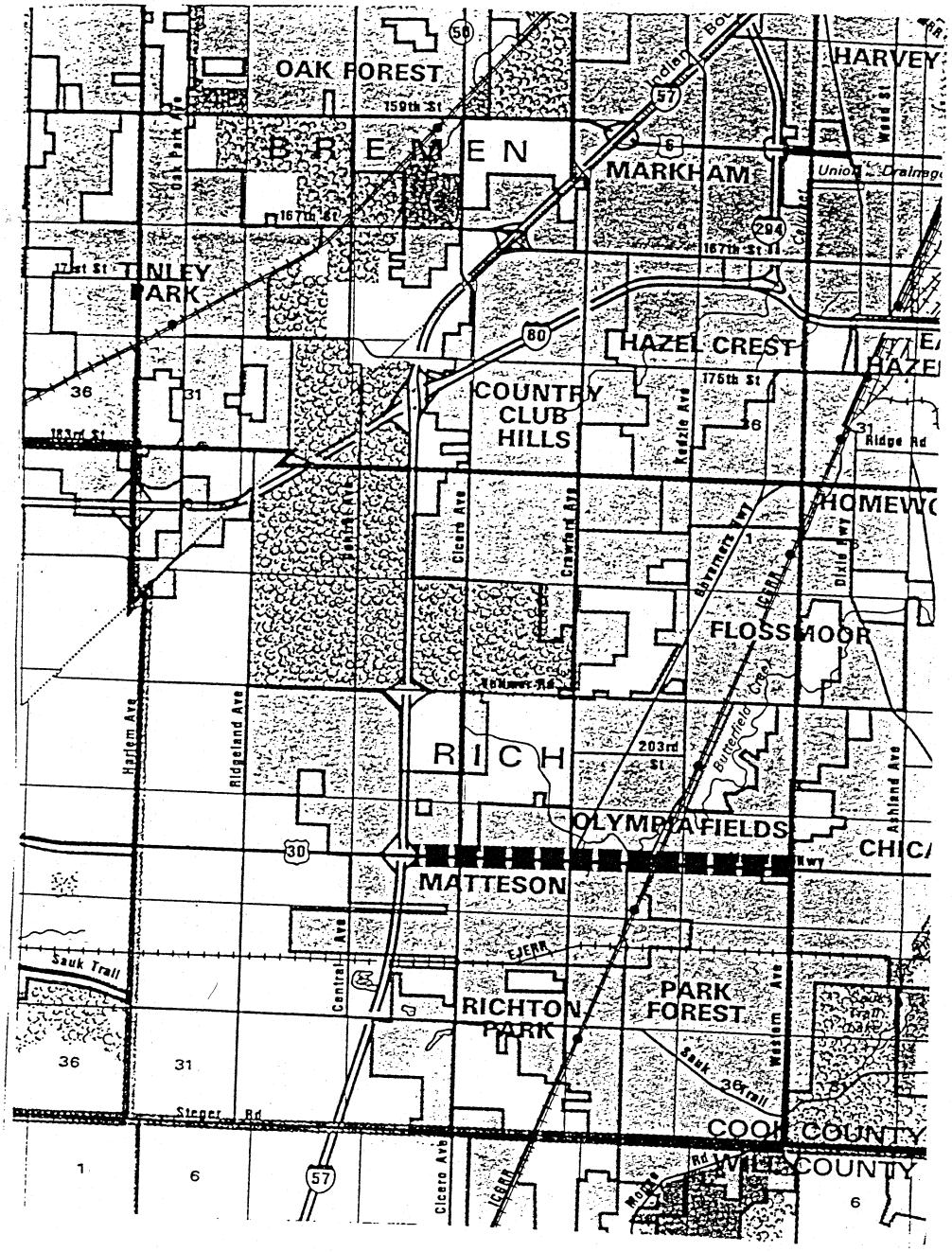
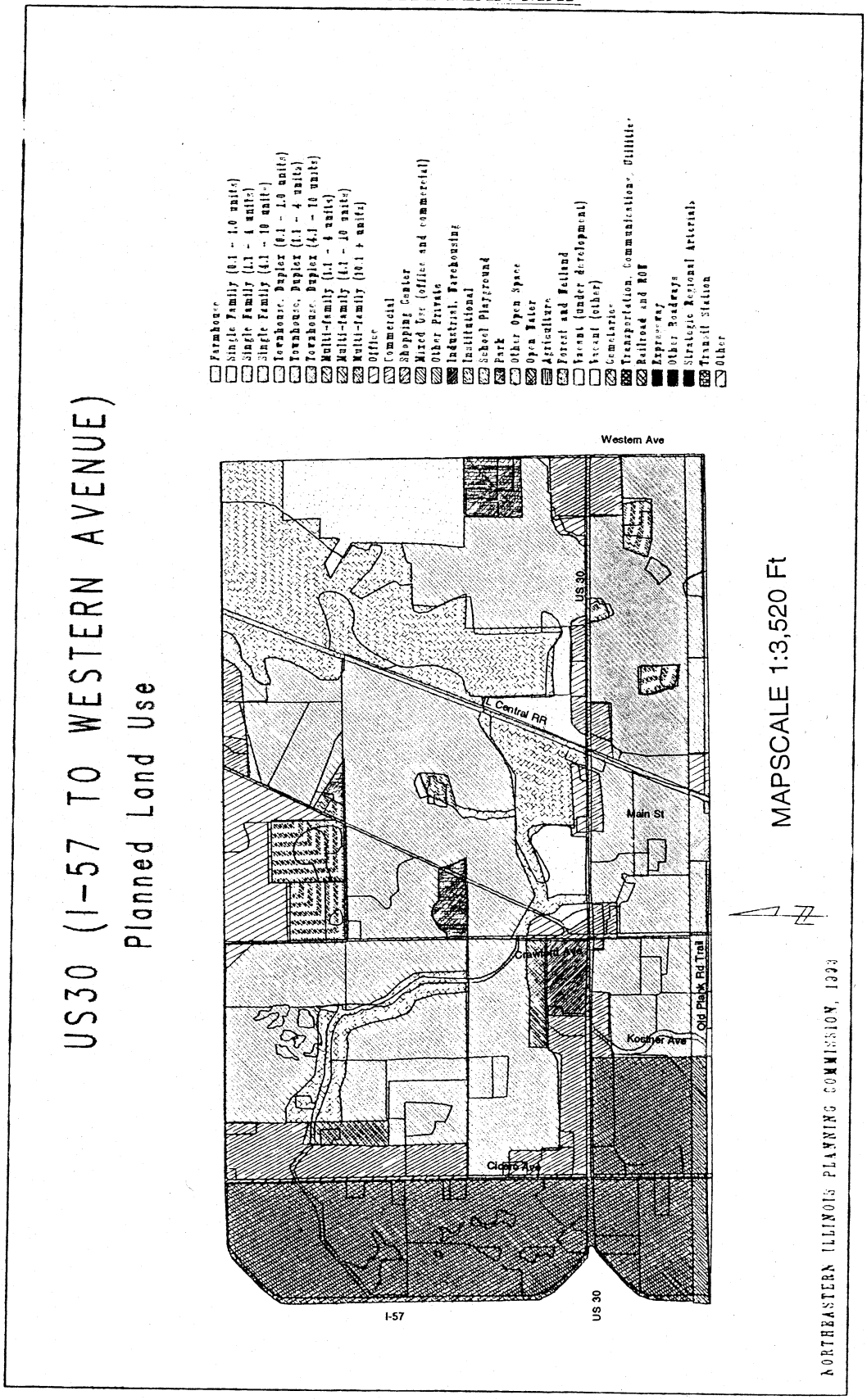


Figure II-3

COMPOSITE PLAN MAP



B. TRANSPORTATION ANALYSIS

SITE DESIGN CONSIDERATIONS

Interaction of Adjacent Land Uses

Within the US 30 corridor there are five major traffic generating developments: Olympia Fields Osteopathic Medical Center at Crawford and 203rd Street; Lincoln Mall Shopping Center at the southeast corner of Cicero Avenue and US 30; Matteson Town Shopping Center at the southwest corner of Cicero Avenue and US 30; and a shopping center located at the southwest corner of Western Avenue and US 30. Arterial roadways provide primary access between these developments.

Location and Number of Driveways

Along US 30 there are 31 major access points and 59 driveways between I-57 and Western Avenue. In this case major access points are defined as central driveways to shopping centers or collector roads. With an average of 30 access points per mile, appropriate access management strategies, such as the list in Appendix II-B, would be designed for a community with a relatively low level of development intensity and high traffic volumes.

Internal and External Traffic Circulation Patterns

There appears to be sufficient internal circulation at four of the five sites identified as major traffic generators (Medical Center, Lincoln Mall, Matteson Town Shopping Center), as well as the train station. For the most part, loading and unloading is facilitated by rear access drives or ring roads that permit trucks to circulate efficiently and not conflict with other traffic. Although collector roads were not used for access to most of these large properties, parking at the Metra train station is accessible by a collector street.

Access to stores on the northwest corner of Western Avenue and to the Crawford Street shopping center (located on northwest corner of Crawford and US 30) may create circulation problems for delivery trucks. There does not appear to be sufficient access to permit rear deliveries on either of these sites. Multiple driveways to smaller businesses within the larger shopping areas and the location of individual customer parking lots may also disperse traffic and hinder internal and external traffic circulation.

Projected Traffic Volumes

US 30 has an average daily traffic volume of 36,400 vehicles east of I-57. Between Cicero Avenue and Crawford Avenue there are an estimated 37,200 vehicles and east of Crawford Avenue there are 32,300 vehicles. Traffic volume is estimated at 33,200 vehicles east of the Illinois Central RR crossing, and at 32,500 vehicles at the intersection of US 30 and Western Avenue. 2010 Figures?

Accident Data

In 1990 there were 240 automobile accidents reported along the study corridor. In 1991 there were 283 automobile accidents. Accidents occurred most often between the hours of 7:00 AM and 11:00 PM, with more than half of all accidents occurring between 1:00 PM and 6:00 PM. In less than 25% of the accidents road surfaces were either wet, icy or snow covered.

Types of collisions which occurred most often in 1990 and 1991 include rear end collisions (42%, 46%), turning movements (43%, 36%), sideswiped vehicles traveling in the same direction (6%, 11%), and perpendicular collisions involving side and rear/front vehicle damage (7%, 4%). Intersections where collisions were most frequent include the following:

Table II-2

NUMBER OF AUTOMOBILE COLLISIONS PER INTERSECTION (1990 & 1991)

	1990	1991
Mid Contine - Venture	14	14
Cicero Ave.	43	40
Kostner Ave.	11	4
Betw/ Butterfield Creek and Matteson Place	7	7
Matteson Place	9	14
Betw/ K-Mart and Butterfield Creek	10	3
Crawford	38	48
Olympian	1	6
Indiana St.	1	6
Orchard Drive	8	16
Western Ave	26	46

In 1990 there was a collision involving a pedestrian, which occurred between Main Street and Olympian. In 1991 a pedestrian related accident occurred at the intersection of Cicero Ave. Three bicycle-related collisions occurred between 1990 and 1991: at the intersections of Western Avenue, between K-Mart and Butterfield Creek, and at Orchard Drive.

NEIGHBORHOOD CONNECTIVITY

Current patterns of development surrounding US 30, particularly south of US 30, tend to force drivers onto the arterial roadway rather than making use of local roads for short trips. Residential neighborhoods are cut off from adjacent retail shops and businesses. Local roadways dead-end at the borders of the subdivision and access to business and commercial uses tends to be limited to the side fronting US 30. Connectivity is slightly more apparent north of US 30, as the different subdivisions appear to be connected to one another by various local roads.

Both bicycle and pedestrian travel is inhibited by this lack of connectivity, and short trips ideal for a bicyclist or a pedestrian are made unnecessarily longer by automobile. Of the 11 intersections in the study area, 5 are equipped with crosswalks on both US 30 and the cross streets. Of those 5 with crosswalks, 2 of them are located at the intersections of Lindenwood Road and Kostner Avenue. Both of these roads provide direct access to the Lincoln Mall. However, major intersections at Cicero and at Western do not have crosswalks. Additionally,

only one street is equipped with a pedestrian button -- Olympian Way which parallels the railroad tracks. Pedestrian signals can be found at the Main Street intersection as well as Olympian Way.

Connectivity for the pedestrian and the bicyclist along this segment of US 30 appears to be sporadic and inconsistent. Simple, inexpensive improvements for crosswalks can provide better access to the area.

The "Village Center" concept planned by the Village of Matteson includes an essential element of connectivity. Plans are set to extend 207th Street across I-57. This extension will allow automobiles to travel across the expressway at this point, but will also allow both bicyclists and pedestrians to use the roadway.

PEDESTRIAN AND BICYCLE ACCESS

There are no sidewalks along the right-of-way of US 30. Pedestrian activity from one development to the next, on the arterial's right-of-way, is virtually impossible and extremely hazardous. Although the Lincoln Mall and the individual strip commercial centers are designed to be pedestrian accessible within their developments, travel from one to another (even though the distance may be relatively short), cannot be done on foot. It is necessary to drive out of one parking lot, onto the arterial and back into another parking lot. The increase in automobiles on the roadway and the break in traffic flow by constant pull-outs and turning cars further slows traffic and contributes to the growing level of congestion.

Providing pedestrian access along US 30's right-of-way (by installing and maintaining sidewalks along the road's length) would be extremely expensive and difficult to accomplish. In order to allow pedestrians to safely travel from one development to another, linkages parallel to the roadway should be provided.

A survey conducted by the Chicagoland Bicycle Federation revealed the following conditions for bicyclists on US 30. The results showed that biking conditions on US 30 from I-57 to Western Avenue are fair for experienced cyclists and poor for average and novice cyclists. Two recommendations have been made in order to improve the roadway's compatibility with bicyclists. The poor pavement areas at the Ridgeland, Central and Cicero intersections should be repaired. Also, the inner lane should be narrowed while widening the outer lane. With these improvements, conditions will be good for experienced and average cyclists while still poor for novice cyclists.

Some other obstacles on US 30 for bicyclists include: 4 major intersections with right turn lanes, less than half of the cross streets are equipped with crosswalks and only one pedestrian button exists along the study corridor.

ACCESS MANAGEMENT

One of the difficulties in managing access in northeastern Illinois is the development of narrow parcels of land which each have individual access to arterial roadways and result in short spacing between driveways. Access management is a process whereby public agencies and private developers are able to negotiate the number, type, and location of access points along a roadway. This process provides a balance between maintaining high standards for traffic capacity and providing necessary access to abutting development.

Four primary traffic management techniques are recommended by the Federal Highway Administration to control access to arterial roadways and facilitate safe and efficient traffic flows. These four techniques include: (1) Limiting the number of conflict points along a roadway (limiting or preventing certain kinds of maneuvers), (2) Separating basic conflict areas (reducing the number of driveways or directly increasing the spacing between driveways or intersections), (3) Providing for deceleration requirements (increasing driveway turning speeds, decreasing through highway speeds, or increasing driver perception time), and (4) Removing turning vehicles from the through lanes (providing separate paths and storage areas for turning vehicles).

Along US 30 there are 31 major access points (central driveways to shopping centers or collector roads) and 59 driveways between I-57 and Western Avenue. With an average of 30 access points per mile, appropriate access management strategies, such as the list in Appendix II-B, would be designed for a community with a relatively low level of development intensity and high traffic volumes.

FREIGHT DELIVERY AND DISTRIBUTION

As discussed in Section 2, there appears to be sufficient internal circulation at most sites within the study area. For the most part, loading and unloading is facilitated by rear access drives or ring roads that permit trucks to circulate efficiently and not conflict with other traffic. Freight delivery may be difficult at smaller properties where internal circulation is insufficient and rear access is unavailable. Sites which should be evaluated in closer detail include stores on the northwest corner of Western Avenue and the Crawford Street shopping center (located on northwest corner of Crawford and US 30).

TRANSIT SERVICE PLANS

Pace Service

Existing Pace bus service in the corridor include Route #357 which travels east and west along the arterial and Route #753 which serves the Lincoln Mall.

Metra Rail Service

Three transit stations currently serve Metra commuters in the US 30 corridor:

1) Metra Electric 211th Street Station in Matteson,

2) Metra Electric Matteson Station in Matteson, and
3) Metra Electric Olympia Fields Station in Olympia Fields

In 1986, Metra conducted a survey of license plates in the two Matteson station parking lots. Only a small, private lot exists at the Olympia Fields station and no license plates were recorded. The survey concluded that commuters at the 211th Street station live in close proximity to the station (approximately 7-10 square miles). Of the 170 vehicles parked in the lot, 90% were registered to people living within the commuter shed. The remaining 10% drove in to the station from the outlying communities of Glenwood, Chicago Heights and University Park.

The Matteson Station, located one-half mile south of US 30, was also surveyed in the same Metra report. This same study revealed that most commuters live within 10-12 square miles of the station. Of the 850 vehicles parked in the lot, 97% were registered to people living within the commuter area. Approximately 3% of the commuters travelled from residences in the surrounding communities of Frankfort and Country Club Hills.

Potential Future Transit Opportunities

The 2010 Transportation System Development Plan has identified the existing EJ&E rail tracks as a corridor of the future for commuter rail service. The "circumferential" line travels parallel to and south of US 30 in this study corridor.

The Guidelines for Diversified Regional Centers report prepared by Teska & Associates has identified extended bus service in the US 30/Lincoln Mall area. Among the recommendations, bus routes have been added on Cicero Avenue, both north and south of US 30, and on US 30, east of I-57. The Guidelines also propose two stations along the EJ&E rail line, one at the Metra Electric and EJ&E crossing and the other at the intersection of Cicero Avenue and the tracks. A station at the intersection of the two rail lines can provide connecting service from one line to the next. The second station will provide access to the Lincoln Mall and other surrounding office and commercial opportunities.

The US 30 Strategic Regional Arterial report prepared by Harland Bartholomew recommends that bus stops be located at all signalized intersections along US 30 from I-57 to Western Avenue. The Pace Development Guidelines recommend various amenities including shelters and turn-out areas be developed at bus stops to enhance the overall service. Such amenities should be provided wherever possible along US 30's bus stops.

In addition to more bus stops, the SRA report recommends new locations for park-and-ride lots to serve commuters. These lots have been proposed at US 30 and Central Avenue, and at US 30, west of Cicero (near I-57).

TRANSIT ACCESSIBLE DESIGN CONSIDERATIONS

Commuter Rail Access

Both of the Matteson Metra stations provide parking for automobiles to easily access the train station. The 211th Street Station (at Lincoln Highway) has two large lots which provide 644

parking spaces. The 216th Street Station provides 866 parking spaces in two large lots – one west and one east of the railroad tracks. The station at Olympia Fields does not provide for any separate parking facilities, however, it's location provides for easy drop-off and pick-up.

All three of the stations should be equipped to handle kiss-and-ride zones, as well as areas for buses to load and unload. Bicycle and pedestrian access should be considered in the station's design. Bicycle racks or lockers should be provided in a area which is both convenient and safe. A continuous system of sidewalks should surround the stations providing for pedestrian access.

Bus Access

Wherever possible, bus stops should be equipped with amenities such as shelters as described in Pace's Development Guidelines. Bus turn-out areas are another means of enhancing bus travel and would be especially appropriate within the Lincoln Mall.

C. PRELIMINARY RECOMMENDATIONS FOR U.S. ROUTE 30 CORRIDOR (I-57 TO WESTERN AVENUE)

This portion of the study contains a list of local development actions designed to promote compatibility between future land uses and transportation functions within the corridor. Composite land use plans and the transportation analysis along U.S. Route 30 were used to identify areas of conflict and to subsequently recommend strategies that could be implemented by local municipalities and by the Illinois Department of Transportation.

LIST OF LOCAL DEVELOPMENT ACTIONS

I-57 to Cicero Avenue, and to Crawford Avenue

Although the Village of Matteson has designed its comprehensive plan to promote interaction between four quadrants divided by U.S. Route 30 and I-57 interchange, the redesign of US 30 may create a barrier between these quadrants. The following recommendations are provided to minimize the impacts these physical barriers are expected to have on pedestrian and bicycle access, local vehicular traffic.

Village Center Development: As mentioned previously, the Village of Matteson is pursuing the development of a Village Center, located between Cicero and I-57 (north of U.S. Route 30, south of Volmer Rd.), which is intended to provide more pedestrian access between businesses and residences and to maintain local traffic within the central area -rather than onto major arterial roadways. The Village Center is to include a new community center/village hall and a village green (land has been acquired and development of this portion is expected within 3 years), 2 to 3 story mixed use developments (service oriented), commercial uses on lower levels of buildings, and high density residential units within close proximity to offices and stores. The design of buildings within the Village Center is to be "pedestrian" friendly with zero lot lines, sidewalks, and covered walkways between buildings.

As a component of the Village Center concept, Matteson plans to construct a bridge which would cross I-57, linking two quadrants of Village, without interfering with SRA or expressway traffic. The 3-lane bridge will provide access for local auto traffic and will have one lane for bikes and pedestrians. The bridge is to be built within 3 years, and when completed, Volmer will be widened to 4 lanes.

Pedestrian and Bicycle Access. Pedestrian access between the Village Center and land to the west of I-57 will be created with new bridge. It is recommended that path connections be created at the west side of the I-57 bridge, to connect the western edge of the Old Plank Road Trail. It is also recommended that the 14 acre park within the Village Center be developed to link the Forest Preserve to the north with the Old Plank Trail. The development of the Preservation path to the east of the Village Center, along

the Arco pipeline, is recommended to connect with the Old Plank Road Trail and create a circular path around the Village.

Currently there are no safe pedestrian crossings at U.S. Route 30 and I-57. To, facilitate safe access for pedestrians and bicyclists, it is recommended that a crosswalk be installed across U.S. Route 30 (preferably at the Preservation path - located along the Arco pipeline). Sidewalks should be extended along the east side of Cicero Avenue (at the intersection of U.S. Route 30) to provide access to the residential area located immediately south of the Lincoln Mall. Similarly, a sidewalk along the western side of Cicero Avenue would provide access between Sams, Walmart, and land planned for future industrial development (south of the Old Plank Road Trail).

Although the Lincoln Mall and individual strip commercial centers are designed to be pedestrian accessible within their developments, travel from one to another (even though the distance may be relatively short), is challenging on foot. It is recommended that sidewalks be connected to provide continuous access along the southern edge of U.S. Route 30 between the Lincoln Mall area and the commuter rail station to the east of Maple Street and that bicycle parking be installed at the commuter rail station. Consideration should also be given to construct sidewalks along the north side of U.S. 30 in order to provide continuous access from the Village Center to commercial developments between Cicero Avenue and Crawford Avenue.

Transit Access: Features of the Village Center concept include the development of a main arterial roadway (Corporate Lane) to facilitate bus service; an on-site feeder bus terminal to serve reverse commuters and to facilitate feeder service from the train station. 203rd Street is also to be extended east to connect with the train station in Olympia Fields.

Roadway Improvements: It is recommended that the 4-lane road which is to serve as a central arterial within the Village Center and provide access to U.S. Route 30 (between I-57 and Cicero) be constructed as proposed by the Village of Matteson. It is also recommended that a double left turn lane be installed at the intersection of Cicero Ave and U.S. Route 30.

Land Use: In order to maintain traffic flows along U.S. Route 30, it is recommended that property located west of I-57 be developed in accordance with Matteson's comprehensive plan: as residential rather than commercial. It is also recommended that direct access from these residential areas onto U.S. Route 30 be limited to intervals no less than 1600 feet in distance.

Consolidated Access. Access along U.S. Route 30 should be consolidated especially at properties northeast of the Cicero Avenue intersection. A cross access easement is also recommended at this location. When there is an excessive number of individual driveways, it is necessary to drive out of one parking lot, onto the arterial and back into another parking lot. The increase in automobiles on the roadway and the break in traffic flow by constant pull-outs and turning cars further slows traffic and contributes to the growing level of congestion.

Crawford Avenue to Western Avenue (Northern portion within Olympia Fields)

Transit Access. Discussions are now underway to link the U.S. Route 30 commuter rail station and Olympia Fields station to accommodate reverse commute patterns. It is also possible that PACE service may be relocated to the Village Center. It is recommended that both of these proposals be implemented.

Traffic Circulation. Access to stores at the Crawford Street shopping center (located on northwest corner of Crawford and U.S. Route 30) and at the northwest corner of Western Avenue may create circulation problems for delivery trucks. There does not appear to be sufficient access to permit rear deliveries on either of these sites. Re-evaluation of this site design is recommended. It is also recommended that the intersection of Main Street and U.S. Route 30 be widened to facilitate turning vehicles.

Consolidated Access. Multiple driveways to smaller businesses within the larger shopping areas and the location of individual customer parking lots may also disperse traffic and hinder internal and external traffic circulation. Access along U.S. Route 30 should be consolidated especially at the following locations: Bonanza and McDonalds, Red Lobster and Bacci's, at the LaSalle Bank entrance, at Builder's Square, and at properties located at the Western Avenue intersection. In re-evaluating the site design of these properties, cross access easements should be considered where appropriate, as an alternative to shared driveways.

Illinois Central RR to Western Avenue (Southern portion within Park Forest)

Bicycle/Pedestrian Linkages. The Old Plank Road trail is a 22 mile path on the Penn Central Railroad ROW which extends from Western Avenue to Pilcher Rd in Joliet. The Village of Frankfurt has received funds to construct a trail (located 3-4 blocks from U.S. Route 30) which would connect the downtown area and library to the Old Plank Trail. The Village of Park Forest has also pursued ISTEA funds in order to construct a bike path from Western Avenue west to the Village of Frankfurt. Some funds have already been secured and construction is proposed for the Fall of 1994 - 1996. It is recommended that the Old Plank Trail be extended to connect with the Cook County Forest Preserves in the Bloome Township.

PART III - NORTH AVENUE

(From Cicero to Lake Shore Drive)

INTRODUCTION

North Avenue was chosen as a pilot project because of its location in a developed urban area with a variety of land uses and modes of transportation. It is a major east-west route within the City of Chicago which is expected to carry an average of 30,000 - 50,000 vehicles per day by the year 2010. Three Metra commuter trains serve the North Avenue corridor. There are also three CTA rapid transit lines and extensive bus service. With the variety of retail shops and businesses, proximity of lakefront parks, and transit accessibility in this area, pedestrian and bicycle activity are also quite high.

Local Actions

The results of this study have been discussed with the Chicago Departments of Planning & Economic Development, Transportation, the Chicago Transit Authority, the Park District. NIPC staff have also met with members of the Lincoln Park Task Force to incorporate recommendations for the Lincoln Park area. These efforts resulted in a list of local development actions that might be taken to promote compatibility between transportation facilities and adjacent land uses (See Section III.C.). This list of recommendations will be evaluated during the final traffic analysis and urban design phase of this project.

Compatibility

The study area is located in a developed urban area and has a variety of land uses which include commercial, office, residential, recreational and industrial. North Avenue and other arterial roadways within the study area are lined with small local businesses. There is little vacant land and many older, industrial buildings are being used for commercial, office and residential uses. There is very little vacant land in the corridor, and many older, industrial buildings are being converted to commercial, office and residential uses.

As with U.S. Route 30, the major issues of concern along the corridor are traffic circulation and improvements for pedestrian and bicycle access. With the variety of retail shops and businesses, proximity of lakefront parks and transit accessibility in this area, pedestrian and bicycle activity is quite high. Conflicts between pedestrians, bicyclists, and motorists are illustrated by accident data in Section B. In 1991, there were 1,141 automobile accidents reported along the study corridor - 54 of which involved pedestrians, and 17 of which involved bicycles. Accidents occurred primarily during daylight hours (62%), however there was no particular hour of day when accidents occurred most frequently. Specific recommendations to address these issues of compatibility between the roadway and adjacent land are located in Section C.

Next Steps

The next phase of this study will require a traffic analysis and urban design assistance in order to evaluate the feasibility of local development actions listed in Section C. The objective of this next step is to refine and augment the set of initiatives that can be implemented to promote compatibility.

A. COMPOSITE PLANS FOR THE NORTH AVENUE CORRIDOR

North Avenue is an east/west strategic regional arterial located in Cook, DuPage and Kane Counties. For the purposes of this pilot project, a study area of approximately 6 1/4 miles along North Avenue from Cicero Avenue on the west to Lake Shore Drive on the east was established. The area is bounded by Armitage on the north and Division Street on the south, which allows for 1/2 mile on either side of North Avenue. This study area falls within the limits of the City of Chicago in Cook County. See Figure III-1, PROJECT STUDY AREA. Base information consisting of the following inventory was collected and prepared for this corridor:

- Identification of land uses from 1990 aerial photographs
- Collection of current zoning for the area
- Identification of development areas
- Identification of regional transit and commuter rail station areas
- Identification of regional highway interchange areas

LAND USE INFORMATION

Existing Land Uses

Over half of the land within the North Avenue corridor is residential, consisting of duplex (50%) and multi-family units (6%). Other land uses include manufacturing (17%), commercial and office (15%), institutional (4%), and parks (8%). There is very little vacant land in the corridor, and many older, industrial buildings are being converted to commercial, office and residential uses. Table 1, below illustrates estimated acreages for general land use categories within the North Avenue corridor. For a more detailed breakdown of land use categories, see Appendix III-A.

Table III-1 - LAND USES WITHIN NORTH AVENUE CORRIDOR

LAND USE	TOTAL ACRES	PERCENT OF TOTAL CORRIDOR
OPEN SPACE/VACANT	300.5	9%
RESIDENTIAL	1931	55%
EMPLOYMENT	1274	36%
TOTAL	3505.5	100%

The eastern edge of North Avenue is experiencing development which is predominantly commercial in nature. East of Halsted Street four new retail projects have been identified. In the areas west of Halsted Street both commercial and industrial developments are under construction. See Figure III-2, 1990 LAND USE MAP.

Planned Land Uses

According to a plan completed by the City of Chicago, (Corridors of Industrial Opportunity: A Plan for Industry in Chicago's West Side), a portion of the North Avenue SRA corridor has been designated as a corridor of industrial opportunity. The western edge, from Cicero to Kostner is a part of the "northwest corridor". This plan is one of three industrial area land use plans and together will provide the framework for implementing the City's industrial land use policy. These areas which have been designated as industrial corridors are to be highest priority for long term industrial development and investment.

In addition, the City of Chicago has also identified various Planned Manufacturing Districts (PMD) throughout the city. Three of these PMDs directly impact the North Avenue study corridor. The Clybourn Corridor PMD extends north of North Avenue along Clybourn Street, west to the Chicago River. The Elston Corridor PMD is located in between the west leg of the river and the expressway. Its boundaries extend north and south of North Avenue, past both Armitage Avenue and Division Street. Goose Island PMD, located between the extensions of the river, is just south of North Avenue and extends south past Division Street.

DEVELOPMENT AREAS

Future Development

Major development areas in the North Avenue corridor are clustered predominantly east of Sheffield Avenue. Older, obsolete manufacturing buildings are being rehabilitated into commercial, office and residential uses. Some new development (especially strip commercial) is appearing on vacant sites where industrial buildings used to be located. The nature of these new developments will likely attract more traffic into the area due to the increase in on-site, free parking lots that are being provided.

The NIPC development database (NDD) tracks developments which are planned, proposed or under construction. A 15,000 square foot shopping center on North Avenue at Sheffield is planned for development in the area. This development is a two story retail strip center with eight tenants. The rehabilitation of a former industrial building into an entertainment theater is also planned for the area. The project, located at 845 West North Avenue, consists of three theaters, a 600 seat open stage, a 350-seat cabaret and a 120 "black box" space for new and experimental work. The theater will also house a restaurant on the first floor of the building.

Proposed at 3038 West North Avenue, across from Humboldt Park, is the rehabilitation of a vacant building into a 36 unit, 4 story apartment building. The building will also house commercial facilities on the first floor. Also, a former CTA bus garage at North and Cicero has been demolished and a commercial shopping center has been proposed. If built, this development could create up to 2,000 new jobs in the area.

At North Avenue and Halsted Street, a shopping mall and multi-family residential building is under construction. The three story residential portion consists of 20 rental units and the

entire development is 49,000 square feet. This total square footage includes 39 parking spaces primarily for the retail portion of the development.

The NDD reports that conversion of a former used tire outlet at 1725 West North Avenue to a commercial and residential facility has recently been completed. The first floor commercial portion includes a caterer, computer leasing firm and two other unspecified tenants. Floors two through four are set aside for multi-unit residential.

The City of Chicago has compiled a publication Chicago Neighborhood Development which also reports new construction development projects. This report supplements the NDD information for new development in the North Avenue corridor (from 1987-1990). The eastern edge of North Avenue is experiencing development which is predominantly commercial in nature. Four new retail projects have been identified along North Avenue, east of Halsted Street. In the area west of Halsted Street, both commercial and industrial projects have been tracked. Delta Technologies (1620 W. North Avenue) and Helene Curtiss (4401 W. North Avenue) are both new construction projects which are intended to serve as industrial storage facilities for the companies. Various commercial facilities, primarily west of Central Park Avenue are also new to the corridor, including CAR X (an auto service shop) and a gas station, as well as two restaurants and a laundromat.

Cicero to Kostner is part of the "northwest corridor", designated by the City of Chicago as one of three industrial areas to be of highest priority for long term industrial development and investment. There are also three planned manufacturing districts (PMD's) which will directly impact the North Avenue study area. These PMD's are located along Clybourn Avenue (north of North Avenue to the Chicago River), Elston Avenue (between the west leg of the Chicago river and the expressway), and in Goose Island (between the river, south of North Avenue and Division Street).

REGIONAL TRANSIT STATION AREAS

The North Avenue corridor is serviced by both CTA and Metra trains. The CTA's Howard, Ravenswood and O'Hare rapid transit lines all provide station stops within the study area.

1) Howard Line, station at North Avenue and Clybourn (A stop only)
2) Ravenswood Line, Sedgwick station (B stop only)
3) O'Hare Line, station at Damen

1990 ridership levels at the three stations were reported by the CTA as follows: Howard-906,000 passengers per year, Ravenswood-294,000 passengers per year and O'Hare-403,000 passengers per year. Average weekday ridership was also computed (in 1989) for the three stations and levels were reported as follows: 1600-Howard, 1500-Ravenswood and 3250-O'Hare.

Three Metra commuter trains service the North Avenue corridor. The Chicago & Northwestern's North Line and Northwest Line both share the Clybourn Street station. In 1986, Metra conducted a survey of license plates in the station parking lot. The survey

indicated that approximately 90% of the plates were registered to residences within a 7 mile area surrounding the station. The remaining plates identified commuters from as far south as 55th Street -- almost 10 miles from the station.

The Milwaukee West Line also services the North Avenue corridor at both the Hermosa Station and the Cragin Station, during rush hour only. The same Metra report revealed that of the 29 addresses identified at the Hermosa station, over 50% were registered to residences within 2 miles of the station. The remaining plates identified commuters residing between 3 and 10 miles from the station. Plates registered at the Cragin Station indicate that almost 50% of the cars are registered to residences within 0-3 miles of the station. The remaining plates identified commuters from between 4 and 10 miles from the station.

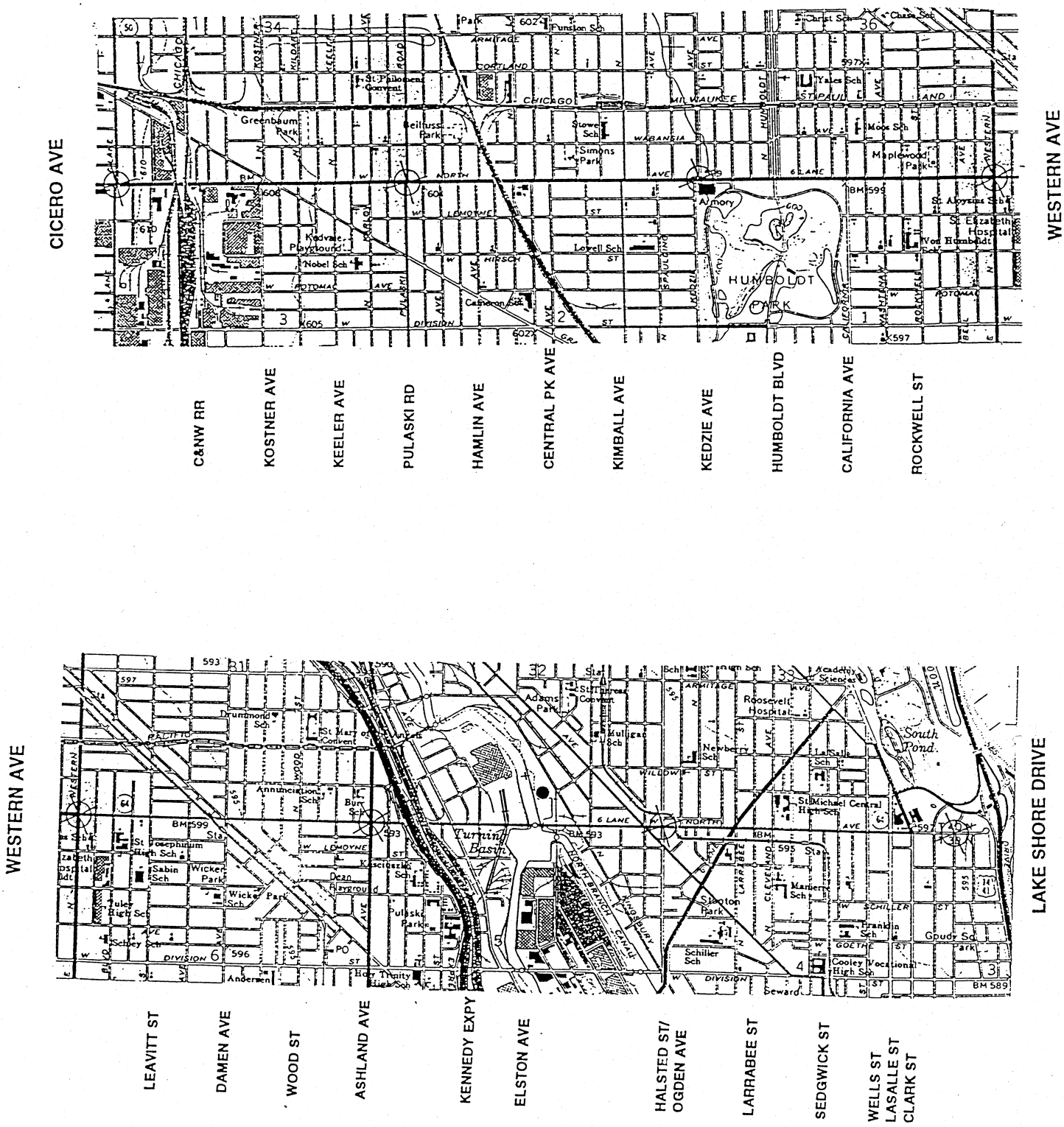
The North Avenue corridor is also serviced by CTA buses. Route #72 travels east and west on North Avenue along the length of the corridor. It runs 24 hours a day, 7 days a week. Numerous north/south routes provide access to the area as well.

REGIONAL HIGHWAY INTERCHANGE AREAS

An interchange at North Avenue and the Kennedy Expressway (I-94) provides automobile access into the corridor. This four way interchange allows for access onto North Avenue for both north and south bound traffic on I-94.

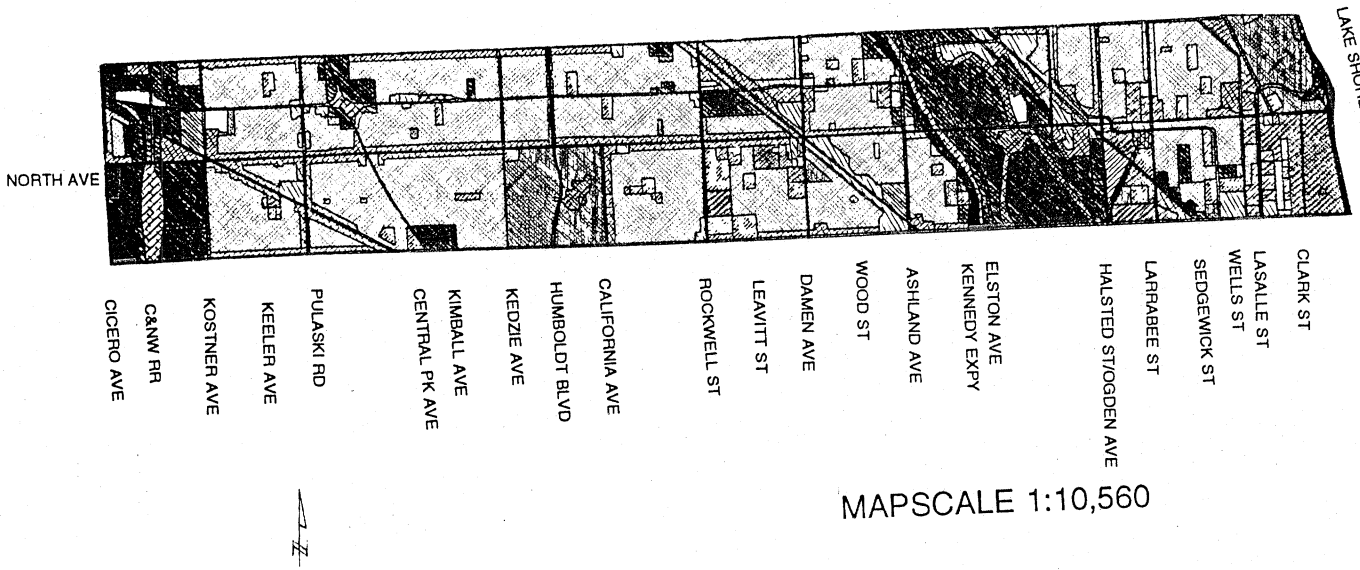
Figure III-1

PROJECT STUDY AREA



NORTH AVENUE (Cicero Ave to Lake Shore Dr)

Existing Land Use



Farmhouse
Single Family (0.1 - 1.0 units)
Single Family (1.1 - 4 units)
Single Family (4.1 - 10 units)
Townhouse, Duplex (0.1 - 1.0 units)
Townhouse, Duplex (1.1 - 4 units)
Townhouse, Duplex (4.1 - 10 units)
Multi-family (1.1 - 4 units)
Multi-family (4.1 - 10 units)
Multi-family (10.1 + units)
Office
Commercial
Shopping Center
Mixed Use (office and commercial)
Other Private
Industrial, Warehousing
Institutional
School Playground
Park
Other Open Space
Open Water
Agriculture
Forest and Wetland
Vacant (under development)
Vacant (other)
Cemeteries
Transportation, Communications, Utilities
Railroad and ROW
Expressway
Other Roadways
Strategic Regional Arterials
Transit Station
Other

Figure III-2

1990 LAND USE MAP

NORTHEASTERN ILLINOIS PLANNING COMMISSION, 1993

B. TRANSPORTATION ANALYSIS

SITE DESIGN CONSIDERATIONS

Interaction of Adjacent Land Uses

Along the North Avenue study area there are a number of properties which generate automobile, bicycle and pedestrian traffic. The western end of North Avenue (from Cicero Ave. to Humboldt Park) has a mix of manufacturing, commercial, and residential land uses. Large properties located to the north of North Avenue, which may generate a considerable amount of automobile traffic, include a shopping center at Kostner (access off of Grand Ave.); manufacturing at Armitage Avenue (with access from Cicero Ave. and Kostner) and at Hamlin Avenue (access off of Cortland with adjacent access to Armitage Avenue). South of North Avenue there is also manufacturing and a shopping center on Pulaski and Grand Avenue.

Humboldt Park is a 160 acre property located south of North Avenue (between Kedzie and California). The park attracts visitors to the Illinois National Guard station as well as people interested in recreational activities (park trails, tennis courts) and occasional cultural activities or festivals. Major access points are located at Humboldt Drive and North Avenue; Hirsch and Kedzie; West Lemoyne and California; and Division St.

The eastern end of North Avenue has a mix of manufacturing, commercial and residential land uses as well as transit stations, museums, schools and hospitals. Lincoln Park and the North Avenue beach are two sites which attract automobiles, pedestrians and bicyclists. Because parking is in high demand within the North Avenue corridor, public parking areas attract many automobiles at these sites. Lake Shore Drive also attracts and generates automobile traffic along North Avenue.

Properties which attract manufacturing related traffic are located at Western Avenue and North Avenue; east of the Kennedy expressway; between Elston and Magnolia; east of Elston to river edge; and east of Kingsbury. Major commercial attractions include properties between Sheffield and Clybourn; at Dayton; west of Halsted; and a shopping center on the corner of Ashland and Milwaukee.

Location and Number of Driveways

The six mile corridor of North Avenue has a total of 185 access points (which includes 144 roadway intersections and major entrances to large developments and 41 driveways to individual properties). For east and westbound lanes there are an average of 24 roadway intersections or major entrances per mile and 14 access points to individual properties. With this number of access points, appropriate access management strategies, such as the list in Appendix III-B, would be designed for a community with medium to high levels of development intensity and high traffic volumes.

Internal and External Traffic Circulation Patterns

Property along the west end of the North Avenue corridor has little on-site traffic circulation due to the density and proximity of buildings to the streets. Traffic circulation is facilitated by a street layout which resembles a grid system.

Traffic circulation on North Avenue and adjacent roadways should be planned to accommodate multiple modes. In the eastern portion of the study area, Lincoln Park and the North Avenue beach are locations which are especially attractive to pedestrians and bicyclists. Community groups such as the Lincoln Park Master Plan task force, would like to see designs which facilitate public transportation, pedestrian and bicycle movement and minimize conflicts between these modes and automobiles. One proposal the task force is considering includes the relocation of a bike path along the lakeshore, closure of on- and off-ramps to Lake Shore Drive, and restriction of parking at the North Avenue beach. Automobile drivers in search of parking, currently enter the beach parking lot and circulate back onto Lake Shore Drive. This movement increases the number of cars driving through the lot, increases possible conflicts with both pedestrians and bicyclists, and delays traffic when vehicles re-enter the stream of traffic on Lake Shore Drive. Before the proposal is implemented, however, thought should be given to how removing Lake Shore Drive access might create additional traffic and/or bottlenecks at Fullerton and Division entrances to Lake Shore Drive.

Projected Traffic Volumes

The 1990 Traffic Map produced by the Illinois Department of Transportation indicates that North Avenue carries an average of 25,100 vehicles per day (east and west bound) at the intersection of Cicero Avenue. West of Western Avenue, North Avenue carries an average traffic volume of 24,300 and 18,900 vehicles east of Western Avenue. At the Ashland intersection there is an average daily traffic volume of 22,800, and east of the Kennedy Expressway, North Avenue carries approximately 33,600 vehicles per day to Clybourn Avenue.

Estimates of average daily traffic volumes along North Avenue illustrate that many right and left turns occur at Western Avenue and Ashland Avenue. It also appears that at least 10,800 more vehicles travel between the Kennedy Expressway and Clybourn Avenue than estimated for the rest of the North Avenue corridor.

The Chicago Area Transportation Study (CATS) projected an average number of vehicle trips anticipated (per day) for the year 2010. The table below lists future travel demand for segments of the North Avenue corridor. The table also lists roadway capacity as estimated by Harland Bartholomew & Associates.

Table III-2

AVERAGE DAILY TRAFFIC VOLUMES FOR MAJOR LOCATIONS ALONG NORTH AVENUE

SEGMENT	AVERAGE DAILY TRAFFIC	CAPACITY
Cicero to Pulaski	30,000 to 40,000	51,000
Pulaski to Western	30,000 to 50,000	47,000
Western to Sheffield	30,000 to 50,000	33,000
Sheffield to LaSalle Street	30,000 to 40,000	41,000
LaSalle Street to Lake Shore Drive	> 50,000	44,000

It is important to recognize that average daily traffic, projected for the year 2010, exceeds arterial capacity between Pulaski and Sheffield, and between LaSalle Street and Lake Shore Drive. The capacities listed above assume that all through lanes are in use, and are not being used to accommodate on-street parking.

Accident Data

In 1990 there were 1,130 automobile accidents reported along the study corridor - 49 of which involved pedestrians, and 12 of which involved bicycles. In 1991, there were 1,141 automobile accidents reported along the study corridor - 54 of which involved pedestrians, and 17 of which involved bicycles. Accidents occurred primarily during daylight hours (62%), however there was no particular hour of day when accidents occurred most frequently.

Types of collisions which occurred most often in 1990 and 1991 include rear end collisions (30%, 29%), turning movements (21%, 22%), sideswiped vehicles traveling in the same direction (16%, 17%), perpendicular collisions involving side and rear/front vehicle damage (12%, 12%) and parked vehicles (10%, 11%). Intersections where collisions were most frequent are listed on the following page.

Table III-3

NUMBER OF AUTOMOBILE COLLISIONS PER INTERSECTION (1990 & 1991)

	1990	1991
Kostner	30	23
Central Park	17	12
Kedzie	14	15
Humboldt Blvd.	20	18
California	20	23
Western Ave.	15	12
Damen Ave.	15	12
Ashland	27	34
I-94	10	19
Sheffield	16	11
Clybourn Ave.	13	17
Halsted	25	23
Sedgewick	15	16
Betw/ LaSalle and Clark	20	16

Particular locations along the North Avenue corridor experienced collisions involving pedestrians and bicyclists. In 1990, there were two or more pedestrian related accidents between Fairfield and Washtenaw (2), Talman (3), Damen (3), Ashland (2), and Elston (2). Bicycle accidents occurred at scattered locations in 1990. One bicycle related accident was reported at each of the following locations: between Kostner and Kilbourn, between Kedvale and Karlov, between Hamlin and Ridgeway, between Kedzie and Troy, at Francisco, at Talman, West of Western Ave., between Winchester and Wolcott, between Orleans and North Park, and at Weiland.

In 1991, two or more pedestrian related accidents occurred at the intersections of North Avenue and Kildare (2), Pulaski (3), between Harding and Springfield (2), between St. Louis and Homan (3), between Homan and Spaulding (3), between Sawyer and Kedzie (2), California (2), between Marshfield and Ashland (3), between Ashland and Bosworth (5), between the Soo railroad and Sheffield (2), between Mohawk and Sedgewick (4), at LaSalle (2), and at Clark (3). Locations which also experienced one or more bicycle accidents include North Avenue between Tripp and Keeler (1), Springfield (1), Hamlin (1), between Homan and Spaulding (2), California (1), between the CTA Elevated line and Milwaukee (1), west of Western Ave. (1), between Hermitage and Paulina (1), between Ashland and Bosworth (2), at I-94 (1), at Fremont (1), between Halsted and the CTA Elevated line (1), at Wells (1), and at Clark (1).

PEDESTRIAN AND BICYCLE ACCESS PLANS

North Avenue's location in an urban environment promotes the use of a means of transportation other than the private automobile. The continuous system of sidewalks and the system of interconnecting streets (the grid system) provides an environment which is conducive to travel by both bicyclists and pedestrians. Many of the obstacles to non-auto travel found on suburban SRAs do not exist along this urban SRA (i.e. the omission of sidewalks and streets which end in cul-de-sacs, etc.). However, other factors which inhibit travel by bicycle or by pedestrians need to be considered and mitigated because of the importance of these travel modes in this corridor.

Pedestrian Travel

Because a comprehensive sidewalk system is already in place in the North Avenue study corridor, it is important to maintain its usefulness as a means of travel. An effort should be made to avoid over-cluttering with poles, low hanging branches, sign posts, trash containers, tree planters and other obstacles in order to maximize access for the pedestrian. The sidewalks along the length of the arterial are substantial in size – 10 feet wide from Cicero to Western and 9 feet wide from Western east. These widths can easily accommodate significant pedestrian travel as nationally recognized standards recommend 10 ft. sidewalks in urban areas. Crosswalks and crossing signals should be maintained along the corridor at every intersection. The crossing signals should be adequately timed for both pedestrian and bicycle use.

The North Avenue corridor already functions as an effective pedestrian corridor but measures need to be taken to retain this existence. Recent developments in the corridor (particularly the strip commercial development) are providing more parking, thus inviting more automobile traffic into the area. Effort must be made to ensure the upkeep of the existing sidewalk system so that both the automobile and the pedestrian can share the roadway. No new development should be permitted to eliminate existing sidewalk, particularly for the sake of providing additional automobile parking.

Bicycle Travel

Unlike the pedestrian who can travel North Avenue on a separate sidewalk, the bicyclist must share the same right-of-way as the automobile. Accommodation along the roadway must be made in order to maximize access for the bicyclist. The width of North Avenue is narrower than suburban SRAs and there is little room for expansion due to the built out nature of development in the area. An SRA is designed to be a high speed alternative to freeway travel, and with such heavy usage and high speeds, can pose significant hazards for the bicyclist. Ideally, the outer lane of traffic would be widened to provide adequate travel space for the bicyclist, or better still, a separate bicycle lane would be designated along the arterial. However, expansion of the roadway in the North Avenue corridor is not possible. Bicyclists will be forced onto the same right-of-way as this high speed auto traffic. However, North Avenue does have various existing characteristics which can promote bicycle travel. Of the 28 intersections, only one (at North and Larrabee) provides a right turn lane. Such right turn lanes often pose hazards to bicyclists and therefore do not provide optimum riding conditions when they are abundant along a roadway.

All of the cross streets, and the intersections on the arterial, are characterized by painted cross walks on the street and pedestrian signals.

A survey by the Chicagoland Bicycle Federation was conducted to assess bicycle compatibility along the North Avenue corridor. The study corridor was divided into three segments for this survey: Austin to Western (Cicero to Western), Western to LaSalle and LaSalle to Lake Shore Drive. Compatibility results for bicyclists on North Avenue were the same for all three of the segments -- fair for experienced cyclists and poor for average and novice bicyclists. These ratings indicate a serious need for improvement in the roadway in order to provide a safer riding environment for all levels of bicyclers.

Specific recommendations were made for each of the three segments in order to improve the roadway's compatibility for bicycle riding. On segment 1 - Cicero to Western, the survey recommends the narrowing of the inner lane and the widening of the outer lane, as well as the limiting or elimination of parking along the roadway. With these improvements, the compatibility of this segment would be improved to good for experienced and average cyclists, but still remain poor for the novice cyclist.

On segment 2 - Western to LaSalle, the recommendations include the two noted in segment 1 as well as these additions: resurface pavement on bridges, study alternative crossings for bicycles and install caution signs at bridges. These improvements will provide good compatibility for the experienced cyclist, fair for the average cyclist and poor for the novice cyclist.

The recommendations for segment 3 - LaSalle to Lake Shore Drive the recommendations were the same as for segment 1 -- narrow inner lane and widen outer lane, and limit or eliminate parking. These two improvements will provide good bicycle compatibility for the experienced cyclist, fair for the average cyclist and poor conditions for the novice cyclist. The design of the existing roadway (lack of right turn lanes, etc.) together with the above segment-specific recommendations, could result in a bicycle friendly roadway for at least the experienced and the average bicyclist.

ACCESS MANAGEMENT

Four primary traffic management techniques are recommended by the Federal Highway Administration to control access to arterial roadways and facilitate safe and efficient traffic flows. These four techniques include: (1) Limiting the number of conflict points along a roadway (limiting or preventing certain kinds of maneuvers), (2) Separating basic conflict areas (reducing the number of driveways or directly increasing the spacing between driveways or intersections), (3) Providing for deceleration requirements (increasing driveway turning speeds, decreasing through highway speeds, or increasing driver perception time), and (4) Removing turning vehicles from the through lanes (providing separate paths and storage areas for turning vehicles).

The pre-draft report of Illinois Route 64 (North Avenue), prepared by Harland Bartholomew and Associates, recommends that the ultimate roadway section (between Cicero Avenue and Western

Avenue) consist of six through lanes plus a twelve foot median during peak hour travel periods. Currently there are two through lanes and on-street parking from Western Avenue to Orchard Street. From Orchard Street to LaSalle Street ROW width is 100 feet and from LaSalle Street to Lake Shore Drive, North Avenue becomes a boulevard which ends in a cul-de-sac and a pedestrian subway to the North Avenue beach. IL 64 continues north from North Avenue to Clark Street and onto LaSalle Drive. With this number of access points located along the North Avenue corridor, appropriate access management strategies, such as the list in Appendix III-B, would be designed for a community with medium to high levels of development intensity and high traffic volumes.

DEMAND MANAGEMENT

The Chicago Area Transportation Study has organized two task forces to address requirements imposed by the 1990 Clean Air Act Amendments: a Demand Management Task Force and an Employee Trip Reduction Task Force. Through joint efforts of the Employee Trip Reduction and Demand Management Task Forces, a demonstration project has just been completed which involved the participation of 17 employers of 100 or more employees within northeastern Illinois. Employers worked with CATS and the task force members to produce compliance plans designed to reduce the number of single occupant vehicles driven to the worksite.

One of the participating employers was the Brach's Candy Company. Brach's is located within close proximity to the North Avenue study Corridor and employs of over 2400 employees. Though the company was unable to implement all of the incentives and strategies listed in the compliance plan, initial discussions with Brach's identified an interest in developing a corridor-wide demand management plan which may eventually involve Helene Curtiss and other companies located along North Avenue. Brach's may also consider implementing a vanpool program, customized transit services to Metra stations, and continue to educate employees on the various alternative commute programs available.

The Demand Management Task Force is currently developing a handbook which lists demand management options available to employers in northeastern Illinois. Employers may consider the following transportation options for inclusion in their trip reduction compliance plans: public transit (rail and bus); customized transit service, such as shuttles or feeder service, and subscription bus service; ride share services (vanpool, carpool); bicycling; and walking. The following management-based options may also be included in the compliance plans: transportation management associations; parking management; guaranteed ride home programs; on-site facilities (cafeteria, convenience shops, day care, etc.); and alternative work schedules such as compressed work weeks, staggered hours, flex-time, and telecommuting.

PARKING MANAGEMENT PLANS

Parking at the eastern end of the North Avenue corridor has been evaluated by a Lincoln Park Task Force, which assembled in 1988 to produce a master plan for Lincoln Park. The Task Force

has developed recommendations regarding traffic circulation, bicycles and pedestrians, public transportation, and parking within Lincoln Park.

The task force encourages park access by public transportation, bicycles and pedestrians rather than by automobiles. There are on-going discussions with the Chicago Transit Authority to improve bus access and circulation. In regard to parking, the task force proposed that long term parking within the park be eliminated and replaced with short term permits or meters. On-street parking is also to be removed from along the Stockton Street entrance on LaSalle Drive so as to create a "gateway" to the park.

Parking at the North Avenue beach house contributes to traffic circulation problems. Currently there are 101 parking spaces at this parking lot. Vehicles enter from Lake Shore Drive and circulate back onto Lake Shore Drive when all spaces are full. This is a major concern to the task force because of safety and added delay on Lake Shore Drive. Preliminary task force proposals include closing on- and off-ramps to Lake Shore Drive and limiting the North Avenue beach parking lot to handicapped vehicles (16 spaces) and life guards (40 spaces).

The Task Force is organized by the Chicago Park District and includes representatives from the Park District, Chicago Department of Transportation, Chicago Police Department, and other local groups representing the Lincoln Park community.

FREIGHT DELIVERY AND DISTRIBUTION

North Avenue (from Halsted to Cicero) serves as a preferential truck route. The following streets, located within the North Avenue study corridor, have also been identified by the City of Chicago as part of a preferential truck route system (Date: June 1988): Ashland (North to Irving Park); Elston (Irving Park to Milwaukee); Grand (Cicero to Chicago); Halsted (Chicago to North); Pulaski (Chicago to Irving Park); and Western (Chicago to Irving Park). Currently truck drivers are experiencing a conflict between weight restrictions mandated by the Department of Consumer Services and the City of Chicago. Discussions are now underway to resolve this conflict and to implement consistent standards.

THOROUGHFARE PLANS

The Task Force of Lincoln Park proposes that LaSalle Drive be modified to include a landscaped median. A bus lane to provide more efficient CTA access to the park is also recommended.

Other plans for roadways within the North Avenue corridor include Lake Shore Drive, Western Avenue, and Cicero Avenue, which are all Strategic Regional Arterials (SRA's). As part of the SRA network, these roadways are being individually studied and evaluated to carry future traffic volumes and support the existing expressway system. A Desirable cross section for an urban SRA has four through lanes (at 12' each), a sidewalk at twelve feet wide, a median of 0 to 14 feet, and two twelve foot lanes for high occupancy vehicles (possible when right of way is 96' - 110').

RIGHT OF WAY

North Avenue has a right-of-way (ROW) width of 110 feet from Cicero Avenue to Western Avenue. The ROW drops to 66 feet wide from Western Avenue to Orchard Street and from Orchard Street to LaSalle Street ROW width is 100 feet. From LaSalle Street to Lake Shore Drive North Avenue becomes a boulevard which ends in a cul-de-sac and a pedestrian subway to the North Avenue beach. IL 64 continues north from North Avenue to Clark Street and onto LaSalle Drive. IL 64 has a ROW width of 108 feet between LaSalle Street and Lake Shore Drive.

The pre-draft report of Illinois Route 64 (North Avenue), prepared by Harland Bartholomew and Associates, recommends that roadway improvements be accomplished within the existing right-of-way. The report does not recommend that additional ROW be acquired except at the intersection of North Avenue and Cicero Avenue, where an eastbound right-turn lane is proposed (See Detail 8 attached).

TRANSIT SERVICE PLANS

Summary of Transit Service in the North Avenue Corridor

The North Avenue corridor provides a variety of transit opportunities within the 6 1/4 mile area. Already existing in the area include CTA rapid transit facilities, Metra heavy rail service, as well as numerous CTA bus routes. The NIPC/CATS 2010 Transportation System Development Plan has also identified a new transit facility, the Cicero Avenue O'Hare/Ryan Interline Connector, as a priority project. None of the Corridors of the Future identified in the plan will directly impact the North Avenue study area. New bus stops have been recommended at all major intersections by Harland Bartholomew in their North Avenue SRA Design Report.

CTA Service

Three of the CTA's rapid transit train lines service the corridor. The Howard line runs predominantly north/south from the Loop to Howard Street in the Rogers Park neighborhood. This same line extends throughout Evanston, providing express service to the adjacent suburb. A subway station at North Avenue and Clybourn Street provides ridership access at the eastern end of the area. The station is identified as an "A" stop only. The system of alternating stops allows for more efficient, faster service, as only those trains identified as "A" trains make this stop.

Two blocks to the east of the North/Clybourn Street station is the Sedgwick station on the Ravenswood line. This line provides service south into the Loop and northwest to Lawrence and Kimball. This elevated stop acts as a "B" station and only alternating trains service the station.

Both the Howard and the Ravenswood Lines provide access to the north and near northwest sides of the city, as well as the Loop, for those in the eastern portion of the North Avenue study corridor. Access to the south side of the city is also possible from these two stations as both lines connect with southbound trains in the Loop.

Ridership levels on both of these lines at the two stations in the North Avenue study corridor have been reported as follows:

Table III-4

RIDERSHIP ON HOWARD AND RAVENSWOOD CTA LINES

	1990 Ridership per Year	1989 Average Weekday
Ravenswood	294,000	1500
Howard	906,000	1600

A CTA train station also serves the North Avenue study area further west at North, Damen and Milwaukee Avenue. The elevated Damen Street station on the O'Hare Line is an "AB" station, thus all trains stop here. The O'Hare line travels northwest to the airport and serves the far northwest neighborhoods of the city. Southbound, it travels as a subway through the Loop and connects to lines servicing the west side of the City.

Ridership levels for the Damen Street station are as follows:

1990 Annual Ridership	403,000 passengers
1989 Average Weekday	3,250 passengers

CTA buses also service the North Avenue study corridor. Route #72 travels along North Avenue as far east as Clark Street. There are bus stops on North Avenue at every cross street. New bus stops at all major intersections have been recommended by Harland Bartholomew in their North Avenue SRA Design Concept Report. Numerous cross streets also carry bus routes including Route 54 on Cicero, Route 53 on Pulaski, Route 82 on Homan/Kimball, Route 52 on California, Route 49 on Western, Route 50 on Damen, Route 9 on Paulina, Route 8 on Halsted and Route 37 on Sedgwick.

Metra Service

Three Metra commuter trains service the North Avenue corridor. A station at Clybourn Street and Armitage serves two Chicago and Northwestern routes. The North line which travels along the lakefront to Kenosha, Wisconsin and the Northwest line to Harvard, both share the Clybourn Street station. The western edge of the study area is also serviced by Metra commuter trains at the Hermosa station on the Milwaukee West line. This station is just north of North Avenue at Hermosa Street and serves as a rush hour stop only.

In 1986, Metra conducted a survey of license plates in the commuter station parking lots. The survey indicated that approximately 90% of the C&NW riders (on both the North and Northwest lines) travelled from residences within a 7 mile area surrounding the station. The remaining plates identified commuters from as far as 10 miles south of the Clybourn Street station. Of the 29 plates surveyed at the Hermosa station, over 50% were registered to residences within 2 miles of the station. The remaining plates identified commuters from between 3 and 10 miles of the station.

2010 Plan Priority Project

The 2010 Transportation System Development Plan has identified a potential rapid transit facility, known as the Cicero Avenue O'Hare/Ryan Interline Connector, which would serve as a 22 mile inner circumferential line between the O'Hare rapid transit line and the Dan Ryan transit line. This line would connect at either the Jefferson Park station or the Montrose station on the O'Hare line and at the 87th Street station on the Ryan line. Throughout the North Avenue study corridor, this new line would travel parallel to and east of Cicero Avenue.

Recommendations

The SRA Design Concept Report has identified various forms of transit which can be complementary to the efficient functioning of the SRA system. Of these transit facilities, the incorporation of a light rail system is mentioned. Currently, the City of Chicago is studying the feasibility of a light rail transit system throughout the greater downtown area known as the "Central Area Circulator". Although current plans have not identified the North Avenue study area as a priority corridor, perhaps consideration should be given to eventual expansion into this study area, particularly the eastern portion.

TRANSIT ACCESSIBLE DESIGN CONSIDERATIONS

The North Avenue study corridor provides a variety of transit opportunities including rapid transit, commuter rail service and numerous bus routes. However, the station areas of these transit facilities must be properly designed so as to promote maximum accessibility and a high level of usage. Design features such as kiss-and-ride areas, loading zones, bicycle parking/storage, continuous bicycle routes and sidewalks leading to the station, high densities and a mix of land uses all promote the use of transit services.

Metra Rail Stations

The Clybourn Street station acts predominantly as a destination point. A CTA express bus from the station to North Michigan Avenue is available for commuters during the a.m. and p.m. rush hours, which essentially provides shuttle-like service to employment centers and shopping on and near North Michigan Avenue. Already existing is a system of continuous access routes for both pedestrians and bicyclists. A comprehensive system of connecting sidewalks is common throughout the City of Chicago, as it is in the North Avenue study corridor. A 10 ft. sidewalk on North Avenue exists from Cicero to Western, where at Western the sidewalk narrows to 9 ft. for the length of the SRA (to Lake Shore Drive).

Densities are high in the area surrounding the Clybourn Station. Land uses include industrial, commercial, institutional (medical, school, etc.) and even some office. Land behind the commercial/office frontage of North Avenue is primarily residential. The high densities and mixed uses strengthen the vitality of the Metra service as well as the other transit service in the area.

The Hermosa station of the Milwaukee West line, located on the western edge of the study area serves outbound commuters. The Hermosa station is predominantly an origin and functions as most suburban stations do. The highly residential population surrounding the Hermosa station

makes use of the Milwaukee line as a means to either downtown Chicago or somewhere else (northwest) on the line. The design of this station should reflect the needs of the riders. Sufficient parking (both for automobiles and bicycles) should be available at the station, thus encouraging riders to make use of the transit service. Kiss-and-ride areas, loading zones and bus paths are also important at this station. The grid pattern of the street network successfully allows for the residential areas to easily access the station from all sides. The new commercial shopping center which has been proposed at North and Cicero (just west of the station) will provide commuters with retail opportunities in the vicinity and further enhance the viability of the station.

CTA Stations and Stops

Bus stops throughout the North Avenue study corridor are well-marked and easy to identify. The comprehensive system of buses throughout the City of Chicago provides frequent and extensive coverage of the North Avenue study area. Amenities at bus stops such as shelters further enhance the vitality of the service. Bus shelters for the Route #72 bus along North Avenue exist in these locations: North & Kostner, North & Humboldt and North & California. A bus turnaround, which according to Pace's Development Guidelines, can improve schedule adherence and service reliability and often provides a safe, off-street waiting and service area for transit users, has been recommended for area buses. The Circulation, Transportation and Parking Task Force working to enhance the Lincoln Park area, has proposed and designed such a turnaround to achieve these objectives.

The turnaround at North Avenue beach will provide buses with the ability to turn with ease and will also serve as a drop-off zone for cars trying to access the beach. Most of the existing parking, where the CTA turnaround is proposed, will be eliminated. The 15 spaces which will remain will serve park employees and the handicapped.

The design of CTA rapid transit stations must also be considered to promote maximum use of the transit services. The Howard stop, at North and Clybourn, is a subway station and must therefore be well marked at street level. Directional signs will allow the rider to easily find the entrance and exit to the station.

The stations on the Ravenswood line and the O'Hare line are elevated and therefore can be more easily seen by the passenger looking for the station. However, their access must be enhanced in similar ways so as to provide a user-friendly service. The Damen Station on the O'Hare line is set back from the three way intersection of North, Damen and Milwaukee. A building owner in the area noted the need to improve access to this station in order to promote a greater level of use. More signs announcing the station and directional signage is necessary. Maps of the entire rapid transit system should be displayed throughout the station to provide the rider with the knowledge of where the line is travelling to and how to get to an individual destination. Making the stations easy to use encourages riders to travel on the trains rather than on the arterial roadway, in private automobiles.

Because of the comprehensive network of buses in the area, the connection from rapid transit trains to buses is relatively simple from any of the stations. Bus stops appear at virtually all major intersections along North Avenue so switching from train to bus can be done with ease.

C. PRELIMINARY RECOMMENDATIONS FOR THE NORTH AVENUE CORRIDOR (Cicero Avenue to Lake Shore Drive)

This portion of the study contains a list of local development actions designed to promote compatibility between future land uses and transportation functions within the corridor. Composite land use plans and the transportation analysis along North Avenue were used to identify areas of conflict and to subsequently recommend strategies that could be implemented by the City of Chicago and by the Illinois Department of Transportation.

LIST OF LOCAL DEVELOPMENT ACTIONS

Primary Objective: Traffic circulation and land use development along the entire North Avenue corridor should be planned to accommodate multiple modes of travel.

Cicero Avenue to Kostner

Identified by the City of Chicago as part of the Northwest Corridor of Industrial Opportunity, this corridor is targeted for industrial growth. A priority exists to ensure adequate circulation to accommodate growth in manufacturing and industrial jobs. The increased traffic from employee auto trips, employee bike/pedestrian trips, and truck traffic should be anticipated.

Pedestrian Access: The Hermosa Station on Metra's Milwaukee West Line is located within the Northwest Corridor. Adequate access, particularly for pedestrians should be ensured from the station to any existing or proposed places of employment. Planned developments in this area include a proposed shopping center at North and Cicero.

Internal & External Traffic Circulation: The area is growing into a center rich in a variety of land uses and adequate accommodations should be made to ensure connectivity among the various land uses (i.e. retail centers, employment centers, transit stations).

Demand Management: Brach's Candy is located within close proximity to the corridor and has been a participant in a demonstration project to produce compliance plans which reduce the number of single occupant vehicles driven to the worksite. Brach's and other local employers in the corridor should be encouraged to develop a corridor-wide demand management plan.

Kostner to Ashland

Bicycle Access: It is recommended that an alternative bicycle route be designated for east/west travel along North Avenue. The established grid pattern and system of interconnecting streets provides an ideal opportunity for cyclists to use a less-congested, slower travelling roadway, without causing unnecessary increases in travel time or distance. Bicyclists should be routed onto Wabansia Street which is located 1/8 mile

north of North Avenue. Wabansia is residential in nature and posted speeds for auto traffic are 30 mph, as opposed to the more congested, faster moving travel found on North Avenue. Wabansia provides access to destinations on North Avenue at virtually every block. Bicyclists can easily access trails in Humboldt Park by using Kedzie Parkway.

North/Milwaukee/Damen

The three-way intersection of North/Milwaukee/Damen and its surrounding area has been identified as a potential site for a Diversified Regional Center (DRC) in NIPC's *Strategic Plan for Land Resource Management.* A Diversified Regional Center is defined as a large-scale area of concentrated development which helps to mitigate regional traffic congestion by providing a diverse mix of mutually supportive land uses and providing a variety of transportation options. DRC's are characterized by well developed internal transportation systems which encourage pedestrian, bicycle, and public transportation use; serving as regional public transportation hubs; increasing residential options in proximity to suburban employment; helping to conserve energy and reduce air pollution; and improving the economic development potential of the region as a whole.

It is recommended that the following design guidelines be established to encourage the area's development into a viable DRC:

Streetscape Improvements: Enhance the "Sense of Place" within this neighborhood community by providing plantings and landscaping, maintaining the condition of sidewalks, providing benches and adequate lighting.

Pedestrian Access: Improved circulation patterns to, from, and around the CTA station should be a priority. The CTA station platform should be extended to include an overhead pedestrian walkway to the outbound platform. Pedestrian circulation along the corridor should be improved by maintaining sidewalk upkeep and providing benches.

Parking Restrictions: Consider restricting on-street parking during peak hours. Provide additional parking opportunities by demolishing buildings at 2033 W. North, 2017 W. North, and 1626 N. Milwaukee Avenue.

Bicycle Parking: Provide secure bicycle parking facilities along North Avenue, Milwaukee Avenue and Damen, and especially at the CTA station location.

Joint Development Opportunities: Upgrade the CTA station area by seeking joint CTA and community cooperation to demolish the building at 2017 W. North which lies partly beneath the tracks; rehabilitate the building south of the station (including Busy Bee restaurant at 1546 N. Damen) into a transit center with a new station entrance and retail facilities; develop a second station entrance on the site with a North Avenue focus; and utilize the area beneath the tracks for controlled parking spaces.

Sheffield to Halsted

A commercial district is emerging in this area and strip developments are common. The area should be classified as a Transitional Pedestrian/Automobile Oriented District. The following characteristics were identified which contribute to the area's classification: variations in r.o.w. width (from 66 feet to 108 feet), frequent interruptions of the street wall by parking lots and building setbacks, a mix of older buildings facing the r.o.w and newer buildings oriented toward the parking lot, and the high traffic volumes in the area. A series of land use policy recommendations should serve to guide future development in this district, including:

1. 1st Floor Commercial: providing ground floor retail to accommodate both pedestrians and drivers.

2. Minimize Building Setbacks

3. Pedestrian Friendly Site Design: orient entryways for convenient access from the sidewalk, design parking lots so as not to eliminate/interrupt the existing sidewalk system.

4. Access Management: limit curb cuts. Adequate access is provided by frequent cross street, additional access to new developments should be provided from connecting cross streets.

Ashland to Lake Shore Drive

Bicycle Access: Because of the number of destinations for bicyclists in the eastern portion of the corridor, adequate attention should be placed on the maintenance and improvement of bicycles compatibility along the roadway. Lincoln Park, North Avenue beach, as well as numerous cultural attractions invite bicyclists and pedestrians in large numbers. A survey of bicycle compatibility completed by the Chicagoland Bicycle Federation along the roadway for the bicyclist. These recommendations include: narrowing of the inner lane and widening of the outer lane, limiting or eliminating on-street parking,resurfacing pavement on bridges, studying alternative crossings for bicycles and installing caution signs at bridges. 1991 accident data reported bicycling accidents in this district at Fremont and at Halsted. Implementing the recommended improvements would increase the compatibility for bicyclists travelling along North Avenue.

LaSalle to Lake Shore Drive

Recommendations contained in the Lincoln Park Master Plan should be considered as potential actions.

Transit Access - CTA Bus Turnaround at LaSalle Drive to improve bus access and circulation in the area. The concept of a bus turnaround is supported in Pace's "Development Guidelines". The Guidelines state that turnarounds can improve schedule adherence and service reliability, and often provide safe, off-street waiting and service

areas for transit users. Relocation of a bike path away from the North Avenue beach house to connect to new bike path at Passerelle Bridge.

Parking Restrictions: Reconfigure parking to provide parking for disabled and beach house staff only, remove access from parking lot to Lake Shore Drive to minimize conflicts. A "gateway" to the park is proposed by removing all parking from the Stockton Street entrance to LaSalle. The gateway concept will include the construction of 400-car parking structure at LaSalle, Clark and Stockton. The parking within the structure will be concealed and the structure will be sensitively integrated into the landscape.

General Recommendations

Transit Access: The North Avenue corridor is rich in transit opportunities. In order to maximize their accessibility, increase their usage, and alleviate automobile traffic on the already crowded roadway, a number of policies should be considered in the design of the corridor. Design features at transit stations such as kiss-and-ride areas, loading zones, bicycle parking/storage, continuous bicycle route and sidewalks leading to stations should be encouraged, as they all promote the use of transit services. In addition, all stations should be adequately marked to maximize use.

Mixed Land Use: Land use policies which promote higher densities and a mix of uses should be promoted to encourage use of multiple modes of travel.

APPENDICES

APPENDIX I-A

TABLE 1 - LAND USES WITHIN ILLINOIS ROUTE 59 CORRIDOR

LAND USE	EXISTING ACRES	PERCENT OF TOTAL	PLANNED ACRES	PERCENT OF TOTAL
OPEN SPACE/VACANT	17,125	67.8 %	3,070	13.1 %
RESIDENTIAL	5,254	20.8 %	13,029	55.6 %
EMPLOYMENT	2,891	11.4 %	7,323	31.3 %
TOTAL	25,270	100.0 %	23,422	100.0 %

LAND USES WITHIN NORTHERN PORTION OF ILLINOIS ROUTE 59 CORRIDOR
(Wilson Road to 103rd Street)

TABLE 2 - CHANGES IN OPEN SPACE/VACANT LAND

OPEN SPACE/VACANT:	EXISTING	PLANNED	CHANGE IN ACREAGE	CHANGE IN %
Agricultural	5851	0	- 5851	- 100%
Vacant	332	0	- 332	- 100%
Vacant (under development)	758	0	- 758	- 100%
Golf Course	617	481	- 136	- 22%
Other Open Space	35	39	+ 4	+ 11%
School Playground	0	8	+ 8	+ 100%
Public Park	11	149	+ 138	+1250%
Forest Preserve	531	566	+ 35	+ 6.5%
Wetlands	10	0	- 10	- 100%
TOTAL	8145	1243	- 6902	- 85%

TABLE 3 - CHANGES IN RESIDENTIAL LAND

RESIDENTIAL:	EXISTING	PLANNED	CHANGE IN ACREAGE	CHANGE IN %
Farmhouse	191	0	- 191	- 100%
Single Family (0.1-1.0 DU/ACRE)	803	622	- 181	- 23%
Single Family (1.1-4.0 DU/ACRE)	1647	3999	+ 2352	+ 143%
Single Family (4.1-10 DU/ACRE)	183	532	+ 349	+ 190%
Townhouse/Duplex (0.1-1.0 DU/ACRE)	0	0	0	0
Townhouse/Duplex (1.1-4 DU/ACRE)	166	0	- 166	- 100%
Townhouse/Duplex (4.1-10 DU/ACRE)	35	0	- 35	- 100%
Multi-family (1.1-4 DU/ACRE)	24	0	- 24	- 100%
Multi-family (4.1-10 DU/ACRE)	135	0	- 135	- 100%
Multi-family (10.1 + DU/ACRE)	39	506	+ 467	+1197%
TOTAL	3223	5659	+ 2436	+ 76%

TABLE 4 - CHANGES IN EMPLOYMENT-BASED LAND

EMPLOYMENT-BASED USE:	EXISTING	PLANNED	CHANGE IN ACREAGE	CHANGE IN %
Office	537	2602	+ 2065	+ 385%
Commercial	233	519	+ 286	+ 123%
Shopping Center	275	217	- 58	- 21%
Other Private	52	0	- 52	- 100%
Manufacturing	443	1819	+ 1376	+ 311%
Industrial/Research Pk	363	437	+ 74	+ 20%
Warehouse	57	0	- 57	- 100%
TCU (Transportation/ Communications/Utility)	48	0	- 48	- 100%
Institutional	92	120	+ 28	+ 30%
TOTAL	2100	5714	+ 3614	+ 172%

LAND USES WITHIN SOUTHERN PORTION OF ILLINOIS ROUTE 59 CORRIDOR

TABLE 5 - CHANGES IN OPEN SPACE/VACANT LAND

OPEN SPACE/VACANT:	EXISTING	PLANNED	CHANGE IN ACREAGE	CHANGE IN %
Agricultural	7983	461	- 7522	- 94%
Vacant	161	0	- 161	- 100%
Vacant (under development)	79	0	- 79	- 100%
Forested (undeveloped)	261	0	- 261	- 100%
Golf Course	268	434	+ 166	+ 62%
Other Open Space	130	896	+ 766	+ 6%
School Playground	25	9	- 16	- 64%
Public Park	16	27	+ 11	+ 69%
Horsetrack	57	0	- 57	- 100%
TOTAL	8980	1827	- 7153	- 80%

TABLE 6 - CHANGES IN RESIDENTIAL LAND

RESIDENTIAL:	EXISTING	PLANNED	CHANGE IN ACREAGE	CHANGE IN %
Farmhouse	265	0	- 265	- 100%
Single Family (0.1-1.0 DU/ACRE)	347	1380	+ 1033	+ 298%
Single Family (1.1-4.0 DU/ACRE)	1366	5770	+ 4404	+ 322%
Single Family (4.1-10 DU/ACRE)	9	0	- 9	- 100%
Townhouse/Duplex (0.1-1.0 DU/ACRE)	0	0	0	0%
Townhouse/Duplex (1.1-4 DU/ACRE)	6	0	- 6	- 100%
Townhouse/Duplex (4.1-10 DU/ACRE)	2	0	- 2	- 100%
Multi-family (1.1-4 DU/ACRE)	0	0	0	0%
Multi-family (4.1-10 DU/ACRE)	36	0	- 36	- 100%
Multi-family (10.1 + DU/ACRE)	0	220	+ 220	+ 100%
TOTAL	2031	7370	+ 5339	+ 263%

TABLE 7 - CHANGES IN EMPLOYMENT-BASED LAND

EMPLOYMENT-BASED USE:	EXISTING	PLANNED	CHANGE IN ACREAGE	CHANGE IN %
Office	12	28	+ 16	+ 133%
Commercial	89	180	+ 91	+ 102%
Shopping Center	18	0	- 18	- 100%
Other Private	60	0	- 60	- 100%
Manufacturing	423	1246	+ 823	+ 195%
Industrial/Research Pk	5	0	- 5	- 100%
Warehouse	38	0	- 38	- 100%
TCU (Transportation/ Communications/Utility)	73	0	- 73	- 100%
Institutional	73	154	+ 81	+ 122%
TOTAL	791	1609	818	+ 103%

APPENDIX I-B

There are over 300 access points and driveways over the 20 mile stretch of the IL 59 corridor. Based on high traffic volumes (average 21,850 adt for corridor) and an average number of access points of 17.5/mile, the techniques listed below may be applicable for managing access to individual properties along IL 59 and should be considered for implementation. This list was reviewed by the Illinois Department of Transportation and by the communities within the corridor. Comments regarding the feasibility and political acceptability of particular strategies are included in parenthesis.

The Illinois Department of Transportation promotes the limiting of full access points on IL 59 to 1/2 mile locations, and permits 1/4 mile access points where appropriate. Warrenville, Naperville, Aurora and Plainfield are in agreement with the need to coordinate access along the roadway and to establish a process to address future access requirements. With regard to full access, communities recognize that it is less desirable to have more access closer to major intersections (due to potential traffic conflicts) and are supportive of limiting full access to regular intervals along IL 59.

A 11 Locate driveway opposite a three leg intersection or driveway and install traffic signals where warranted

A 14 Install two one-way driveways in lieu of two two-way driveways

A 15 Install two two-way driveways with limited turns in lieu of two standard two-way driveways

A 18 Install channelizing island to prevent right-turn deceleration lane vehicles from returning to the through lanes (IDOT discourages this technique)

A 19 Install channelizing island to control the merge area of right-turn egress vehicles (IDOT discourages this technique)

A 20 Regulate the maximum width of driveways

B 2 Regulate minimum corner clearance

B 3 Regulate minimum property clearance

B 5 Regulate maximum number of driveways per property frontage

B 6 Consolidate access for adjacent properties

B 7 Require highway damages for extra driveways

B 8 Buy abutting properties

B 9 Deny access to small frontage (IDOT discourages this technique)

B 10 Consolidate existing access whenever separate parcels are assembled under one purpose, plan, entity, or usage

B 11 Designate the number of driveways regardless of future subdivision of that property

B 12 Require access on collector street when available in lieu of additional driveway on highway (Though communities are in support of this recommendation where possible, enforcement of this policy is needed during the review of site design proposals. If full access is limited to 1/2 mile locations along IL 59, communities recognize that developer support may be needed to build partial collector roads.).

C 2 Restrict parking on the roadway next to driveways to increase driveway turning speeds

C 3 Install visual cues of the driveway

C 4 Improve driveway sight distance

C 5 Regulate minimum sight distance

C 6 Optimize sight distance in the permit authorization stage

C 7 Increase the effective approach width of the driveway (horizontal geometries)

C 8 Improve the vertical geometries of the driveway

C 9 Require driveway paving

C 10 Regulate driveway construction and maintenance

C 11 Install right-turn acceleration lane (City of Aurora staff raise concern regarding this technique and recommend deceleration lanes as more appropriate for this corridor).

C 12 Install channelizing islands to prevent driveway vehicles from backing onto the highway

C 14 Move sidewalk-driveway crossing laterally away from highway

D 16 Install right-turn deceleration lane

D 17 Install additional exit lane on driveway

D 18 Encourage connections between adjacent properties (From the

municipal perspective, cross access easements between adjacent properties are favorable.)

D 19 Require two-way driveway operation where internal circulation is not available

D 20 Require adequate internal design and circulation plan

If IL 59 were to become a divided roadway, the following techniques might also be applicable to manage access:

A 6 Widening right through lane to limit right-turn encroachment onto the adjacent lane to the left

A 7 Installing channelizing islands to prevent left-turn deceleration lane vehicles from returning to the through lanes

A 9 installing median channelization to control the merge of left-turn egress vehicles

A 12 Install two one-way driveways in lieu of one two-way driveway

A 13 Install two two-way driveways with limited turns in lieu of one standard two-way driveway

D 5 Install left-turn deceleration lane in lieu of right-angel crossover

D 6 Install median storage for left-turn egress vehicles

D 7 Increase storage capacity of existing left-turn deceleration lane

D 8 Increase the turning speed of right-angle median crossovers by increasing the effective approach width

D 14 Install supplementary access on collector street when available

APPENDIX II-A

TABLE 1 - LAND USES WITHIN US 30 (LINCOLN HIGHWAY) CORRIDOR

LAND USE	EXISTING ACRES	PERCENT OF TOTAL	PLANNED ACRES	PERCENT OF TOTAL
OPEN SPACE/VACANT	1,722	39.4 %	693	15.7 %
RESIDENTIAL	1,852	42.3 %	2,314	52.4 %
EMPLOYMENT	801	18.3 %	1,407	31.9 %
TOTAL	4,375	100.0 %	4,414	100.0 %

DETAILED LAND USES WITHIN US 30 (LINCOLN HIGHWAY) CORRIDOR
(I-57 to Western Avenue)

TABLE 2 - CHANGES IN OPEN SPACE/VACANT LAND

OPEN SPACE/VACANT:	EXISTING	PLANNED	CHANGE IN ACREAGE	CHANGE IN %
Agricultural	430	0	- 430	- 100%
Vacant	234	0	- 234	- 100%
Vacant (under development)	374	0	- 374	- 100%
Golf Course	291	435	+ 144	+ 49%
Other Open Space	32	188	+ 156	+ 488%
School Playground	98	2	- 96	- 98%
Public Park	105	68	- 37	- 35%
Forest Preserve	0	0	0	0
Wetlands	14	0	- 14	- 100%
Forested (undeveloped)	144	0	- 144	- 100%
TOTAL	1722	693	- 1029	- 60%

TABLE 3 - CHANGES IN RESIDENTIAL LAND

RESIDENTIAL:	EXISTING	PLANNED	CHANGE IN ACREAGE	CHANGE IN %
Farmhouse	8	0	- 8	- 100%
Single Family (0.1-1.0 DU/ACRE)	179	244	+ 65	+ 36%
Single Family (1.1-4.0 DU/ACRE)	1006	1610	+ 604	+ 60%
Single Family (4.1-10 DU/ACRE)	659	390	- 269	- 41%
Townhouse/Duplex (0.1-1.0 DU/ACRE)	0	0	0	0
Townhouse/Duplex (1.1-4 DU/ACRE)	0	13	+ 13	+ 100%
Townhouse/Duplex (4.1-10 DU/ACRE)	0	15	+ 15	+ 100%
Multi-family (1.1-4 DU/ACRE)	0	0	0	0
Multi-family (4.1-10 DU/ACRE)	0	42	+ 42	+ 100%
Multi-family (10.1 + DU/ACRE)	0	0	0	0
TOTAL	1852	2314	1066	+ 58%

TABLE 4 - CHANGES IN EMPLOYMENT-BASED LAND

EMPLOYMENT-BASED USE:	EXISTING	PLANNED	CHANGE IN ACREAGE	CHANGE IN %
Office	70	158	+ 88	+ 126%
Mixed Use (Office and Commercial)	0	760	+ 760	+ 100%
Commercial	185	320	+ 135	+ 73%
Shopping Center	187	36	- 151	- 81%
Other Private	39	0	- 39	- 100%
Manufacturing	0	0	0	0
Industrial/Research Pk	0	0	0	0
Warehouse	0	0	0	0
TCU (Transportation/ Communications/Utility)	187	0	- 187	0
Institutional	133	133	0	0
TOTAL	801	1407	+ 606	+ 76%

APPENDIX II-B

Four primary traffic management techniques are recommended by the Federal Highway Administration to control access to arterial roadways and facilitate safe and efficient traffic flows. These four techniques include: (1) Limiting the number of conflict points along a roadway (limiting or preventing certain kinds of maneuvers), (2) Separating basic conflict areas (reducing the number of driveways or directly increasing the spacing between driveways or intersections), (3) Providing for deceleration requirements (increasing driveway turning speeds, decreasing through highway speeds, or increasing driver perception time), and (4) Removing turning vehicles from the through lanes (providing separate paths and storage areas for turning vehicles).

For corridors such as U.S. Route 30, which have an average of 30 access points per mile along a multi-lane undivided highway, appropriate access management strategies are listed below. It is recommended that these strategies be considered for implementation along the corridor.

A 11 Locate driveway opposite a three leg intersection or driveway and install traffic signals where warranted

A 14 Install two one-way driveways in lieu of two two-way driveways

A 15 Install two two-way driveways with limited turns in lieu of two standard two-way driveways

A 18 Install channelizing island to prevent right-turn deceleration lane vehicles from returning to the through lanes

A 19 Install channelizing island to control the merge area of right-turn egress vehicles

A 20 Regulate the maximum width of driveways

B 2 Regulate minimum corner clearance

B 3 Regulate minimum property clearance

B 5 Regulate maximum number of driveways per property frontage

B 6 Consolidate access for adjacent properties

B 7 Require highway damages for extra driveways

B 8 Buy abutting properties

B 9 Deny access to small frontage

B 10 Consolidate existing access whenever separate parcels are assembled under one purpose, plan, entity, or usage

B 11 Designate the number of driveways regardless of future subdivision of that property

B 12 Require access on collector street when available in lieu of additional driveway on highway
C 2 Restrict parking on the roadway next to driveways to increase driveway turning speeds

C 3 Install visual cues of the driveway

C 4 Improve driveway sight distance

C 5 Regulate minimum sight distance

C 6 Optimize sight distance in the permit authorization stage

C 7 Increase the effective approach width of the driveway (horizontal geometrics)

C 8 Improve the vertical geometrics of the driveway

C 9 Require driveway paving

C 10 Regulate driveway construction and maintenance

C 11 Install right-turn acceleration lane

C 12 Install channelizing islands to prevent driveway vehicles from backing onto the highway

C 14 Move sidewalk-driveway crossing laterally away from highway

D-4 Install isolated median and deceleration lane to shadow and store left-turning vehicles.

D 16 Install right-turn deceleration lane

D 17 Install additional exit lane on driveway

D 18 Encourage connections between adjacent properties

D 19 Require two-way driveway operation where internal circulation is not available

D 20 Require adequate internal design and circulation plan

APPENDIX III-A

TABLE 1 - LAND USES WITHIN NORTH AVENUE CORRIDOR

LAND USE	TOTAL ACRES	PERCENT OF TOTAL CORRIDOR
OPEN SPACE/VACANT	300.5	9 %
RESIDENTIAL	1931	55 %
EMPLOYMENT	1274	36 %
TOTAL	3505.5	100 %

DETAILED LAND USES WITHIN NORTH AVENUE CORRIDOR
(Cicero Avenue to Lake Shore Drive)

TABLE 2 - DETAILED OPEN SPACE/VACANT LAND

OPEN SPACE/VACANT LAND:	TOTAL ACRES
Public Park	257
School Playground	8
Lincoln Park Zoo	1.5
Vacant (under development)	1
Vacant	33
Total Open Space/Vacant	300.5

TABLE 3 - DETAILED RESIDENTIAL LAND

RESIDENTIAL:	TOTAL ACRES
Townhouse/Duplex (4.1-10 DU/ACRE)	1701
Multi-family (1.1-4 DU/ACRE)	42
Multi-family (4.1-10 DU/ACRE)	188
Total Residential	1931

TABLE 4 - DETAILED EMPLOYMENT-BASED LAND

EMPLOYMENT:	TOTAL ACRES
Office	2
Commercial	145
Shopping Center	25
Mixed Use (Office and Commercial)	364
Other Private	15
Manufacturing	565
Industrial Park	27
Institutional	131
Total Employment	1274

APPENDIX III-B

Four primary traffic management techniques are recommended by the Federal Highway Administration to control access to arterial roadways and facilitate safe and efficient traffic flows. These four techniques include: (1) Limiting the number of conflict points along a roadway (limiting or preventing certain kinds of maneuvers), (2) Separating basic conflict areas (reducing the number of driveways or directly increasing the spacing between driveways or intersections), (3) Providing for deceleration requirements (increasing driveway turning speeds, decreasing through highway speeds, or increasing driver perception time), and (4) Removing turning vehicles from the through lanes (providing separate paths and storage areas for turning vehicles).

For corridors such as North Avenue, which have medium to high levels of development intensity and high roadway volumes along a multi-lane undivided highway, appropriate access management strategies are listed below. It is recommended that these strategies be considered for implementation along the corridor.

A-1 Install median barrier with no direct left-turn access

A-2 Install raised median divider with left-turn deceleration lanes

A-3 Install one-way operations on the highway

A-8 Install physical barrier to prevent uncontrolled access along property frontages

A 11 Locate driveway opposite a three leg intersection or driveway and install traffic signals where warranted

A 12 Install two one-way driveways in lieu of one two-way driveway

A 14 Install two one-way driveways in lieu of two two-way driveways

A 15 Install two two-way driveways with limited turns in lieu of two standard two-way driveways

A 16 Install driveway channelizing island to prevent left-turn maneuvers

A 17 Install driveway channelizing island to prevent driveway encroachment conflicts

A 18 Install channelizing island to prevent right-turn deceleration lane vehicles from returning to the through lanes

A 19 Install channelizing island to control the merge area of right-turn egress vehicles

A 20 Regulate the maximum width of driveways

B 1 Regulate minimum spacing of driveways

B 2 Regulate minimum corner clearance

B 3 Regulate minimum property clearance

B 4 Optimize driveway spacing in the permit authorization stage

B 5 Regulate maximum number of driveways per property frontage

B 6 Consolidate access for adjacent properties

B 7 Require highway damages for extra driveways

B 8 Buy abutting properties

B 9 Deny access to small frontage

B 10 Consolidate existing access whenever separate parcels are assembled under one purpose, plan, entity, or usage

B 11 Designate the number of driveways regardless of future subdivision of that property

B 12 Require access on collector street when available in lieu of additional driveway on highway

C 2 Restrict parking on the roadway next to driveways to increase driveway turning speeds

C 3 Install visual cues of the driveway

C 4 Improve driveway sight distance

C 5 Regulate minimum sight distance

C 6 Optimize sight distance in the permit authorization stage

C 7 Increase the effective approach width of the driveway (horizontal geometries)

C 8 Improve the vertical geometries of the driveway

C 9 Require driveway paving

C 10 Regulate driveway construction and maintenance

C 11 Install right-turn acceleration lane

C 12 Install channelizing islands to prevent driveway vehicles from backing onto the highway

C 13 Install channelizing islands to move ingress merge point laterally away from the highway

C 14 Move sidewalk-driveway crossing laterally away from highway

D-3 Install alternating left-turn lane

D-4 Install isolated median and deceleration lane to shadow and store left-turning vehicles.

D-14 Install supplementary access on collector street when available (noncapacity warrant)

D 16 Install right-turn deceleration lane

D 17 Install additional exit lane on driveway

D 18 Encourage connections between adjacent properties

D 19 Require two-way driveway operation where internal circulation is not available

D 20 Require adequate internal design and circulation plan