

# Forest Green Transit Study Final Summary Report

August 2010

Prepared by:



Prepared for:





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## I – Executive Summary

### A. STUDY BACKGROUND

The City of Lake Forest is experiencing a changing demand for public transportation as a result of congestion, the fluctuating cost of housing, a rise in the cost of gas, increased concern for the environment and the changing demographics of the resident population and work force. The City has received various requests from residents to provide transit services, particularly for youth and senior citizens. In the past ten years, there has been a significant increase in reverse commuting for employees who desire to live in the City of Chicago and work in Lake Forest. Additionally, employees are living farther north in Lake County and Wisconsin and are commuting to their places of employment in Lake Forest.

These factors led Lake Forest to create the Transportation Advisory Committee to investigate transportation issues and recommend solutions. While investigating the issues, the Transportation Advisory Committee determined that identifying the existing unmet public transportation needs was critical. The City applied for and was awarded a Regional Technical Assistance Program (RTAP) grant (now referred to as the Community Planning Program) from the Regional Transportation Authority to conduct the Forest Green Transit Study.

The Forest Green Transit Study was designed to identify the feasibility of transit services within the City of Lake Forest and the immediately adjacent office and commercial locations. The following items were done to accomplish this goal:

- Conduct market research to determine the unmet transportation needs of residents, students, and employees in Lake Forest.
- Recommend transit services that best meet the needs of the transit travel market in Lake Forest.
- Collect feedback on the recommended transit services through an on-line survey.
- Develop an operating plan including operating characteristics, estimated costs, and estimated ridership for the services.
- Identify the next steps for implementation.

The study also looked for opportunities to create partnerships among entities currently providing transportation services to their students, clients, or employees.

Through the study it was learned that there was active interest on the part of Lake Forest residents and other employers in the City for services that would meet the diverse origins and destinations of the local travel market. There was also a high level of interest in some modifications to the business park services, but that there are priority differences between the current providers and funder of the services.

The findings and service recommendations follow.

### B. FINDINGS AND RECOMMENDED SERVICES

#### 1. Data Collection and Evaluation

In order to assess the market for transit in Lake Forest, several pieces of research were initiated. The combined findings of these various pieces of research provide a solid basis to assess the magnitude of local interest in transit and to identify the appropriate type of service to meet the market needs for transit in Lake Forest.

Data was collected from multiple sources to help determine the market for public transportation in Lake Forest and the appropriate type of services to meet these markets. These sources included:

- 2002 Transportation Study conducted by The City of Lake Forest

- Peer community interviews with Greenwich, CT; Cupertino, CA; and Schaumburg, IL to identify best practices of other communities providing transportation services for their residents, students and employees
- Two web-based surveys of employees and residents
- Data from Pace and Metra
- U.S. Census data (2000)
- Stakeholder interviews
- Employer provided data

Using these multiple data sources to determine the market for public transportation services allowed the consultant to successfully assist with the implementation or restructuring of bus service in the region and for several smaller urban cities in the United States. While Northeast Illinois has a fairly developed transit system, the last decade has seen many counties and municipalities being proactive about identifying additional mobility options for their residents and employees. Development patterns have changed, travel markets have changed and mobility options need to change with them. Locally, plans have been developed and implemented in Naperville, Aurora, Schaumburg, Hoffman Estates, DuPage County, and McHenry County. Throughout the country, plans have been developed and implemented in the metropolitan Washington, D.C. area; Boston, MA; Bridgeport, CT; Franklin, TN; and Murfreesboro, TN.

Effective public input allows for better transportation plans to be developed. Two web-based surveys were conducted to involve various parties (residents, students, and employees) in the planning process. These were informal surveys and were not intended to create statistically valid samples. The response to both surveys was large<sup>1</sup> and provided guidance for the development of service options.

The first web-based survey was designed to allow the public to provide information on how they travel within Lake Forest and how / if they would use a public transit system. Six hundred and seventy-five (675) people responded to the survey. Approximately 50% of the responses were from residents and students and the remainder from employees. The second web-based survey was designed to allow the public to provide feedback on the service designs recommended to meet the transit market in Lake Forest identified through data collection (the first survey, Census data, employer data, and stakeholder interviews). Seven hundred and eighty-seven (787) people responded to the second survey. Approximately 40% of the responses were from residents and students and 60% of the responses from employees.

In addition to the survey information, data from the 2000 U.S. Census was mapped and analyzed to assist in market assessment. Population and employment densities are often used as indicators for the need for public transportation. A review of these densities revealed that much of Lake Forest has densities that support demand response type services, rather than traditional fixed route service, because of dispersed and varied origins and destinations of trips. The employment densities in the business park area near the Tri-State Tollway and Route 60 can support fixed route shuttle service from the Metra stations because of the concentration of trips by location and by time.

Interviews were conducted with ten stakeholders representing various Lake Forest institutions. These stakeholders commented that people were required to drive since there is no bus service in Lake Forest. Stakeholders stated there is a need for service to downtown due to a lack of available parking near the Market Square, a need for midday

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<sup>1</sup> The response to both of these surveys was the best response to a web-based survey as part of a Regional Transportation Authority RTAP (Community Planning) Study this consultant has conducted in the Chicago area, including the communities of Schaumburg, St. Charles, Bensenville, and Mt. Prospect. Other studies have received fewer than 100 responses, with only one study receiving as many as 200 responses.

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service for seniors, a need to allow junior high and high school students the ability to access events, and need to connect the train stations to the employers outside of business parks near the Tri-State Tollway and Route 60.

Many of the larger employees in Lake Forest were asked to provide the ZIP code of their employees' home address. This data was mapped using Geographic Software Information (GIS). Employees located in Conway Park typically live northwest of Lake Forest and in the City of Chicago. Employees of other employers located in Lake Forest typically live in Lake Forest or to the north.

## 2. Existing Transit Services

Prior to this study, the City has taken action to meet the transportation needs of its residents and employees:

- Dial-A-Ride service (described in Section 3.a.i on Page 4) is available to Lake Forest senior citizens Monday through Friday between the hours of 8:45 a.m. and 4:00 p.m. Service is provided in Lake Forest, Lake Bluff and Knollwood, but exceptions are made on an individual basis.
- The City has a minibus that is used to provide shopping trips for senior citizens to various shopping centers Wednesday through Friday.
- Lake Forest participates in a subsidized taxi program. Residents of Lake Forest, Lake Bluff and Knollwood over the age of 65 who do not drive may obtain coupons, which will reduce the price of a taxi trip by \$3.00. Trips must be made within the Lake Forest High School District.
- The City offers its Green Ride Program to Lake Forest employees. This ridesharing program allows a City vehicle to be parked at one of the Metra Stations overnight. A group of City employees arrive at the train station and then drive the vehicle to where they work. In the afternoon, they drive the vehicle back to the train station.

Lake Forest is well served by Metra with two different lines providing access to downtown Chicago and outer locations. Pace does not currently provide bus service in Lake Forest except for the service they operate for the Transportation Management Association of Lake Cook. With the exception of several employer or activity center based shuttles, there are no transit services that serve general public travel needs in Lake Forest.

Two Metra lines pass through Lake Forest: the Metra Union Pacific North (UP-N) Line and the Metra Milwaukee District North (MD-N) Line. The UP-N Line Station is commonly referred to as the Downtown/Market Square Station, while the MD-N Line Station is commonly referred to as the Telegraph Road Station.

Transportation services to the business parks near the Tri-State Tollway and Route 60 originally began as part of the Shuttle Bug program managed by the Transportation Management Authority of Lake Cook (TMA of Lake Cook). Now, there are two entities facilitating service: Business Park Transportation Committee of Lake Forest and Mettawa (BPTC) and the TMA of Lake Cook. The service provided by the BPTC is funded by the Conway Park Owners Association, while the service provided by the TMA of Lake Cook is funded by the TMA, Pace, and Metra. These funders have different priorities for the service which caused a split in operations in 2008.

The TMA of Lake Cook uses Pace to provide service on Route 625 Lake Forest Shuttle Bug and BPTC uses a private provider to operate their routes that connect the Lake Forest Metra Stations to businesses located adjacent to the Tri-State Tollway. These routes are used by approximately 100 employees each weekday.



In addition to the City, Metra, Pace, and BPTC providing transportation services, several Lake Forest entities also provide transportation services as shown in Table 1.

Table 1: Private Shuttle Providers

Operator	Who Can Ride	Where the Service Operates
Lake Forest College	Students	Route varies by day of week. Destinations include Metra Stations, hospitals, retail stores, entertainment, and Evanston
Lake Forest College	Faculty and Staff	Shuttle to and from the UP-N Metra Station
School District 67 and 115	Faculty	Shuttle from UP-N Metra Station to middle school and high school
Lake Forest Academy	Students	Shuttles from UP-N and MD-N Metra Stations to Lake Forest Academy
Woodlands Academy	Students	Shuttle from UP-N Fort Sheridan Metra Station to Woodlands Academy. Van from MD-N Metra Station
Lake Forest Place	Residents of Lake Forest Place	Shuttle operates from Lake Forest Place to various shopping locations. Schedule varies by day of week

### 3. Transit Markets and Service Recommendations

By combining the many different sources of travel market data (surveys, census data analysis, stakeholders interviews, and employer input) with an assessment of existing services it was apparent that there are two distinct transit markets in Lake Forest.

- Local Lake Forest Travel Market – dispersed origins and destinations, travel times throughout the day.
- Business Park Travel Market – concentrated origins and destinations at peak hours.

#### a. Local Lake Forest Services

The local market is characterized by trips at many times of the day from dispersed origins and destinations. Trip purposes may include employment, shopping, recreation, or social purposes. Lake Forest residents and students indicated when responding to the surveys they would use public transportation one to three days a week, mostly on weekdays.

Dial-A-Ride service was identified as a service that could initially be implemented to meet the needs of the local market. Over time it may be possible to transition to a broader set of services should demand warrant and the interest be there to further evolve the local transit services. The remainder of this section describes Proposed Entry Level Services and Potential Future Services.

#### *i. Proposed Entry Level Services*

Dial-A-Ride service requires that a passenger reserve a trip in advance. A vehicle then arrives at the prearranged time to pick up the passenger. It is a shared ride service where the vehicle may pick up or drop off other passengers as it takes passengers to their destination. It provides curb-to-curb service, which means the passenger is picked up and dropped off at the curb of the address where they are starting their trip and where they are going.

The recommended Dial-A-Ride service would operate in all parts of Lake Forest except the business parks located near the Tri-State Tollway and Route 60. (These business parks are served by existing shuttle service and

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discussed in the next section). The service would operate on weekdays from 6:30a.m. – 8:00p.m. Most passengers would have to call at least an hour in advance to arrange a trip.

This type of service can be used to:

- Bring residents to and from Metra Stations.
- Provide access to downtown retail and dining establishments without having to worry about parking.
- Allow a senior citizen to access medical services at Lake Forest Hospital.
- Provide a trip home for student after completing an after school activity.
- Allow Lake Forest College students to access employment opportunities near Settlers' Square.
- Bring employees from the train stations to their work places.

This service would be the best service for initial implementation because:

- Lake Forest does not contain the household densities that typically contribute to the success of traditional fixed route.
- Residents will not have to walk to a bus stop since the service is curb-to-curb. Since many of the streets in Lake Forest lack sidewalks, residents will likely find curb-to-curb service convenient.
- The level of service can easily be adjusted to meet the level of demand by increasing or decreasing the number of vehicles.
- The cost is lower than other service designs that were explored.
- The passenger's travel time is competitive with automobile travel time. (However, Dial-A-Ride service will not significantly reduce the number of cars on the road.)
- Other communities in Cook and Lake Counties have found Dial-A-Ride service useful in meeting the transportation needs of their community.

Small, accessible, van-like vehicles would be used to provide the Dial-A-Ride service.

#### *ii. Potential Future Services*

The long-term goal of local service should be to move to a regularly scheduled service as ridership grows and these types of services become more sustainable. Public input stated that a scheduled flexible route circulator would be preferred to a service where they would need to reserve a trip in advance. Three types of service are recommended for future implementation should demand warrant and adequate interest be generated:

- A flexible circulator to serve work, shopping, school, and other trip purposes. This is a service where a vehicle follows an established route and timetable, but may travel off route to pick-up or drop-off passengers. The route could operate every 60 minutes on a two-way loop through the City on weekdays from 9:00 a.m. – 8:00 p.m.
- A Dial-A-Ride service for resident trips to Metra stations and local employment trips to locations other than the business park area near the Tri-State Tollway and Route 60. A vehicle would be scheduled to meet train arrivals at each train station in the morning. In the afternoon, passengers would need to call one hour before their train departure to arrange a return trip.
- A regional route operating to the Vernon Hills area on Fridays, Saturdays, and Sundays from 12:00 p.m. – 10:00 p.m. This service would be primarily for Lake Forest College students.

All of these services can be operated using accessible, small, van-like vehicles.

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### iii. *Estimated Costs and Ridership*

For both the Entry Level recommendations and the Potential Future Service recommendations, costs and ridership were estimated. The estimated annual performance of each type of service is described below. It is important to understand that public transportation requires a subsidy to operate<sup>2</sup>. When communities participate financially in subsidizing transit services, it is based on policy considerations of the community that may include deciding the following are important:

- Providing mobility options to residents or employees who cannot or do not want to drive.
- Addressing congestion.
- Improving sustainability of an area of the community by providing access.
- Environmentally friendly

The statistics for the recommended Dial-A-Ride compare favorably to the statistics of Dial-A-Ride services of other communities that have chosen to operate this type of service. In Lake County, the Dial-A-Ride services are only provided by townships for seniors and people with disabilities. It is necessary to look at other communities in McHenry, Cook, and DuPage Counties that fund service that is available to the general public. Five of these services (three in McHenry County, one in Cook County, and one in DuPage County<sup>3</sup>) were reviewed to determine how the recommended Lake Forest service would compare. The population of the communities ranged from 20,000 to 72,000. Annual ridership ranged from 14,000 to 74,000 – typically proportional to population. Trips per capita generated by these services ranged from 0.7 to 1.4 (total annual ridership per person). It is estimated that the Lake Forest service would generate 1.2 to 2.2 trips per capita. The cost per trip ranged from \$10.50 to \$13.20. The cost per trip for the Lake Forest service is estimated range from \$8.80 to \$19.20.

A summary of the Proposed Entry Level Services and Potential Future Services is provided in Tables 2 and 3. The following terms are used in the tables:

**Estimated Total Annual Vehicle Hours** – the estimated total hours during which transit vehicles operate per day multiplied by 255 operating days (365 days minus 52 Saturdays minus 52 Sundays minus the six major holidays per year).

**Estimated Cost per Hour** – estimated cost based on information provided by other communities in Lake and Cook counties, Pace, and consultant experience with similar services. The estimated cost per hour includes drivers' salaries, fuel, maintenance, insurance, and overhead costs. It may vary depending on the service type and the level of dispatch involved.

**Estimated Annual Cost** – the estimated total annual vehicle hours multiplied by estimated cost per hour.

**Estimated Annual Ridership** – two methodologies were used to estimate ridership. The first method examined responses to the "How often would you use this service" question on the second on-line survey. The other method used the average ridership per hour for comparable services. The average ridership for comparable service is estimated through recent experiences with other systems and then multiplied by the number of estimated vehicle hours for the service.

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<sup>2</sup> There is no public transportation in the United States that fully covers all of its operating costs with passenger revenues. In the Chicago region, Metra recovers 55% of its costs, CTA recovers 50% of its costs, and Pace recovers 38% of its costs. This is an average recovery of costs for each of the agencies' services. Some services recover more, while others recover less. Fare revenue for Dial-A-Ride services typically covers less of their expenses when compared to other services (fixed route buses, elevated train, or commuter rail). The passenger fares would only pay for approximately 10.5% to 22.5% of the estimated operating cost of the proposed Dial-A-Ride service.

<sup>3</sup> The communities are Schaumburg, Bensenville, Crystal Lake, Woodstock, and McHenry.

**Estimated Annual Fare Revenue** – the estimated annual ridership multiplied by the fare respondents to the on-line survey stated they would be willing to pay (an average fare of \$1.50 was used to estimate annual fare revenue).

**Estimated Net Annual Cost** – the Estimated Annual Cost less the Estimated Annual Fare Revenue. This is the amount that would need to be covered by subsidy from sources that may include grant funding, partnership funding, and municipal funding.

**Estimated Capital Cost** – the estimated expense to purchase vehicles. This expense would only occur every five to seven years.

**Table 2: Entry Level Service Estimates**

	<b>Entry Level Alternative: Dial-A-Ride</b>
Market	Residents, Students, & Employees (outside of the business parks)
Hours of Service	Weekdays: 6:30a.m. – 8:00p.m.
Vehicles	Two
Estimated Total Annual Vehicle Hours	7,395 hours
Estimated Cost Per Hour	\$55 - \$65
Estimated Annual Ridership	25,000 – 46,000
Estimated Annual Cost	\$405,000 - \$480,000
Estimated Annual Fare Revenue	\$51,000 - \$92,000
Estimated Net Annual Cost	\$313,000 - \$429,000
Estimated Capital Cost	\$100,000 - \$150,000

**Table 3: Potential Future Services Estimates**

	<b>Future Service: Flexible Circulator</b>	<b>Future Service: Dial-A-Ride</b>	<b>Future Service: Regional Route</b>
Market	Residents and Students	Employees (outside of business parks)	Primarily Students
Hours of Service	Weekdays: 9:00a.m. – 8:00p.m.	Weekdays: Morning and Evening Rush	Friday – Sunday: 12:00p.m. – 10:00p.m.
Vehicles	Two	Two	Two
Estimated Total Annual Vehicle Hours	6,120 hours	3,800 hours	3,355 hours
Estimated Cost Per Hour	\$45 - \$65	\$40 - \$60	\$45 - \$65
Estimated Annual Ridership	12,750 – 23,000	14,000 – 23,000	3,900 – 11,700
Estimated Annual Cost	\$275,000 - \$400,000	\$153,000 - \$230,000	\$150,000 - \$220,000
Estimated Annual Fare Revenue	\$19,000 - \$34,500	\$20,000 - \$34,500	\$6,000 - \$17,500
Estimated Net Annual Cost	\$240,500 - \$381,000	\$118,000 - \$210,000	\$132,500 - \$214,000
Estimated Capital Cost	\$100,000 - \$150,000	\$100,000 - \$150,000	\$100,000 - \$150,000

**b. Business Parks**

The largest market of people interested in transit service in Lake Forest is the employees of Conway Park and the adjacent business parks near the Tri-State Tollway and Route 60. A high level of input was received from these employees on the two surveys conducted during this study. These employees:

- Want direct service from their train station to their office park
- Prefer vehicles other than school buses
- Need flexibility to make sure the connection between the train and bus occurs reliably

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Employee shuttles need to meet the very specific needs of employees and provide a reliable, direct service to the employment site. Large vehicles are needed for these services because of the concentration of a large number of trips in a short period of time.

The recommended service that meets the stated needs of these employees is for two routes to operate to and from both of the Metra stations in Lake Forest, using the same number of vehicles that are currently operated. In order to implement this alternate service design, the two current funders of service (Conway Park Owners Association and Transportation Management Association of Lake Cook) would need to operate a consolidated service. Improving the directness and reliability of services to the business parks from the train stations would be instrumental in increasing shuttle ridership which would decrease cars on the roads in the vicinity of the business parks at peak traffic times.

The City may choose to act as a facilitator for these discussions since these services originate from both of the Lake Forest Metra Stations. As the business park shuttle service is primarily funded by the employers or employer groups, service design issues are ultimately controlled by the groups providing the service.

### **C. RECOMMENDED NEXT STEPS**

This report has identified the potential transit market, made recommendations about the type of services that are feasible to implement, and identified a number of other issues that need to be explored and decisions that need to be made prior to initiating operation. Key among these issues is identifying local partnerships and grant funding to defray subsidies.

It is recommended that the City create a Task Force to further investigate in greater detail transit service than the scope of this study called for. This Task Force will take steps to put the pieces in place for funding and starting the service. The Task Force can build on the detail found in the report and can:

- Pursue grant funding
- Establish funding partnerships
- Determine the organizational structure
- Finalize service details

Determining how to sustainably fund the service is an important first-step towards implementation since City funding is unlikely to be available at this time. A primary goal of the Implementation Task Force will be to work out some of the details on partnerships and funding opportunities that will provide a clearer picture of the financial parameters related to implementing service. Some transportation services are currently being provided through various shuttles. These shuttles have a more limited span of service than could be provided if a community wide service were in place. There is a possibility that these providers would be willing to participate financially in a consolidated service so they no longer have to be in the transportation business. The Task Force will need to identify financial partnerships with current providers of services (Lake Forest College, School District 67 and 115, Lake Forest Academy) and other potential beneficiaries of service (Lake Forest Hospital).

There are other sources of grant funding through the Federal government and through the RTA that can be sought to assist in funding these services. The RTA provides an Innovation, Coordination and Enhancement (ICE) grant and the Federal Transportation Authority provides a Job Access/Reverse Commute – New Freedom (JARC/NF) grant that the recommended service would be eligible to compete for. These grants fund 50% of operating and 80% of capital expenses. A local match must be provided for the remaining operating or capital expenses. The Task Force will need to secure commitments for the local match.

An organizational structure must be determined. The City can choose to operate the service in-house and purchase and maintain all the equipment and hire all employees, or they could choose to contract the service out to either a private operator or Pace. The contractor would be responsible for purchasing and maintaining all equipment and providing all employees. While contracting may be less expensive, the City loses direct control of the service. Hybrid

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alternatives between direct operation and full contract operation are possible as well. City ownership of the equipment allows for maximum flexibility in operational structures over time. Neither City operated nor contractor operated organizational structure is inherently better than the other. The Task Force will need to explore each structure in more detail to determine which structure is best for the City.

#### **D. OTHER CONSIDERATIONS**

The link between land use and transit is very important for transit to be successful. Pedestrian friendly development is transit friendly development. There should be sidewalks, direct paths of travel, safe crosswalks, and passenger shelters. The City should also encourage street-oriented buildings with reduced setbacks and parking behind the building.

#### **E. SUMMARY REPORT PREVIEW**

The following chapters of this summary report discuss each of these items in greater detail.

- II – Introduction
- III – Community Profile
- IV – Existing Transportation Services
- V – Market Research
- VI – Lake Forest Services
- VII – Business Park Services
- VIII – Other Infrastructure Elements

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## II – Introduction

### A. PROJECT INITIATION AND NEED

The City of Lake Forest is experiencing a changing demand for public transportation as a result of congestion, the fluctuating cost of housing, a rise in the cost of gas, increased concern for the environment and the changing demographics of the resident population and work force. The City has received various requests from residents to provide transit services, particularly for youth and senior citizens. In the past ten years, there has been a significant increase in reverse commuting for employees who desire to live in the City of Chicago and work in Lake Forest. Additionally, employees are living farther north in Lake County and Wisconsin and are commuting to their places of employment in Lake Forest.

### B. STUDY PROCESS

The need for this study was originally identified in the *City of Lake Forest Transportation Issues, Items, and Proposals – Final Report*. This 2002 document looked at various transportation issues facing Lake Forest. One of the proposals included in the report was to examine the possibility and potential of providing a City of Lake Forest bus service.

To conduct this study, the City applied for and received a Regional Transportation Authority's Regional Technical Assistance Program (RTAP) grant (now referred to as the Community Planning Program). The Forest Green Transit Study was designed to identify the feasibility of transit services within the City of Lake Forest and the immediately adjacent office and commercial locations. The following items were done to accomplish this goal:

- Conduct market research to determine the unmet transportation needs of residents, students, and employees in Lake Forest.
- Recommend transit services that best meet the needs of the transit travel market in Lake Forest.
- Collect feedback on the recommended transit services through an on-line survey.
- Develop an operating plan including operating characteristics, estimated costs, and estimated ridership for the services.
- Identify the next steps for implementation.

The study process was directed by a Transportation Advisory Committee that consists of City staff and representatives from the RTA, Metra, Pace, business community, educational institutions, and civic interests. A Technical Committee comprised of members of the Transportation Advisory Committee was responsible for all decisions related to the study.

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## III – Community Profile

### A. CITY DESCRIPTION

The City was chartered in 1861 after being laid out around Lake Forest College, which was founded in 1857. The City is mostly comprised of single-family, residential homes with small commercial areas located near each railroad station and an office park located on the northwest side of the City.

Single family residential homes compose the majority of the land area in the City, many of which can be considered estates, especially in east Lake Forest. Lake Forest was laid out to provide limited access. This design helps contribute to the rural, small-town feel of Lake Forest. This is especially true of east Lake Forest along the coast of Lake Michigan.

Two commercial areas can be found in Lake Forest and both are near Metra Stations. The central business district contains Market Square, which is located across from the Union Pacific/North Line Metra Station (locally known as the “Market Square/Downtown” station). A variety of retail, banking, and restaurant establishments can be found in Market Square. Since Market Square is located in downtown Lake Forest, it is a very pedestrian oriented area. A Jewel grocery store is located on the northern border of the central business district.

Settlers’ Square is located in west Lake Forest along Waukegan Road near the Milwaukee District/North Line Station (locally known as the “Telegraph Road” station). It also contains restaurants and small retail stores. Unlike Market Square, Settler’s Square is more automobile oriented. The business establishments are separated from the roadway by parking lots.

Conway Park is a large office park located adjacent to the Tri-State Tollway, north of Illinois Route 60. It was designed and developed in the early 1990s and is home to several large corporations including Brunswick, Hospira, Pactiv, PCA, and Tenneco. Approximately 6,000 employees work in Conway Park. There are other office buildings located in the area surrounding Conway Park. Grainger, HSBC, and CDW are located in these buildings.

Appendix A contains additional information on Land Use patterns in Lake Forest.

### B. DEMOGRAPHIC PROFILE

The U.S. Census Bureau estimates the City’s population at 21,127 in 2007. This is an 18.5% increase in population since 1990. The median age of residents is 42.6 years. The community is mainly Caucasian (74.1%), with the second highest category Black or African American (12.4%). Hispanics of any race compose approximately 14.7% of the population. Seventy-four percent of the residents age 25 years and over have a bachelor’s degree or higher.

Data from the U.S. Census 2005-2007 American Community Survey Three-Year Estimate indicates that there are 7,253 total housing units in the City with an average household size of 2.81, which is slightly lower than Lake County’s average household size of 2.95. The majority (85%) are owner-occupied units. The average household income is \$150,670 (in 2007 inflation adjusted dollars). The median value of owner-occupied homes is \$869,200.

Population and employment densities along with other socio-economic characteristics are often used as indicators for the need for public transportation. This type of data from the 2000 U.S. Census was mapped and analyzed. The following describe the market characteristics that typically generate public transportation ridership.

- The *Transit Capacity and Quality of Service Manual* considers 1,920 households per square mile to be the minimum acceptable to support fixed route transit service. (Figure 1)
- The *Transit Capacity and Quality of Service Manual* states 2,560 jobs per square mile will contribute to the success of fixed route transit service. (Figure 2)



- Seniors can often be a good market for transit because as we age, there are more people who cannot or should no longer be driving. (Figure 3)
- Children between the ages of 10 and 18 who are old enough to travel alone, but not yet old enough to drive or do not own a vehicle can also be a good market for transit services, particularly if parents are not available to drive them to activities because of work obligations. (Figure 4)

When reviewing the household and employment density maps, it should be noted that most of Lake Forest does not contain the densities that typically contribute to the success of traditional, fixed-route transit service. The exception is the business parks near the Tri-State Tollway and Route 60.

Figure 1: Households per Acre by Block Group

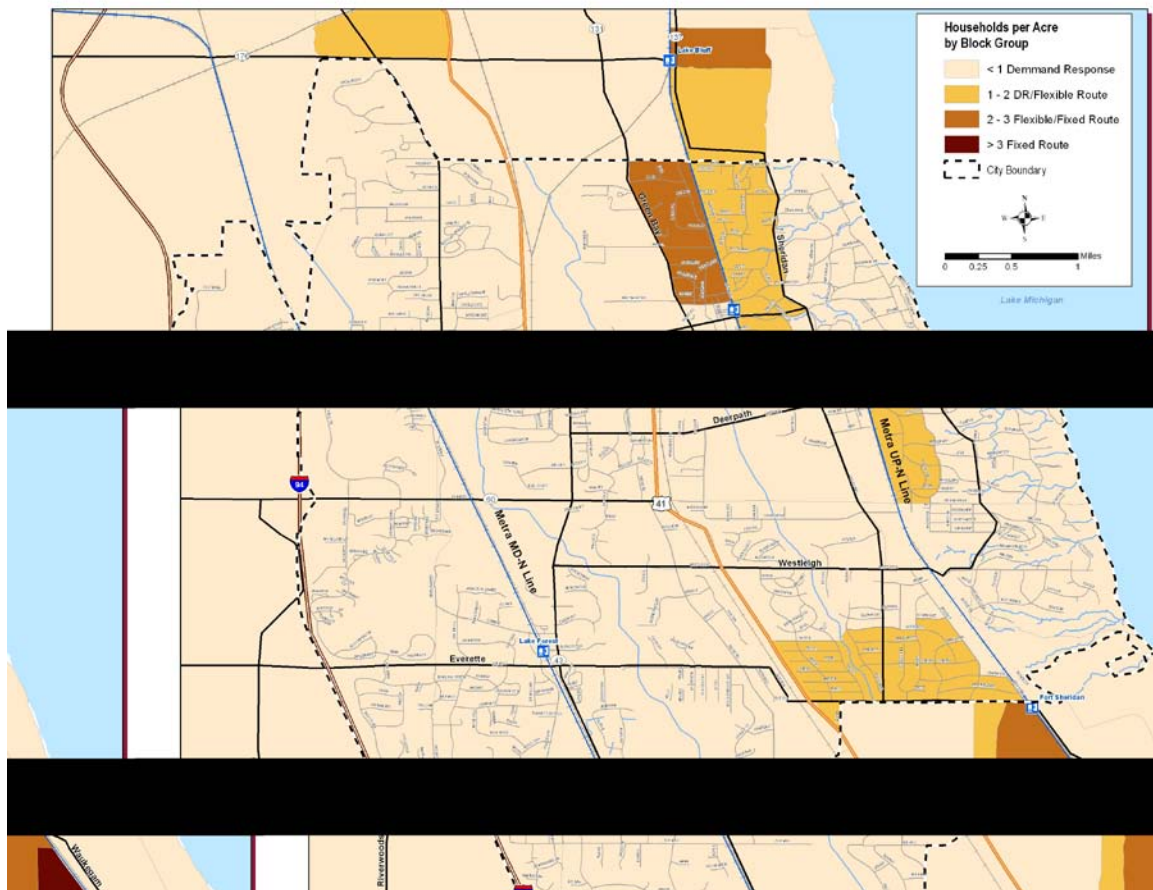


Figure 2: Employment per Square Mile by Block Group

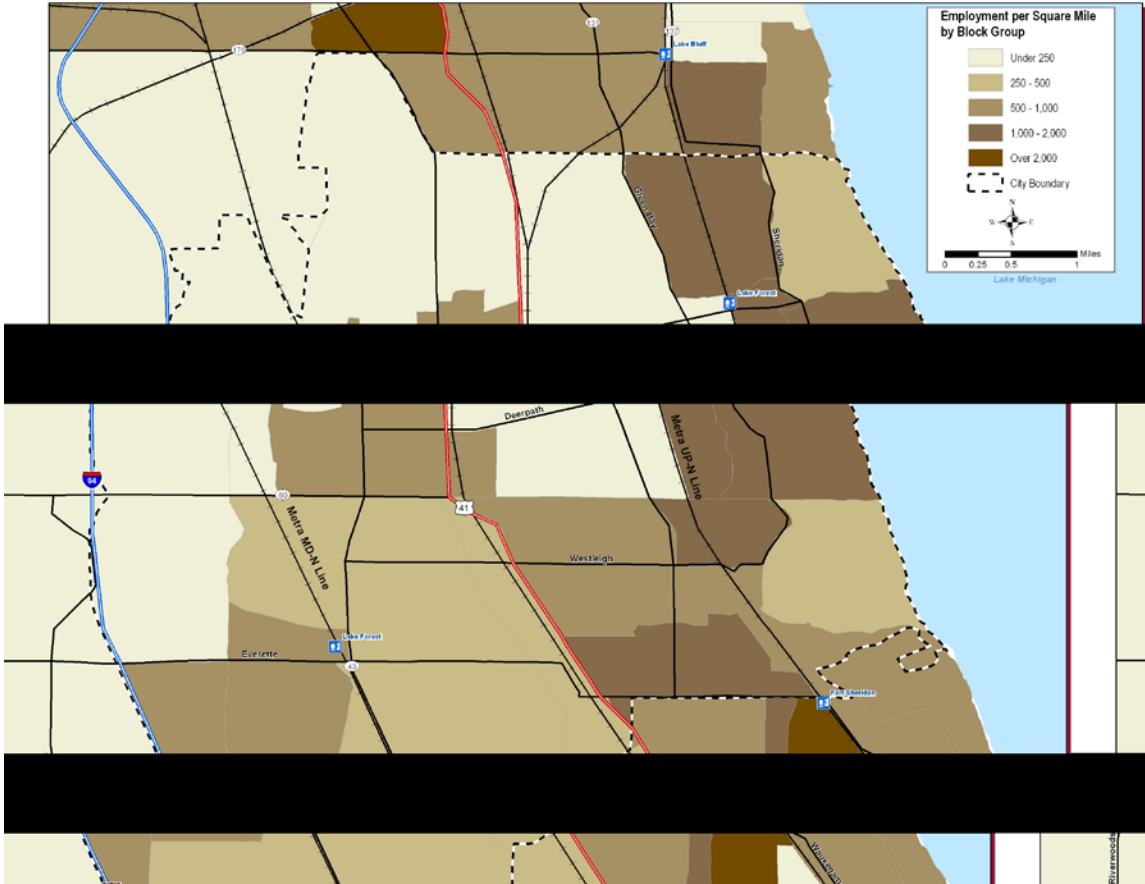


Figure 3: Senior Population (Age 65+) by Block Group

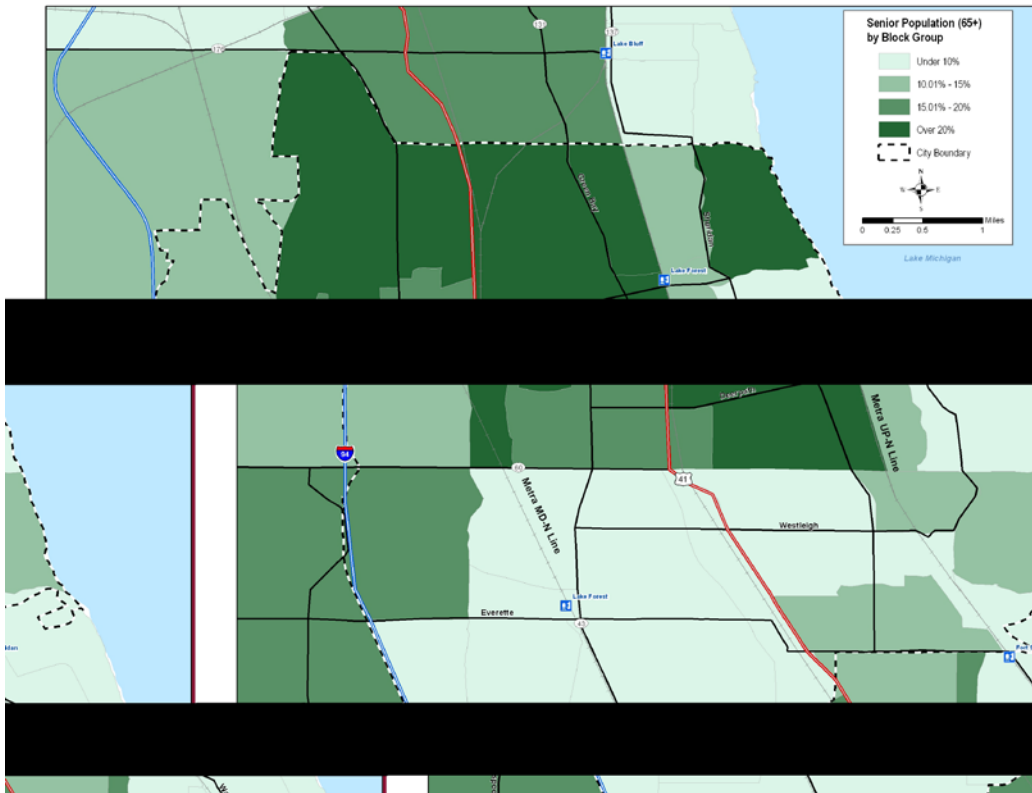
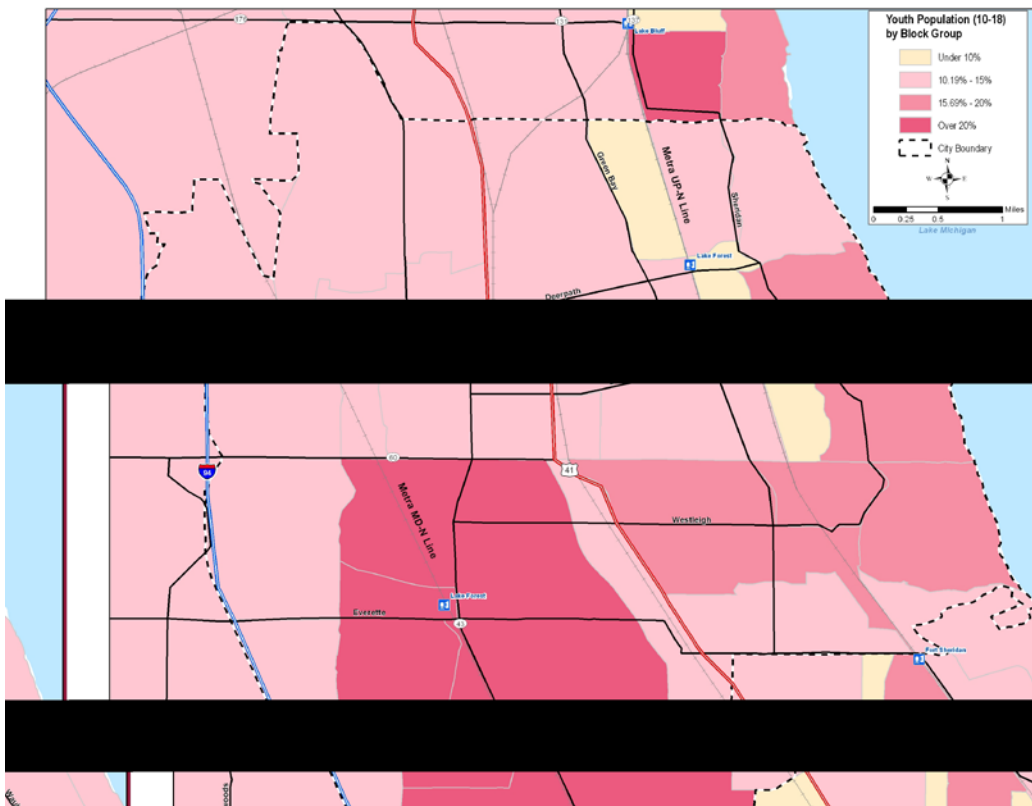


Figure 4: Youth Population (Age 10-18) by Block Group



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### C. PEER COMMUNITIES

Interviews were conducted with three similar communities to learn how public transportation is provided to those communities. The three communities with similar characteristics to Lake Forest were selected by the Technical Subcommittee of the Transportation Advisory Committee and include:

- Greenwich, Connecticut
- Schaumburg, Illinois
- Cupertino, California

One of the important lessons learned from these communities is that bus service must be fully supported by the community. Community members may initially be resistant to bus service, but as ridership increases they may become more supportive. The communities interviewed stressed the importance of finding a dedicated revenue stream. Providing transportation to business parks can be difficult since the employer and public transportation agency may have differing goals. They also discussed the importance of having a marketing plan targeted at attracting passengers to the system.

Appendix B contains additional information the peer communities and the transit services provided in these communities.

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## IV – Existing Transportation Service

The City of Lake Forest, Metra and Pace provide public transportation service in Lake Forest. There are also seven entities that provide transportation service for their employees or students. Five of these services are shuttles from the Lake Forest Train Stations to a place of employment. One of the goals of this study was to determine if there is a way to coordinate or consolidate the existing services into a unified public transportation system.

### A. CITY OF LAKE FOREST DIAL-A-RIDE SERVICE

The City of Lake Forest provides transportation services for senior citizens. Dial-A-Ride service is available Monday through Friday, between the hours of 8:45 a.m. and 4:00 p.m. Service is provided in Lake Forest, Lake Bluff and Knollwood, but exceptions to these boundaries can be made on an individual basis. A ten ride coupon costs \$30. Individuals must call in advance to arrange a trip. The City also has a minibus that is used to provide shopping trips to various shopping centers Wednesday through Friday.

The vehicles used for the Dial-A-Ride service and shopping center routes were donated to the City. Annual ridership on these services is approximately 6,000 passengers.

Lake Forest also participates in a subsidized taxi program. Residents of Lake Forest, Lake Bluff and Knollwood over the age of 65 who do not drive may obtain coupons, which will reduce the price of a taxi trip by \$3. Trips must be made within the Lake Forest High School District.

### B. OTHER CITY OF LAKE FOREST TRANSPORTATION SERVICES

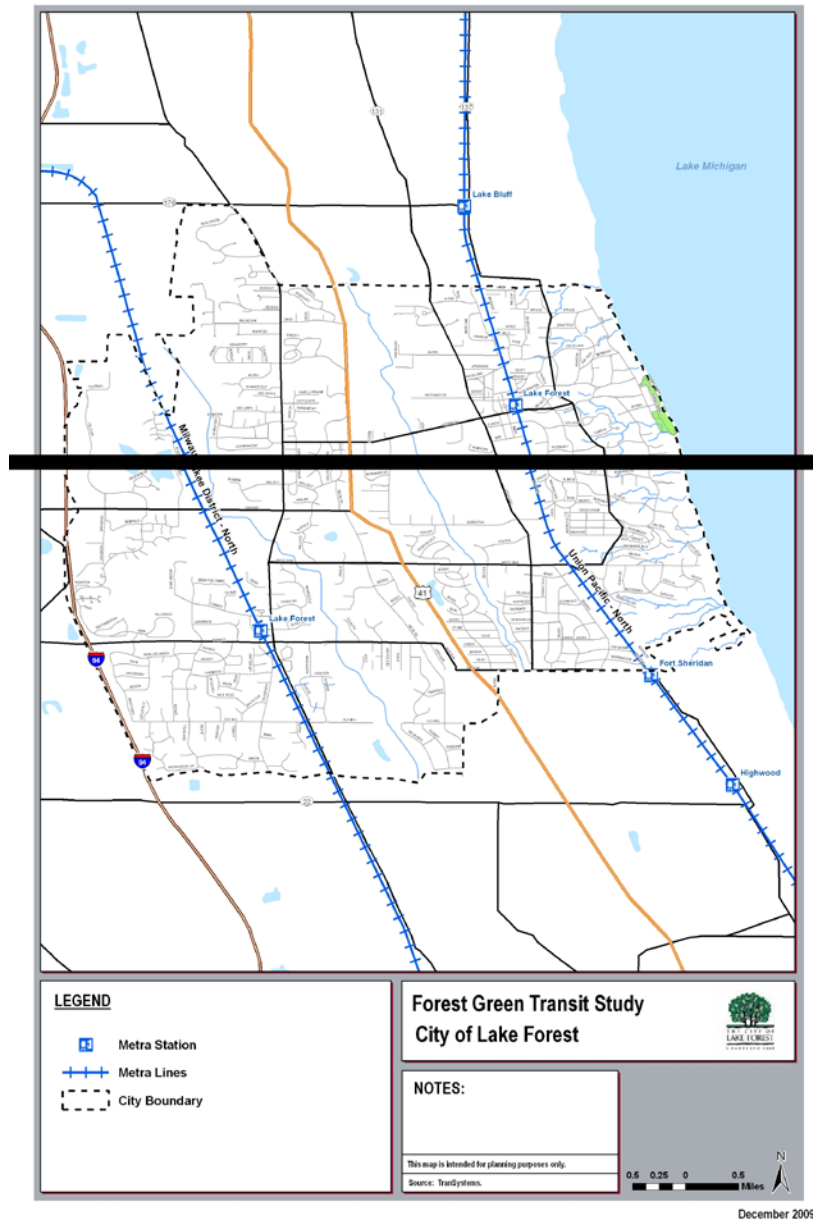
The City has taken other actions to meet the transportation needs of its residents and employees:

- The City has a minibus that is used to provide shopping trips for senior citizens to various shopping centers Wednesday through Friday.
- Lake Forest participates in a subsidized taxi program. Residents of Lake Forest, Lake Bluff and Knollwood over the age of 65 who do not drive may obtain coupons, which will reduce the price of a taxi trip by \$3.00. Trips must be made within the Lake Forest High School District.
- The City offers its Green Ride Program to Lake Forest employees. This ridesharing program allows a City vehicle to be parked at one of the Metra Stations overnight. A group of City employees arrive at the train station and then drive the vehicle to where they work. In the afternoon, they drive the vehicle back to the train station.

### C. METRA

Figure 5 shows the two Metra lines passing through Lake Forest: the Metra Union Pacific North (UP-N) Line and the Metra Milwaukee District North (MD-N) Line.

Figure 5: Metra Lines Serving Lake Forest

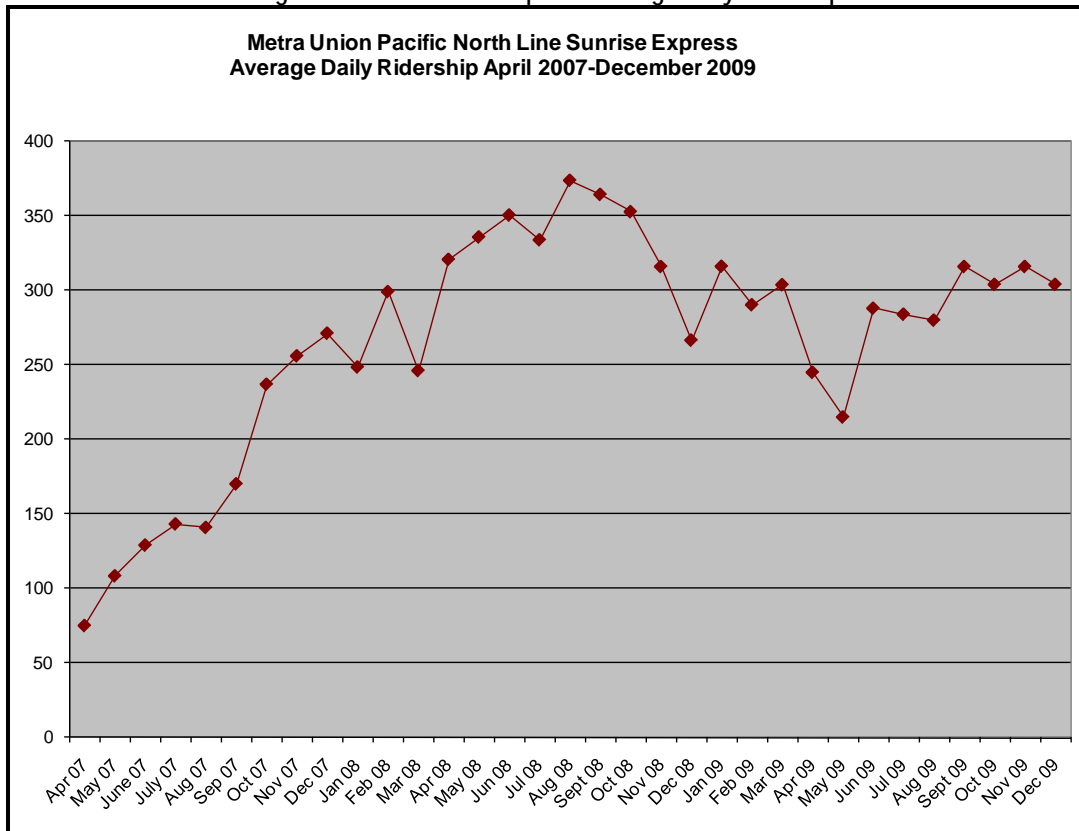


The Metra Union Pacific North Line operates between the Ogilvie Transportation Center in downtown Chicago and Kenosha, Wisconsin. The station is located at Western Avenue and Market Square in the downtown area and is locally known as the “Market Square/Downtown” station. There are eleven parking lots with a total of 693 parking spaces, including ten handicapped accessible spaces at this station. Ninety-seven percent of the spaces are typically utilized on a daily basis.

Lake Forest was part of a coalition that worked with Metra to create earlier reverse commute service called the Sunrise Express. This is the first outbound train from Ogilvie Transportation Center to serve Lake Forest, departing at 5:42 a.m. This service started in April of 2007 and ridership rapidly grew. Many of the riders are City of Chicago residents who need to be at their place of employment between 7:00 a.m. and 7:30 a.m.

The average daily ridership on the Sunrise Express since the service began is shown in Figure 6. Ridership has grown from approximately 75 passengers per day to its current level of 300 passengers per day. Ridership peaked at over 350 passengers per day during the summer of 2008 while the Edens Expressway was under construction.

Figure 6: UP-N Sunrise Express Average Daily Ridership



The Metra Milwaukee District North Line operates between Union Station in downtown Chicago and Fox Lake, Illinois. The station is located at Everett Road and Telegraph Road in west Lake Forest and is locally known as the “Telegraph Road” station. There are 563 parking spaces, including ten handicapped accessible spaces at this station with 411 of the spaces (75%) utilized daily.

There are no inbound trains to Chicago on the MD-N between 4:47 p.m. and 7:59 p.m. This gap in service creates difficulties for employees residing south of Lake Forest along the MD-N desiring to commute to work using public transportation. In order to travel home in the evening, they must travel to the Deerfield station, which is approximately 15 minutes away. This gap is caused by operational issues due to the single track of the train line between Rondout and Fox Lake. Metra has long-term plans in the 2030 Regional Transportation Plan to make infrastructure improvements to the MD-N Line between Rondout and Fox Lake that will improve operations. Additional passing sidings between Roundout and Fox Lake, an additional overnight coach yard at Rondout, and possible track and signal improvements along the line are all proposed. Proposed improvements to the existing signal system and additional crossovers and other track improvements along the Main Line (Chicago Union Station to Rondout) will increase the operating capacity and reliability. A new upgraded replacement outlying coach yard would also be provided to allow for more efficient servicing of equipment and to accommodate the expansion of service.

Metra collects data on the origins of its passengers and their mode of access. Most of the commuters accessing the UP-N Station live in between Green Bay Road and Sheridan Road. Many of the commuters accessing the MD-N

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Station reside in the southwest portion of Lake Forest. Also, many of the commuters who live in the southeast portion of Lake Forest access the UP-N Fort Sheridan Station.

The primary mode of access for both stations is “drive alone” with 47% of UP-N commuters and 68% MD-N commuters responding in that manner. An additional 20% for the UP-N and 14% for the MD-N get dropped off. About 25% of the commuters for the UP-N Station walk to the station compared to 7% of the MD-N Station commuters and less than 1% use a bus to access either station. The balance either carpool or bike to access the stations.

Additional Metra data can be found in Appendix C.

#### **D. BUSINESS PARK SERVICES**

Transportation service to the business parks near the Tri-State and Route 60 originally began as part of the Shuttle Bug program managed by the Transportation Management Authority of Lake Cook. The TMA of Lake Cook is a not-for-profit business association whose mission is to improve employees' commute to work for a better quality of work in Cook and Lake Counties. The Shuttle Bug program is a public-private partnership between TMA of Lake Cook, Pace, Metra and area businesses to provide convenient shuttle service connections between participating businesses and Metra stations. The agencies and employers share the cost of shuttles that provide door-to-door service from the stations to employees' workplace on 16 routes.

Originally, two Shuttle Bug routes operated by Pace served the Lake Forest Metra Stations. Route 574 connected Conway Park on the east side of the Tri-State Tollway on the east side of the Tri-State Tollway to the UP-N Lake Forest Metra Station. This route was discontinued on September 2, 2008 primarily due to some disagreements among employers about service characteristics. In September of 2008, the Business Park Transportation Committee of Lake Forest and Mettawa (BPTC) began operating a private service to Conway Park, Grainger, and Opus Place.

In February 2008, Route 625<sup>4</sup> was modified to serve only HSBC and CDW on the west side of the Tri-State Tollway. Route 625 used to serve a portion of Conway Park (Brunswick and Pactiv/PCA) as well as Grainger. Pace operates a single bus that departs from the Metra UP-N Station and operates via Deerpath Road and Waukegan Road to the Metra MD-N Station and then operates to CDW and HSBC via Everett Road and Riverwoods Road. Beginning in April 12, 2010, service to the Metra MD-N Station was reduced. The first morning trip and the second and fourth afternoon trips no longer serve the Metra MD-N Line Station.

Ridership on Pace Route 625 averaged approximately 50 passengers per day prior to the service changes implemented on this route in February 2008. This service change; construction on the Edens Expressway, Tri-State Tollway and IL-60 Kennedy Road; and high gas prices caused ridership to quadruple to over 200 passengers per day during the summer of 2008. Ridership fell to an average of approximately 54 passengers per day as passengers switched to BPTC buses after the discontinuation of service to the eastern section of Conway Park (Brunswick and Pactiv/PCA) and Grainger in September 2008. Additional information regarding Pace Route 625 can be found in Appendix D.

BPTC contracts with a private provider to provide service to Conway Park, Grainger, and Opus Place. Two buses operate directly from the Metra UP-N Line Station to the business parks. One bus operates to Brunswick, Pactiv, Hospira, Takeda, Tenneco, and Trustmark. The other bus operates to Brunswick, Grainger, and Abbott. A third bus provides service from the Metra MD-N Line Station to all the employers. In the afternoon, it operates one trip to the Deerfield Metra Station due to the gap in service on the MD-N Line at Lake Forest.

Ridership on BPTC provided service averaged approximately 160 passengers per day during the summer of 2009.

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<sup>4</sup> Shuttle Bug service is the only public transportation operated by Pace in Lake Forest.



## E. OTHER PRIVATE SHUTTLES

In addition to the transportation services provided by Pace, several entities also provide shuttle service. Table 4 summarizes the other private shuttle service operated in Lake Forest.

**Table 4: Summary of Other Private Shuttles in Lake Forest**

Provider	Service Description	Passengers	Days of Service	Hours of Service
Lake Forest College (Students)	Route varies by day of week. Destinations include Metra Stations, hospitals, retail stores, entertainment, and Evanston.	Students of Lake Forest College	Daily	Service starts at 12:10 p.m. most days. Ending time varies by day of week.
Lake Forest College (Faculty & Staff)	Public safety transports faculty & staff from UP-N Metra Station.	Faculty and staff of Lake Forest College	Monday – Friday	Trips are made upon request.
Lake Forest Academy	Shuttles from UP-N and MD-N Metra Stations to Lake Forest Academy.	Students of Lake Forest Academy	Monday – Friday	Trips at 7:45 a.m., 4:00 p.m., 5:00 p.m., and 6:00 p.m.
Woodlands Academy	Shuttle from UP-N Fort Sheridan Metra Station to Woodlands Academy. Van from MD-N Metra Station.	Students of Woodlands Academy	Monday – Friday	Trips at 7:30 a.m. and 3:15 p.m.
School District 67 & 115	Shuttle from UP-N Metra Station to middle school and high school.	Staff of schools	Monday – Friday	Morning and afternoon rush hour
Lake Forest Place	Shuttle operates from Lake Forest Place to various shopping locations. Schedule varies by day of week.	Residents of Lake Forest Place	Monday – Friday	9:30 a.m. to 4:00 p.m.

The operations of Pace and private shuttles were observed during the morning at each station. Twenty-five people were observed boarding shuttles provided by agencies other than Pace or BPTC. In addition to the shuttles listed above, shuttles operating to Abbott Laboratories and Trinity International University were also observed operating from the MD-N Metra Station. Additional information on these shuttles was not collected since these shuttles serve destinations outside of the study area.

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## V. Market Research

Data was collected from multiple sources to help determine the market for public transportation in Lake Forest and the appropriate type of services to meet these markets. These sources included:

- Stakeholder interviews
- Employer provided data
- Public meetings
- Two web-based surveys

### A. STAKEHOLDER INTERVIEWS

Various stakeholders in Forest Green Transit Study were interviewed in March of 2009. The purpose of these interviews was to identify transportation services currently being provided and any unmet public transportation needs. Those interviewed included representatives from:

- Residents of Lake Forest
- Lake Forest College
- CROYA
- School District 67 & 115
- Lake Forest Hospital
- Lake Forest Place
- Lake Forest Academy
- Chamber of Commerce
- Conway Park
- Woodlands Academy
- Lake Forest – Lake Bluff Senior Center

The following comments were heard during multiple interviews

- Lake Forest's strengths and positive attributes
  - A safe and secure community; it has a "small town" feel; people know their neighbors
  - Its accessibility to Chicago, Evanston, and Gurnee
  - Strong school system
  - The advantages of an affluent community – arts, social activities, cultural activities
  - Use of zoning to create a beautiful and well maintained city
  - The mix of a rural and urban community
  - The lakefront
- Issues facing Lake Forest
  - Roadway constrained / traffic along Deerpath and around schools
  - Stores are closing in Market Square, not enough variety, rents are too high
  - Parking issues around Market Square
  - Very little retail to generate sales tax revenue
  - Lack of public transportation; need to drive everywhere
  - A perception that Lake Forest residents are elitists.
- General impressions of public transportation in Lake Forest include:
  - High visibility for Metra; otherwise nonexistent
  - People need to drive everywhere
  - Students do not ride the school buses
- Is transit still viewed as a solution for the poor, persons with disabilities and the elderly?
  - Environmental and traffic issues are changing the perception of transit

- Transit is perceived as a green solution
- How does the variability in gas prices affect the value and importance of transit in Lake Forest?
  - When gas prices were high last summer, people looked for other transportation options
  - Some employees struggled to get to work, others formed carpools
- What role does transit have in providing transportation options for the youth or seniors of Lake Forest?
  - There is a huge need for midday transit service for seniors
  - Transit would allow students to attend CROYA activities
- How will success be measured with the Forest Green transit system?
  - Increasing ridership
  - Decrease in congestion along Deerpath
- What type of vehicle should be used for Forest Green?
  - Start with smaller, attractive vehicles with no external advertising
  - Comfortable – high-back seats, storage space
  - Low emission
  - On-board video / Wi-Fi
  - Friendly, caring bus operators
- Suggestions to market the service include
  - Face to face contact / transit fairs
  - Education for the public
  - Newsletters
  - Employer websites
  - Partnerships with businesses / reward companies that participate with recognition
  - “Green Day” events
- What service characteristics will Forest Green have to have for you to ride the bus?
  - Service every 20 minutes
  - Service 7 days a week
  - Convenient schedule
  - Signage is important – style needs to be “charming, traditional, and green”
- Other key transit issues include
  - Transit service to Vernon Hills
  - Transit service to the beach
- The following provide transportation services:
  - Lake Forest College: routes for students / shuttle for employees (provided by public safety)
  - School District 67 and 115: school bus service
  - Senior Center: door to door Dial-A-Ride service
  - Lake Forest Academy: shuttles for students
  - Conway Park Tenants: shuttles for employees
  - Woodlands Academy: shuttle from Sheridan station

Other comments from interviews:

- Various Bus Rapid Transit routes could serve Lake Forest
- School buses are only 20% full
- An aging population – many are “snowbirds”
- Only 15-20% of the residents have school age children
- Small vehicles will not work for Conway Park tenants
- There is an old guard and new guard in Lake Forest
- Few people under 35 own homes in Lake Forest
- Conway Park has 11 companies with 5,000 to 6,000 employees

- Stores in downtown are not open later than 5:30p.m.

## B. EMPLOYER PROVIDED DATA

A summary of employment data collected during the stakeholder interviews is shown in Table 5.

**Table 5: Summary of Employment Data from Stakeholder Interviews**

Employer	Number of Employees	Work Shifts / Hours	Where Employees Reside
Lake Forest College (Students)	1,400 Students	Not Applicable	1,100 students on campus 60% from IL Others from MA, CA, WI, and IN
Lake Forest College (Employees)	448 employees	8:00a.m.-4:00p.m. (faculty) 8:30a.m.-5:00p.m. (staff)	Staff resides west and south of Lake Forest
CROYA	5 Full Time Equivalent 1 85% FTE		
School District 67 & 115	600 employees	Similar to school hours	75% reside outside of school district
Lake Forest Hospital	1,770 employees	7:00a.m.-3:00p.m. 3:00p.m.-11:00p.m. 11:00p.m.-7:00a.m. Many 12 hour shifts Scheduling is flexible	Mostly north of Lake Forest: Waukegan, Gurnee, and Lindenhurst
Lake Forest Place	200 employees	7:00a.m.-3:00p.m. 3:00p.m.-11:00p.m. 11:00p.m.-7:00a.m.	
Lake Forest Academy (Employees)	100 employees 50 contract employees	8:00a.m.-4:00p.m. (Office) 7:00a.m.-3:30p.m. (Housekeeping) 6:00a.m.-2:30p.m. (Housekeeping) 2:30p.m. – 10:00p.m. (Security, Housekeeping)	A third live on campus Others live in Wauconda, Round Lake, North Gurnee, & Waukegan
Lake Forest Academy (Students)	400 Students		200 boarding students 25 from Chicago
Grainger	2,600 employees	Between 7:00a.m.-6:00p.m.	
Trustmark	780 employees	Between 6:00a.m.-6:00p.m. 4.5 day work week	
Woodlands Academy (Employees)	60 employees	8:15a.m.-3:10p.m. (Faculty) 8:00a.m.-4:00p.m. (Staff)	
Woodlands Academy (Students)	171 students	8:15a.m.-3:10p.m.	34 boarding students Others from Chicago, Barrington, & Glenview

Many of the larger employers in Lake Forest were asked to provide the ZIP Code of their employees' home address. In addition to employers that are part of the BPTC; the City, Lake Forest College, Lake Forest Place, Lake Forest Academy, and Woodland Academy provided data. This data was then mapped and analyzed using Geographic Information (GIS) software. When comparing the location of Conway Park employees to other

employees, more Conway Park employees live south of the City than do employees of other locations in Lake Forest.

In order to use public transportation to their place of employment, employees will need to use regional service to travel to Lake Forest. Since none of Pace's regional services currently serve Lake Forest, the only transit option to access Lake Forest is Metra. An analysis was conducted to determine the number of employees that live in a ZIP Code adjacent to the either Metra line. A significant number of employees at Conway Park live in ZIP Codes adjacent to Metra lines serving Lake Forest (see Table 6).

**Table 6: Conway Park Employees Residing Along a Metra Line**

	Union Pacific / North Line	Milwaukee District / North Line
Employees residing south of Lake Forest	369	220
Employees residing north of Lake Forest	817	545

Other employees in Lake Forest tend to reside in Lake Forest and the adjacent communities. Slightly fewer employees reside in ZIP Codes adjacent to Metra lines (see Table 7).

**Table 7: Other Location Employees Residing Along a Metra Line**

	Union Pacific / North Line	Milwaukee District / North Line
Employees residing south of Lake Forest	219	131
Employees residing north of Lake Forest	745	473

Maps of employees' residents by ZIP Code for each employer providing data can be found in Appendix E.

### C. PUBLIC MEETINGS

On April 15, 2009, an open house public meeting was held at City Hall to solicit input from the public. Three stations were at the meeting:

- Informational Boards – These boards provided background information on the study. They also presented information about existing transportation providers and where employees reside. Consultant staff was available at the boards to answer any question.
- Interactive Map – At this station, attendees placed a sticker on a map of where they lived. They then placed two stickers on the map of where they desired to travel.
- Survey – Computers were available for attendees to complete an on-line survey.

Thirteen people attended the open house and ten attendees participated at the interactive map station. Forty percent of the attendees resided in Lake Forest. The other attendees reside in Highland Park, Lake Bluff, and Gurnee. The primary destination for attendees was CROYA or Lake Forest High School. The secondary destinations included downtown, Forest Park Beach, Sunset Foods, and the new Municipal Services building in Conway Park.

A public meeting to present initial service concepts was held on the evening of October 29, 2009. Two stations were at the meeting:

- Informational Boards – These boards described the initial service concepts. Consultant staff was available at the boards to answer any question.
- Surveys were available for people to complete.

Approximately 20 people attended the meeting. Most attendees were seeking information about the possible service designs. All attendees were asked to provide feedback by completing an on-line survey. In general, feedback from the participants was positive about the concepts that were presented.

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In association with each of the open house meetings, an on-line survey was available for additional input. These are described in the next section.

#### **D. ON-LINE SURVEYS**

Two on-line surveys were conducted during the study. These were informal surveys designed to involve various parties (residents, students, and employees) in the planning process and were not intended to create statistically valid samples. The response to both surveys was large<sup>5</sup> and provided guidance for the development of service options. The travel needs survey had 675 responses and the service design feedback survey had 787 responses.

##### **1. Survey 1: Travel Needs Survey**

In order to allow the public to provide information on how they travel within Lake Forest and how they would use a public transit system, an on-line survey was conducted in April of 2009 in conjunction with the initial public meeting. This survey was placed on the City's website for two weeks. Posters at the Metra stations and an article in the City's newsletter encouraged people to fill out a survey. In addition, e-mails were sent to Transportation Advisory Committee members asking them encourage their people to complete a survey. Paper copies of the survey were distributed at the Senior Center. A copy of the survey along with additional analysis is located in Appendix F.

##### **a. General Analysis**

Six hundred and seventy-five (675) people responded to the survey. Sixty-eight percent of the respondents were female. Fifty-one percent of the respondents were between the age of 36 and 65 with 30% between the age of 21 and 35.

Five hundred and eight (508) people responded to a question asking for home and work zip codes. Two hundred thirty-one respondents (46%) provided Lake Forest's ZIP Code as their home ZIP Code. Two hundred seventy-four (54%) respondents reside outside of Lake Forest with between 15 and 25 respondents residing in Lake Bluff (21) and a north side Chicago (16) ZIP Codes. Eighty percent (80%) of all respondents (409) work in Lake Forest.

Survey respondents were asked questions about why and how they would use public bus service. These questions included what the purpose of their trip would be, where they would go and how often, and on what days they would travel. Responses to these questions guided the design of recommended services.

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<sup>5</sup> The response to both of these surveys was the best response to a web-based survey as part of a Regional Transportation Authority RTAP (Community Planning) Study this consultant has conducted in the Chicago area, including the communities of Schaumburg, St. Charles, Bensenville, and Mt. Prospect. Other studies have received fewer than 100 responses, with only one study receiving as many as 200 responses.

## b. Trip Purpose

Survey respondents were asked for what trip purpose they would use public bus service. Fifty-eight percent (248) of the 469 responses stated that they would use the bus for work. Forty-six percent (215) would use the bus for shopping and 42% (196) for social or recreational purposes.

Survey respondents were asked what their primary and secondary destinations would be if they used public bus service. Table 8 summarizes the top twenty desired destinations. Lake Forest College was the most requested destination, followed by Vernon Hills Mall.

Table 8: Top Twenty Destinations

Rank	Destination	Total Responses	Percent of Total
1	Lake Forest College	156	14%
2	Vernon Hills Mall	127	12%
3	UP-N Metra Station (Market Sq.)	121	11%
4	Jewel	111	10%
5	Market Square	97	9%
6	MD-N Metra Station (Telegraph Rd.)	65	6%
7	Conway Park	64	6%
8	Lake Forest Hospital	55	5%
9	LFHS East Campus	41	4%
10	Forest Park Beach	38	3%
11	Deer Path Middle School	29	3%
12	Lake Forest Library	27	2%
13	Recreation Center	27	2%
14	Settlers Square	23	2%
15	LFHS West Campus	21	2%
16	Municipal Complex	21	2%
17	Senior Center	13	1%
18	CROYA	12	1%
19	Lake Forest Academy	9	1%
20	Cherokee School	8	1%

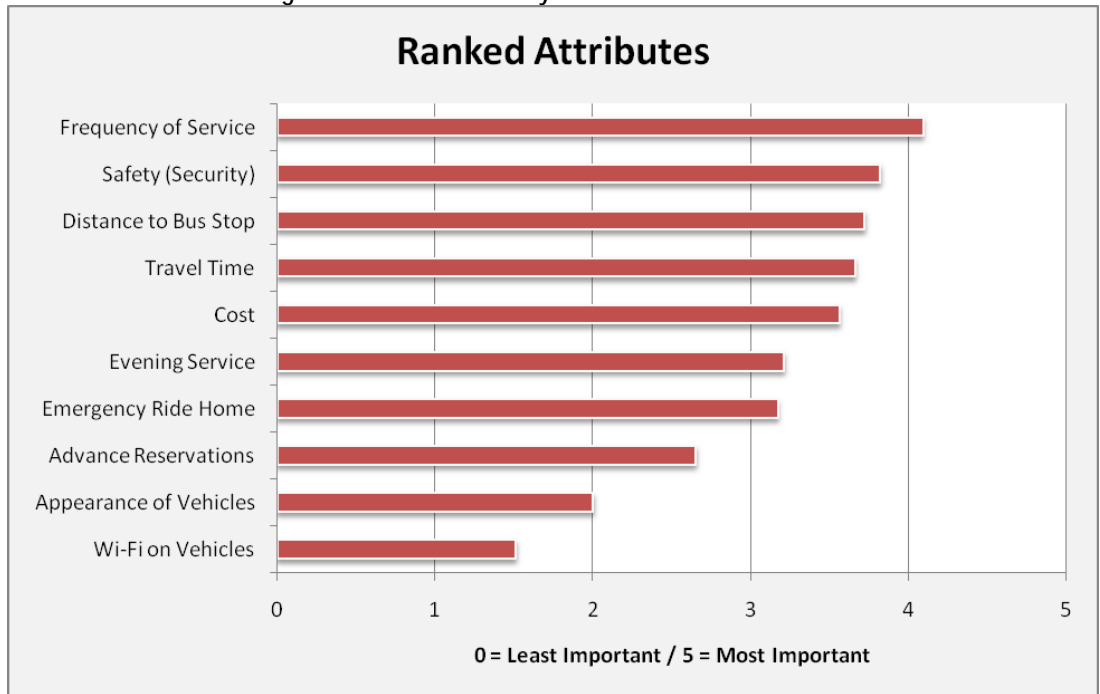
## c. Frequency of Use

Survey respondents were asked how many days per week they would ride public bus service. Most respondents stated that they would use the service periodically. Thirty-two percent (154) of the 481 responses stated that they would use the bus one to three days per week. Thirty percent (145) would use the bus only occasionally and 19% (93) three to four days per week. Survey respondents were also asked on which day type they would ride the bus. A majority (404) of responses (480) stated they would use the bus on weekdays. Thirty percent (146) responded they would use the bus on Saturday and only 13% responded they would use the bus on Sundays.

## d. Important Service Attributes

A series of questions were asked to gauge what qualities were important in a transit system. Respondents were asked to rank each item and could rank them all equally important (Figure 7). Respondents ranked frequency of service as the most important attribute. Safety, distance to bus stop, and travel time were ranked almost equally. Respondents ranked appearance of vehicles and Wi-Fi on vehicles as the least important attribute.

Figure 7: Ranked Transit System Attributes





## 2. Survey 2: Service Design Feedback Survey

Using information and data from previous tasks and market research, possible service designs for Forest Green Transit were developed to serve the identified local and employee markets. Preliminary service designs were presented to the Transportation Advisory Committee in September 2009. After a review, the Committee authorized presenting the following possible designs to the public to obtain their feedback.

- **Employee service to the Business Park area:**
  - Two routes from the Metra / Union Pacific North Station (Downtown / Market Square)
  - One route from the Metra / Milwaukee District North Station (Telegraph Road)
  - Service operates on weekdays and meets trains from 6:30 a.m. – 8:40 a.m. and 4:30 p.m. – 7:35 p.m.
- **Employee and student service to other areas of Lake Forest:**
  - One route from the Metra / Union Pacific North Station to Lake Forest College, Lake Forest High School, Lake Forest Hospital, Lake Forest Place, Deer Path Middle School, and other destinations along the route.
  - One route from the Metra / Milwaukee District North Station to Lake Forest College, Lake Forest High School, Lake Forest Hospital, Lake Forest Place, Deer Path Middle School, and other destinations along the route.
  - Service operates on weekdays and meets trains from 6:30 a.m. – 8:40 a.m. and 4:30 p.m. – 7:35 p.m.
- **Two local service options for residents and students:**
  - Dial-A-Ride service that allows a passenger to reserve a trip in advance. Service is available anywhere in Lake Forest and operates on weekdays from 9:00 a.m. – 7:30 p.m.
  - A flexible route where a vehicle follows an established route and timetable, but may travel off route to pick-up or drop-off passengers. The route operates every 60 minutes on a two-way loop through the City on weekdays from 9:00 a.m. – 8:00 p.m.
- **Regional service designed to meet regional shopping needs:**
  - One route connecting the City and Vernon Hills Mall.
  - Service operates every 60 minutes. Days and hour of service to be determined by survey responses.

Additional information about the initial service design concepts can be found in Appendix H.

The on-line survey was available to complete from October 29, 2009 through December 18, 2009. Paper copies were made available to those who did not have access to the Internet. A copy of the survey along with additional analysis is located in Appendix I.

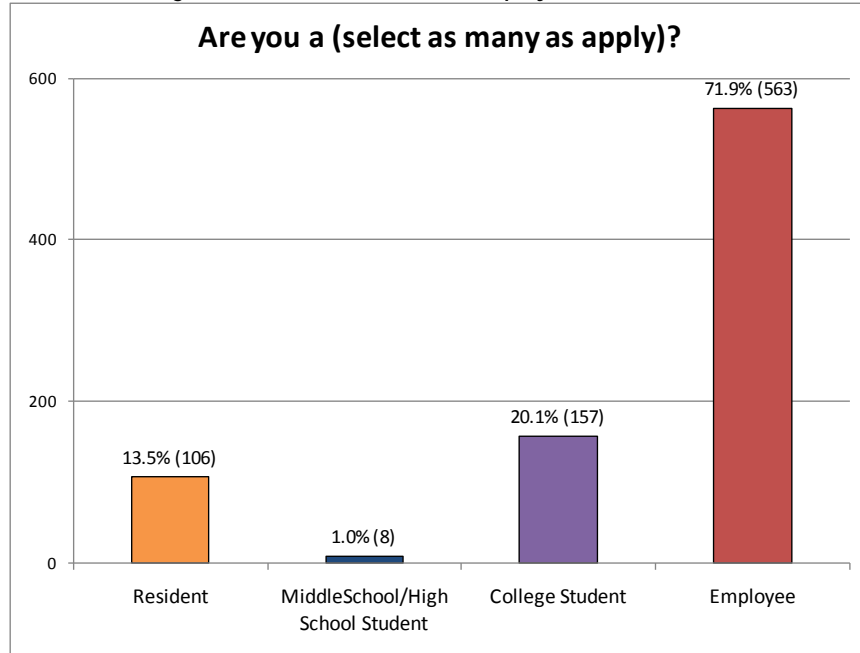
Some of the highlights of survey analysis are:

- 787 residents, students, and employees responded to the survey.
- Residents and students preferred the flexible route service design option for local service.
- 112 employees in the Conway Park area (2% of total employees) responded they would begin riding the Conway Park employee service or ride more frequently if the proposed service design was in place.
- 100 employees or students responded that they would ride the employee or student service to other areas of Lake Forest daily or several times a week.

### a. Demographics

There were 787 responses to this survey, which are 113 more responses than the spring 2009 survey. Seventy-two percent of the respondents are employees in Lake Forest, 20% are college students in Lake Forest, 14% are residents, and 1% middle school or high school students (Figure 8).

Figure 8: Resident, Student or Employee in Lake Forest



Over two-thirds (68%) of responses were from females. Forty-three percent of respondents were between the ages of 35 and 54, 22% between 18 and 24, 20% between 25 and 34, and 12% between 55 and 65. Only three percent of respondents were either older than 65 or younger than 18.

Twenty percent of respondents ride a shuttle from the Metra UP-N Line Station, while 4% ride a shuttle from the Metra MD-N Line Station.

Almost 75% of respondents are employees in Lake Forest indicating a strong interest in transportation alternatives to travel to work. Twenty percent of respondents are students at Lake Forest College. When asked if they currently ride a shuttle from one of the Lake Forest Metra Stations provided by their employer or school, 76% respondents replied that they do not. These people represent a large potential market for public transportation.

## b. Employee Service

One hundred and twenty-two (122) employees in the business park area near the Tri-State Tollway and Route 60 responded they would start riding or ride more often if service was revised to operate directly from the train station. Employees that ride or could ride the Metra MD-N Line frequently requested that two routes also operate from Metra MD-N Station. Employees riding both lines requested earlier shuttle service that would connect to trains departing Lake Forest around 3:30 p.m.

Almost 100 employees or students responded that they would ride the service designed for employees in other areas of Lake Forest. There were nine requests for service to District 67 elementary schools. Two of these requests stated several employees live in the City of Chicago.

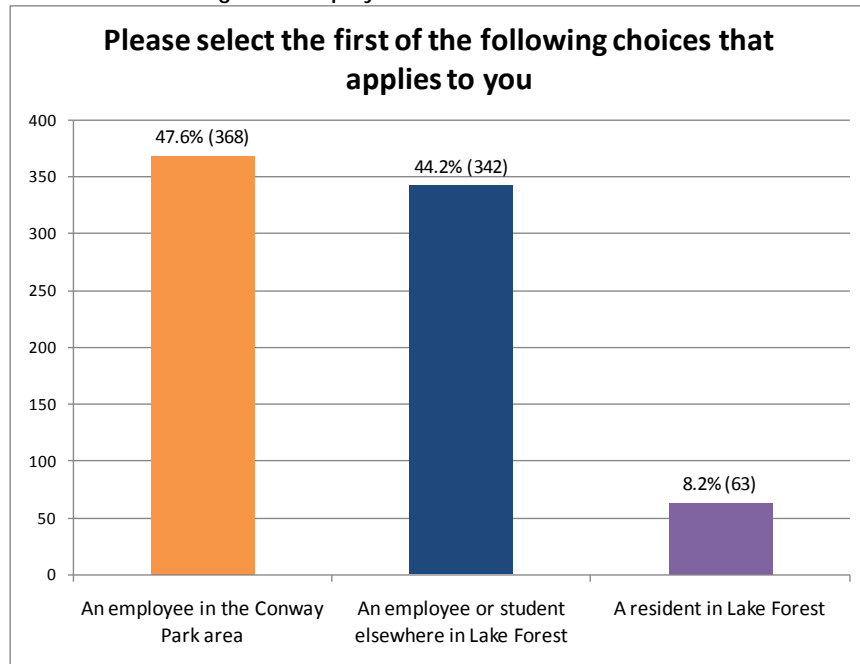
Six hundred and fifty-eight (658) respondents provided their work address or the closest intersection to where they work. Almost half of the employees work in Conway Park. The remaining respondents work at Lake Forest High School, Lake Forest College, and locations along Deerpath Road. The number of responses by employer are shown in Table 9. No responses were received from HSBC or CDW. HSBC and CDW are currently served by Pace, but are located on the west side of I-94 outside Lake Forest city limits.

Table 9: Number of Responses by Employer

Employer	Number of Responses	Number of Locations
Hospira	163	4
Lake Forest College	118	1
Trustmark Insurance	105	1
Lake Forest High School East Campus	36	1
Deer Path Middle School	25	1
City of Lake Forest	23	5
Brunswick	22	1
Tenneco	17	1
Lake Forest Graduate School of Management	16	1
Sheridan Elementary School	14	1
Pactiv Corporation	12	1
Lake Forest High School West Campus	10	1
Grainger	9	1
Everett Elementary School	8	1
Cherokee Elementary School	7	1
Takeda	6	1
CROYA	4	1
Lake Forest Hospital	4	1
Lake Forest Parks and Recreation	4	1
Lake Forest Place	4	1

Survey respondents were asked if they are an employee in the business park area or an employee or student elsewhere in Lake Forest so that they could provide feedback on the appropriate possible service design for employees. Forty-eight percent of respondents are employed in the business park area, while 44% are an employee or student elsewhere in Lake Forest (Figure 9).

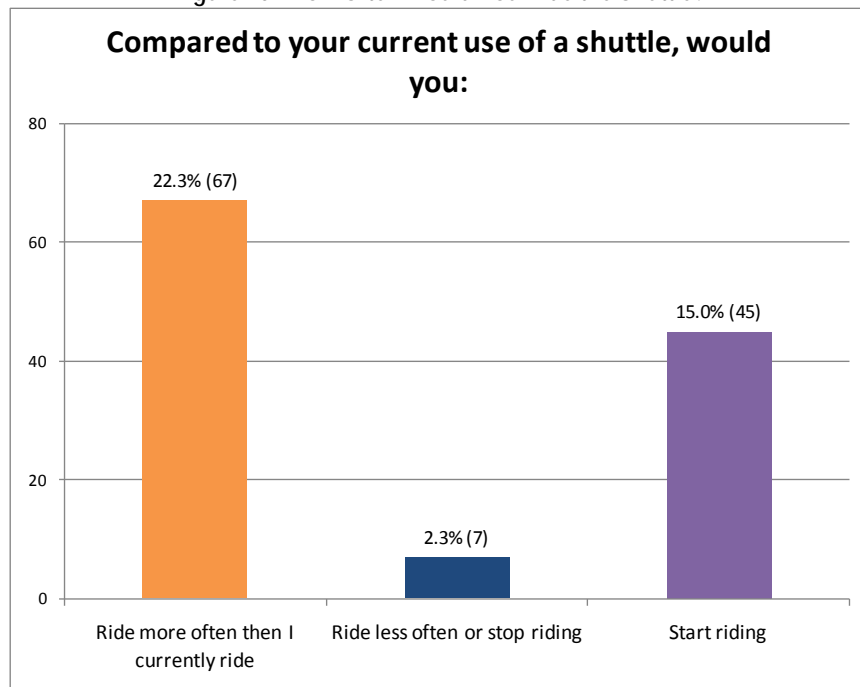
Figure 9: Employee or Resident in Lake Forest



i. Business Park Area Employees

The proposed service to the business park area reviewed by survey respondents was two routes operating directly from Metra UP-N Station to the business park area and one route operating directly from the Metra MD-N Station to the business park area. After reviewing a map and description of this service, 45 employees responded they would start riding a shuttle, while 67 employees responded they would ride more often than they currently ride. Only seven employees responded they would ride less often or stop riding (Figure 10).

Figure 10: How Often Would You Ride the Shuttle?



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The employees were asked why they would or wouldn't use the service. Reasons why they **would use** the service include:

- Shuttle goes directly to office building from the Metra UP-N Station
- Using the shuttle is better for the environment (use less gas and reduce congestion)

In addition to the potential users, there were 181 respondents that replied they would never use the service. Of these respondents, 103 stated they would not use it because of the following reasons:

- Faster to drive (27)
- Work irregular hours or the Metra schedule does not match their work hours (31)
- Live too far from public transit or do not ride Metra. (45)

Other reasons why they **would not use** the service included:

- No dedicated service to business park area from the Metra MD-N Station
- Too long of a walk from bus stop to office building
- Have to drop-off or pick-up children at daycare or school
- Need car for doing errands
- Participant in a carpool or Pace Vanpool

The employees were asked what specific changes they would like made to the possible routes. Their suggestions included:

- Provide shuttle connections to more trains
  - Provide shuttle connections to the 3:24 p.m. train at the Metra UP-N Station
  - Provide connections to northbound trains that go to Kenosha
  - The shuttle needs to connect to more than three morning and three evening trains
- Provide earlier service during heavy snowstorms in order to arrive at the train station on time
- Provide a dedicated shuttle to business park from the Metra MD-N Station
- Provide a stop at Hospira building H3
- Do not use school buses
- Provide a shuttle from another Metra Station (Lake Bluff, Libertyville and Vernon Hills)
- Work with Metra to offer more trains leaving from the MD-N station in the evening

If a fare is charged for the service, 46% would pay between \$1 and \$2, 42% would pay less than \$1, 21% would not pay for the service, and 7% would pay between \$2 and \$4.

Other comments included:

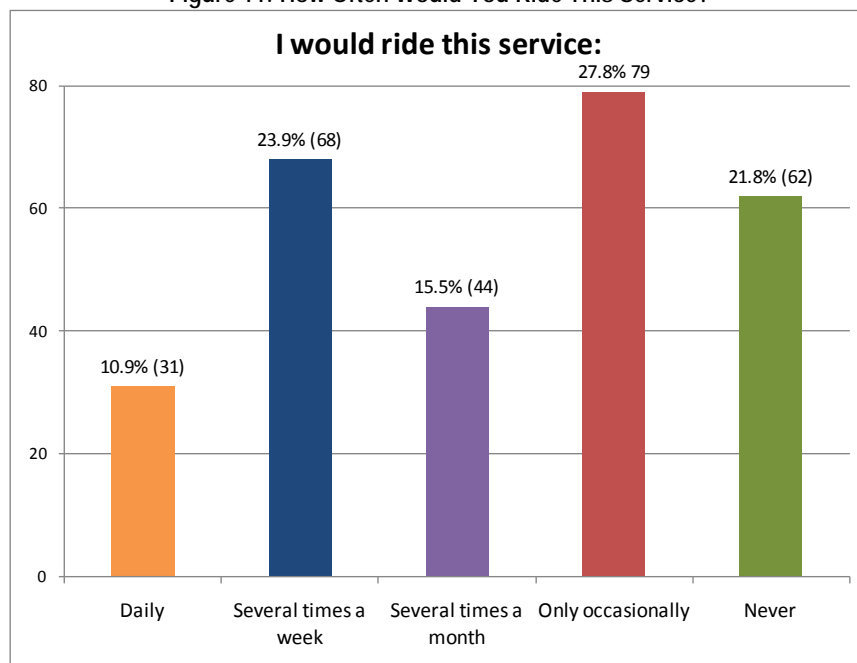
- Adjust the light at Route 60 and St. Mary intersection to reduce delays along Route 60
- Provide better communication regarding the bus service

#### ii. Employees or Students Elsewhere in Lake Forest

Two possible routes were designed to serve other employees or students in Lake Forest. One route operates from the Metra MD-N Station to the east side of Lake Forest and another operates from Metra UP-N Station to the west side of Lake Forest. Both of the routes serve Lake Forest College, Lake Forest High School, Lake Forest Hospital, Lake Forest Place, and Deer Path Middle School.

After reviewing the possible service to elsewhere in Lake Forest, almost 100 employees or students responded that they would ride the service that was described in the survey daily or several times a week. An additional 44 employees responded that they would ride several times a month. One-hundred forty-one (141) employees responded that they would use the service only occasionally or never (Figure 11).

Figure 11: How Often Would You Ride This Service?



The employees were asked why they would or wouldn't use the service. Reasons why they **would** use the service included:

- Convenience
- Avoid driving or walking during bad weather
- Using the bus is better for the environment (use less gas and reduce congestion)

Reasons why they **would not** use the service included:

- No need to ride the service
- Lake Forest College and Lake Forest High School already provide a free shuttle
- Will not pay to ride service
- Does not serve elementary schools for District 67
- Do not live near a Metra Station
- Arrive at work or leave work before service begins operating
- Does not come by my residence

If a fare is charged for the service, 38% would pay between \$1 and \$2, 32% would pay less than \$1, 26% would not pay for the service, and 4% would pay between \$2 and \$4.

Other comments included:

- Provide bus connection to the 5:22 p.m. express train from Highland Park Metra / UP-N Station to Chicago
- Allow bikes on the bus
- Do not charge college students a fare since bus service is covered in student fees
- Make the high school the first stop after departing the Metra UP-N Station so that employees are able to arrive to work on time

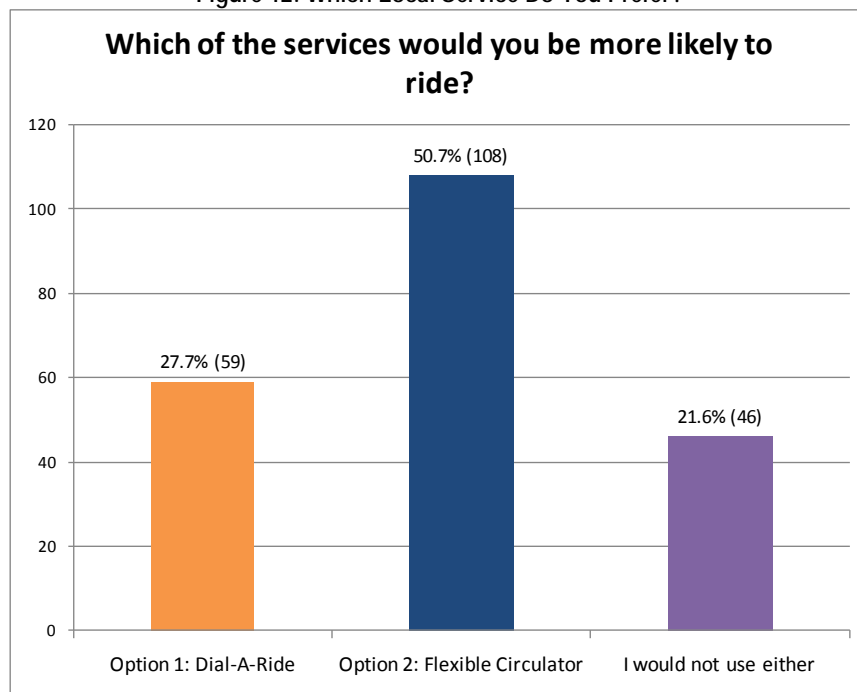
### c. Local Service

Two options were presented for local service:

- Dial-A-Ride service that allows a passenger to reserve a trip in advance.
- A flexible route where a vehicle follows an established route and timetable, but may travel off route to pick-up or drop-off passengers.

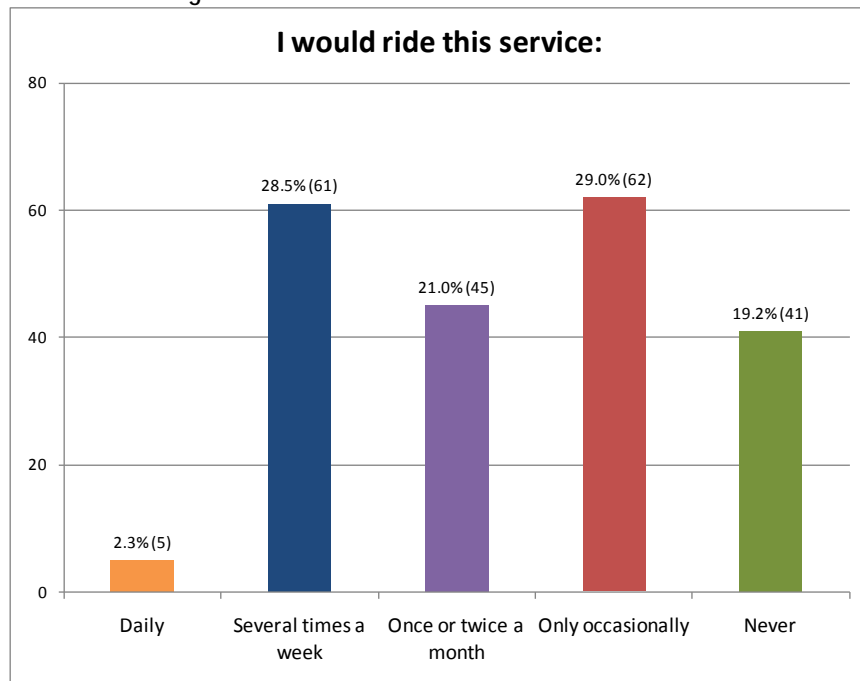
After reviewing the possible service designs for local service, 51% of 213 respondents replied they would be more likely to ride the Flexible Circulator service. Twenty-seven percent replied they would be more likely to use Dial-A-Ride and 22% replied they would not use either (Figure 12).

Figure 12: Which Local Service Do You Prefer?



Twenty-nine percent (29%) of respondents would ride the service several times a week, 21% once or twice a month, 29% occasionally, and 2% would ride daily. Nineteen percent (19%) would never use the service (Figure 13).

Figure 13: How Often Would You Ride This Service?



Respondents were asked why they preferred Dial-A-Ride or flexible circulator service. The sixty-seven (67) respondents who preferred the flexible circulator provided the following reasons:

- Route serves the places I need to go
- Prefer buses with an established route or schedule
- Do not want to plan travel in advance or call in advance to reserve a trip
- The option can serve people who live slightly off of the route
- Consistency or constant operation

The thirty-eight (38) respondents that replied they preferred Dial-A-Ride service stated their reasons for selecting the option were:

- More convenient to be picked-up and dropped-off at home or work
- Can schedule a trip when I want to travel
- Flexible circulator does not come close enough to home or work
- Saves fuel since the driver does not have to drive around with an empty bus

Respondents that replied they would not use either service were asked to describe why. Thirty-six (36) people answered this question and their responses can be summarized as:

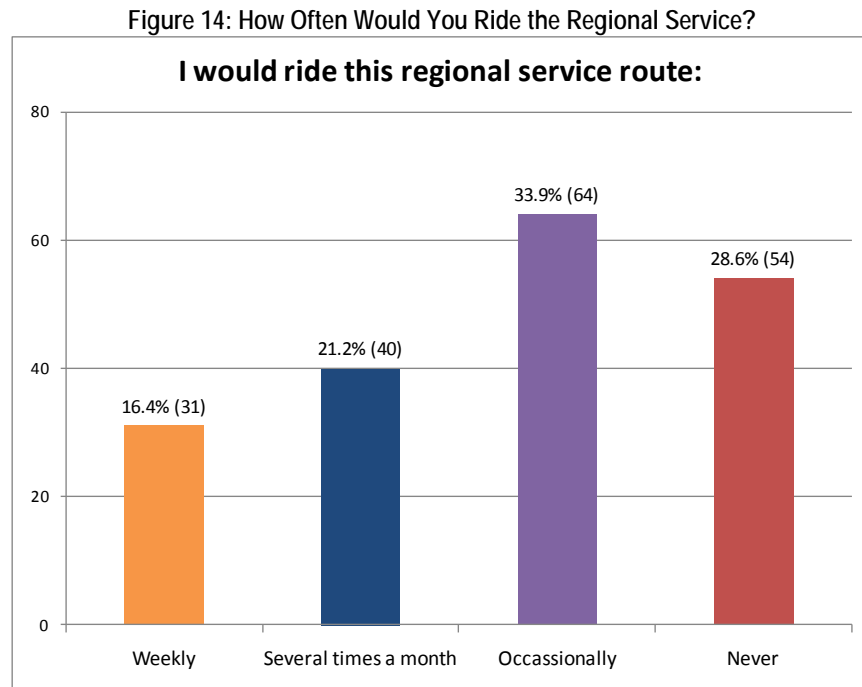
- Service starts too late, ends too early or does not operate on weekends
- Service does not travel outside of Lake Forest
- Do not need the service; able to walk, bicycle, or drive
- Lake Forest College already provides a shuttle at no additional cost
- Service does not go by my home

If a fare is charged for the service, 44% would pay between \$1 and \$2, 22% would pay less than \$1, 21% would not pay, and 13% would pay between \$2 and \$4.



#### d. Regional Service

After reviewing the possible regional service connecting Lake Forest to the retail area of Vernon Hills, 64 people responded they would ride the service occasionally, 40 would ride several times a month and 31 would ride weekly. Fifty-four people responded they would not ride the service (Figure 14).



Questions were asked about which days and hours the regional service should operate. Friday, Saturday and Sunday received at least twice as many responses as other days of the week. Both 12:00 p.m. - 6:00 p.m. and 6:00 p.m. - 10:00 p.m. received the most responses.

If a fare is charged for the service, 41% would pay between \$1 and \$2, 10% would pay less than \$1, 18% would pay between \$2 and \$4 and 31% would not pay for the service. Approximately 80% of those replying they would not pay for the service are Lake Forest College students.

Other comments included:

- Prefer Lake Forest College's free shuttle service to Vernon Hills
- Prefer to drive since I own a car

#### E. SUMMARY OF MARKET RESEARCH FINDINGS

Through market research the following characteristics were identified:

- Lake Forest has low residential density, which is difficult to service with traditional public transportation.
- There is significant interest from both employers and employees for improved service from the Metra stations to the business parks.
- Stakeholders identified the transit needs and interests along with potential funding partnerships.

Through stakeholder interviews, data analysis, and market research, two distinct transit markets in Lake Forest were identified: employee and local. The employee market consists of employees at Conway Park, Lake Forest College, Lake Forest Hospital, the high school, City and other small businesses located in downtown. The local market

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consists of residents and students. The student market is further comprised of two segments: college students and high school / middle school students. These two markets and their needs are discussed below.

Employees tend to use transit on a regular basis. The employee market is characterized by trips in the morning and evening peak periods with clustered destinations. Employee transportation needs often require a direct and convenient connection between the regional transportation service and their place of employment.

The local market is characterized by trips at many times of the day from dispersed origins and destinations throughout Lake Forest for shopping, social or recreational purposes. The local market consists of two components, residents and students, that tend to use transit irregularly – one to three times per week. The student market is mostly Lake Forest College students. While the Transportation Advisory Committee and stakeholders expressed that public transportation is a need for middle and high school students, very few of these students responded to the survey. Only six responses were received from respondents between the ages of 12 – 15 (the age students typically can travel by themselves while still too young to drive.) Sixty-two responses were received from respondents between the ages of 16 – 20. By examining their responses to other questions, it appears that these are mostly college students.

The information collected through the market research is fundamental to the recommendations for service in the next two chapters of this report.

Chapter VI addresses the recommendations for Lake Forest Services.

Chapter VII describes recommendations for the Business Park Services.

These services are addressed separately because the key funders and decision makers differ.

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## VI – Lake Forest Services

This chapter presents the operating plan and implementation strategies for the Lake Forest services. These are services that the City will be able to influence and control. These recommended services are not currently operating, except for some elements provided by private shuttles. The City will need to be the advocate for implementation as they bring partners together to fund and operate recommended services.

There are six entities providing private shuttle service in Lake Forest. These entities include:

- Lake Forest College (one shuttle for students and one for faculty and staff)
- Lake Forest Academy
- Woodlands Academy
- School District 67 and 115
- Lake Forest Place
- Lake Forest Senior Center

A goal of the Forest Green Transit Study is to identify transit services that can provide an efficient and effective transit system in Lake Forest. This system can meet the needs of people who are currently served, as well as those who currently do not have available transit. The following services are designed to bring together existing services in order to meet the needs identified during market analysis. These services include:

- Flexible circulator
- Employee and student service from both Metra stations
- Regional service

An initial concept<sup>6</sup> for each of these services was developed and presented to the Transportation Advisory Committee (see Appendix H). After the Committee's approval of the concepts, an on-line survey was conducted to obtain the public's feedback. Analysis of the survey identified the following changes, which are incorporated into the following operating plan:

- The employee service was modified from a fixed-route service design to call-n-ride service design in order to serve more Lake Forest employers.
- The regional route should operate on Fridays, Saturdays, and Sundays from 12:00 p.m. to 10:00 p.m.
- No changes were recommended to the flexible circulator.

After a review of the estimated costs and ridership for these services, the Transportation Advisory Committee was concerned that these services might not be sustainable initially and requested a scaled down "starter service" be developed. The recommended entry level transit service is a Dial-A-Ride service operating in all parts of Lake Forest except the business parks located near the Tri-State Tollway and Route 60, which already served by Pace and BPTC shuttles.

If the City decides to implement the Proposed Entry Level Service, it should establish a goal of moving towards the Potential Future Services consisting of Call-n-Ride, flexible circulator and regional route structure as ridership grows and these services become more sustainable. Public input stated that a scheduled, flexible route circulator would be preferred to a reserve in advance service.

These services are also designed to provide connections to a possible Amtrak stop at the Metra Milwaukee District – North Line station in Lake Forest. A feasibility study of establishing an Amtrak stop at his station for the Chicago to Milwaukee Hiawatha service is being planned. The study is a partnership between State Senator Susan Garrett, City of Lake Forest, Metra, Amtrak, Illinois Department of Transportation, Wisconsin Department of Transportation, and the Canadian Pacific Railroad.

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<sup>6</sup> A literature search was conducted to identify studies that can provide guidance when developing service designs. A summary of relevant studies is located in Appendix G.

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## A. PROPOSED ENTRY LEVEL SERVICES

Dial-A-Ride service is the Proposed Entry Level Service since it meets the basic transportation needs of the local market. It could perform the basic mobility functions of both the flexible circulator and employee call-n-ride service. While it is not fully responsive to the market research and feedback, it is a lower cost service. Since the amount of service can be adjusted to meet demand, it might be a good first step into the local service market for Lake Forest. If this alternative is selected, attention to the public input that stated they would prefer a scheduled service should be kept in mind and moved towards.

The recommended Dial-A-Ride service would operate in all parts of Lake Forest except the business parks located near the Tri-State Tollway and Route 60. (These business parks are served by existing shuttle service and are discussed in the next chapter). The service would operate on weekdays from 6:30 a.m. – 8:00 p.m.

This type of service can be used to:

- Bring residents to and from Metra Stations
- Provide access to downtown retail and dining establishments without having to worry about parking
- Allow a senior citizen to access medical services at Lake Forest Hospital
- Provide a trip home for student after completing an after school activity
- Allow Lake Forest College students to access employment opportunities near Settlers' Square
- Bring employees from the train stations to their work places

During the rush hours, service would focus on getting passengers to and from the Metra Stations. In the morning a vehicle would be waiting at each of the Metra stations. After getting off the train, passengers would board the bus and inform the driver where they wish to be dropped off. The driver would then determine the best geographical routing to serve the passengers. To reserve a ride back to the train station, the passenger would need to call at least one hour in advance of their train departure.

Outside of the rush hours, other passengers including residents and students would be required to reserve a trip in advance. Passengers would need to call to arrange a trip at least an hour in advance. The passenger would state where they are going, what time they need to arrive and request a return trip. The passenger would then receive confirmation of what time they would be picked-up.

Passengers with a recurring trip (same days and times) should be able to schedule a subscription trip. These are trips are arranged at the same time and day for an extended period of time. This allows regular users to ride the service without calling each day.

This service would be the best service for initial implementation because:

- Lake Forest does not contain the household densities that typically contribute to the success of traditional fixed route.
- Residents will not have to walk to a bus stop since the service is curb-to-curb. Since many of the streets in Lake Forest lack sidewalks, residents will likely find curb-to-curb service convenient.
- The level of service can easily be adjusted to meet the level of demand by increasing or decreasing the number of vehicles.
- The cost is lower than other service designs that were explored.
- The passenger's travel time is competitive with automobile travel time. (However, Dial-A-Ride service will not significantly reduce the number of cars on the road.)
- Other communities in Cook and Lake Counties have found Dial-A-Ride service useful in meeting the transportation needs of their community.

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A map is below in Figure 15 and Operating Characteristics are in Table 10. The following terms are used in operating characteristics tables:

**Estimated Total Annual Vehicle Hours** – the estimated total hours during which transit vehicles operate per day multiplied by 255 operating days (365 days minus 52 Saturdays minus 52 Sundays minus the six major holidays per year).

**Estimated Cost per Hour** – estimated cost based on information provided by other communities in Lake and Cook counties, Pace, and consultant experience with similar services. The estimated cost per hour includes drivers' salaries, fuel, maintenance, insurance, and overhead costs. It may vary depending on the service type and the level of dispatch involved.

**Estimated Annual Cost** – the estimated total annual vehicle hours multiplied by estimated cost per hour.

**Estimated Annual Ridership** – two methodologies were used to estimate ridership. The first method examined responses to the "How often would you use this service" question on the second on-line survey. The other method used the average ridership per hour for comparable services. The average ridership for comparable service is estimated through recent experiences with other systems and then multiplied by the number of estimated vehicle hours for the service.

**Estimated Capital Cost** – the estimated expense to purchase vehicles. This expense would only occur every five to seven years.

Figure 15: Dial-a-Ride Service



Table 10: Dial-A-Ride Service Characteristics

	Dial-a-Ride Service
Hours of Service	Weekdays: 6:30a.m.-8:00p.m.
Vehicles	Two
Estimated Total Annual Vehicle Hours	7,395 hours
Estimated cost Per Hour	\$55 - \$65
Estimated Annual Ridership	25,000 – 46,000
Estimated Annual Cost	\$405,000 - \$480,000
Estimated Vehicle Purchase Cost	\$100,000 - \$150,000
Infrastructure Requirements	Dedicated boarding/alighting location at Metra Station
Regional Connections	Metra

## Fares

Funding service will require revenues from fares, local partnerships and other sources. A fare of \$2 is recommended. Seventy-four percent people responding to the local service fare question were willing to pay a fare with 41% willing to pay a fare between \$1 and \$2. A \$2 fare is comparable to what other municipalities charge for their Dial-A-Ride service. Assuming a fare of \$2 is charged, annual fare revenue is estimated to be between \$51,000 and \$92,000.

It is recommended that Lake Forest work to identify partnerships to help fund this service. Potential partners for this service include School District 67 and 115, Lake Forest Hospital, Lake Forest Place and Lake Forest College. The Dial-A-Ride may allow these entities to reduce the amount of service they currently operate. When entering into a partnership, potential partners will need to relinquish some control especially related to routing. When one of the private shuttles departs the train station today, it travels directly to the passengers' destination. With shared trips of a Dial-A-Ride the vehicle may stop at another location first, possibly adding travel time to some passengers' trips.

## Vehicles

It is recommended that smaller transit vehicles or vans seating between 12 and 16 passengers be used on this service. These vehicles are likely to be a passenger body mounted on a GMC or Ford truck frame, commonly referred to as a body on chassis. There are two vans available that have modern styling and offer low-emission options that would fit the image and goals of Lake Forest, the TurtleTop Terra Transport and the Dodge Sprinter Van (originally designed and manufactured by Mercedes). Both are highly maneuverable, which will assist navigating Lake Forest's street network and the narrow bodies may be less intimidating when other vehicles encounter these vehicles. These vehicles cost between \$50,000 and \$75,000 and have a useful life of five to seven years if purchased. The city may or may not have to purchase vehicles depending on the desired service delivery option (Section C of this Chapter).

Figure 16: TurtleTop Terra Transport



Figure 17: Dodge Sprinter Van



## **B. POTENTIAL FUTURE SERVICES**

The long-term goal of local service should be to move to a regularly scheduled service as ridership grows and these types of services become more sustainable. Public input stated that a scheduled flexible route circulator would be preferred to a service where they would need to reserve a trip in advance. Three types of service are recommended for future implementation should demand warrant and adequate interest be generated:

- A flexible circulator to serve work, shopping, school, and other trip purposes.
- A Dial-A-Ride service for resident trips to Metra stations and local employment trips to locations other than the business park area near the Tri-State Tollway and Route 60.
- A regional route operating to the Vernon Hills area.

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## 1. Flexible Circulator

The flexible circulator is designed to meet the transportation needs of the local market, which is characterized by trips at many times of the day from dispersed origins and destinations throughout Lake Forest. Two possible service designs for local service were presented to the public for their feedback: Dial-A-Ride and flexible circulator. When asked which service design they were more likely to ride, 51% of 213 respondents replied they preferred the flexible circulator service compared to 28% respondents that preferred Dial-A-Ride service. Respondents commented they liked a service with an established route and schedule. They did not want to have to call in advance to arrange a trip.

A flexible circulator is where a vehicle follows an established route and timetable, but it may travel off route to pick-up or drop-off passengers. The vehicle returns to the designated route within one block of the point where the route deviated. This ensures that all intersections along a route are served and keeps the fixed route characteristic of knowing a transit vehicle will be on a route within a time range. Passengers can request an off route deviation either when they board the bus if boarding at a bus stop or by calling to arrange a pickup at a location that is not along the established route.

The anticipated purpose or use for this service is shopping, dining, or recreation. It is recommended that service would operate between weekdays 9:00 a.m. and 8:00 p.m.; the timeframe that residents and students are likely to be making trips for these purposes.

The circulator would operate a two-way loop through the City. The purpose of this is to shorten the time for a return trip from the initial destination. If all the buses operated in the same direction, then passengers may be required to travel a long distance for what would be a short trip if they could catch a bus in the opposite direction.

The circulator would directly serve many destinations including Metra UP-N Station (Downtown/Market Square), Metra MD-N Station (Telegraph Road)<sup>7</sup>, Lake Forest College, Market Square, Settlers Square, Lake Forest Hospital and Deer Path Middle School. Destinations that could be served with a flexible request include: Lake Forest High School East Campus, Forest Park Beach, and the Senior Center.

The clockwise circulator would start at the Metra/UP-N Station travel on Western Avenue – Deerpath Road – Sheridan Road – Westleigh Road – Greenbay Road – Everett Road/Old Elm Road – Waukegan Road – Westmoreland Drive – Deerpath Road – Greenbay Road – Woodland Avenue – Western Avenue – end at the Metra/UP-N Station. The counterclockwise loop would reverse the routing.

Establishing a fare surcharge for off-route service or limiting the number of off-route deviations may be necessary to maintain service reliability. These have been implemented with other flexible services to help maintain a reliable schedule.

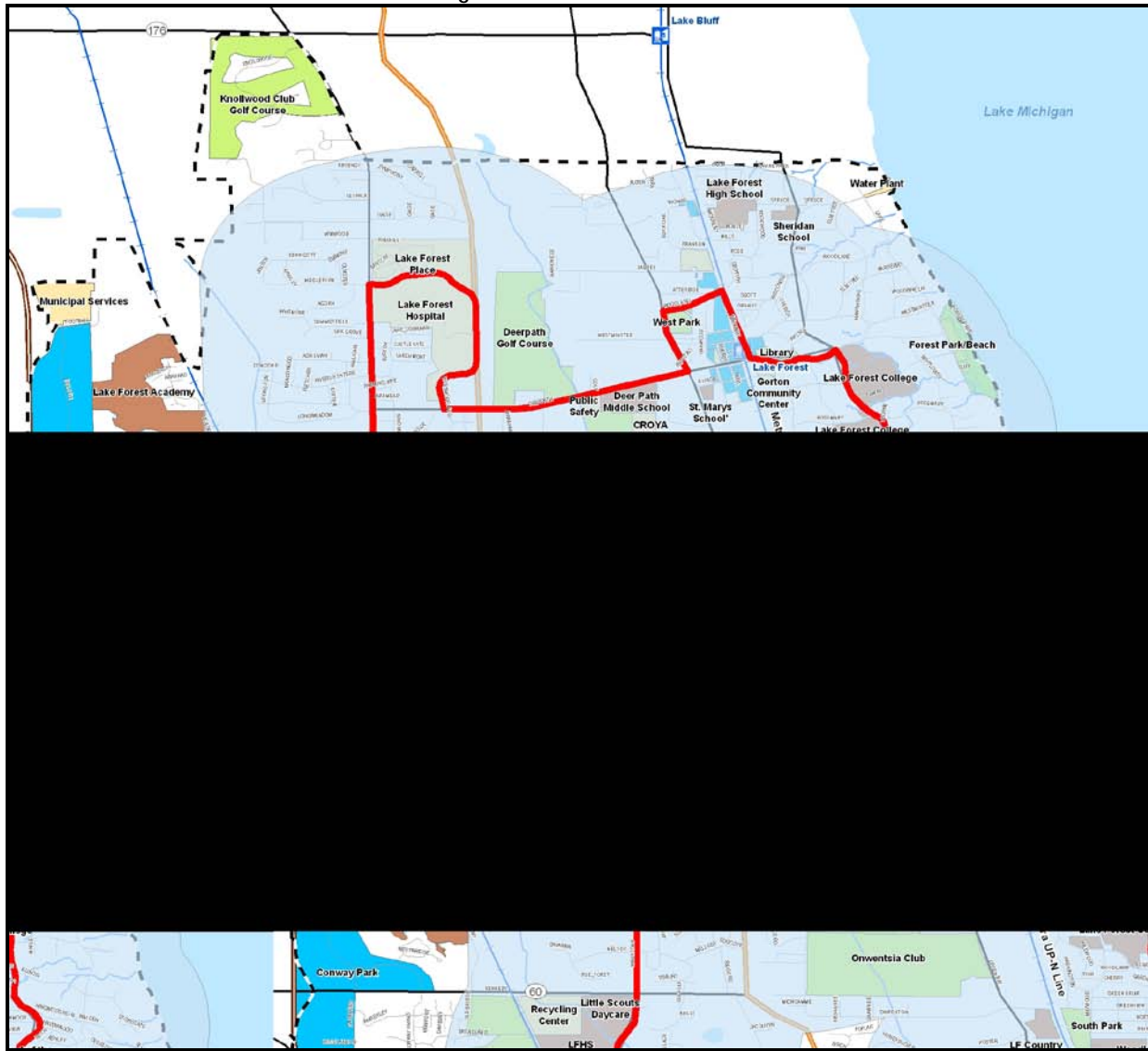
A map and operating characteristics are below in Figure 15 and Table 11.

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<sup>7</sup> Timed connections cannot be made with all arriving and departing Metra trains in Lake Forest. Passengers may have a 5 to 30 minute wait to transfer between the circulator and Metra depending on the direction of travel.



Figure 18: Flexible Circulator



**Table 11: Flexible Circulator Service Characteristics**

	<b>Flexible Circulator Service</b>
Hours of Service	Weekdays: 9:00a.m.-8:00p.m.
Frequency of Service	Every 60 minutes
One-Way Running Time <sup>8</sup>	52 minutes
Vehicles	Two
Estimated Total Annual Vehicle Hours	6,120 hours
Estimated Operating Cost per Hour	\$45 - \$65
Estimated Daily Ridership	12,750 – 22,950
Estimated Annual Operating Cost	\$275,500 - \$400,000
Estimated Vehicle Purchase Cost	\$100,000 - \$150,000
Infrastructure Requirements	Bus stop signs and shelters
Regional Connections	Metra

Fares/Partnerships

Funding service will require revenues from fares, local partnerships and other sources. A fare between \$1 and \$2 is recommended. Seventy-four percent of survey respondents were willing to pay a fare with 41% willing to pay a fare between \$1 and \$2. Assuming a fare of \$1.50 is charged, annual fare revenue is estimated to be between \$19,000 and \$34,500. This estimate does not include a fare surcharge for off-route service.

It is recommended that Lake Forest work to identify partnerships to help fund this service. Potential partners for this service include Lake Forest Place and Lake Forest College. The flexible circulator may allow these entities to reduce the amount of shuttle service they currently operate. Funding agreements could be reached where current shuttle users are allowed to use the circulator for free or a reduced fare, reducing the fare revenue, yet off-setting the cost of service.

Vehicles

It is recommended that similar transit vehicles described in the Dial-A-Ride section also be used on this service.

**2. Employee Call-N-Ride Service**

Transit service connecting both Metra Stations to various Lake Forest employers not located near the Tri-State Tollway and Route 60 is recommended. Fixed routes connecting the stations with Lake Forest High School (LFHS), Lake Forest College, Lake Forest Hospital, Lake Forest Place, and LFHS West Campus were presented to the public for feedback. Only eight survey responses were received from Lake Forest Hospital and Lake Forest Place employees. Twenty-nine responses were received from District 67 employees; many requesting service to their school. A service design that can serve employers with dispersed geographic location is recommended.

A service similar to Pace's recently implemented Round Lake Area Call-n-Ride service, which serves the Washington Street (Grayslake) Metra Station and Round Lake Metra Station is recommended. This service is similar to the needs in Lake Forest as the buses serve train station on two different Metra Lines.

A Call-n-Ride service design that allows service to the many employers of Lake Forest that are not located in the business park area of the Tri-State and Route 60 is recommended. The service area would be the same as the Dial-A-Ride service are shown in Figure 15. This flexible service will allow the bus driver to determine the most efficient

<sup>8</sup> One-way running time was estimate by a combination of fieldwork (timing the proposed route) and applying average operating speed for flexible routes in other communities.

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routing for the passengers, instead of requiring them to ride a fixed route that may serve destinations where no one is going. A unique feature of this service is that passengers call the driver instead of a dispatcher to arrange a trip in the afternoon. This service would operate anywhere in Lake Forest except to the business parks located near the Tri-State Tollway and Route 60 (west of Field Drive and Saunders Road along Route 60).

In the morning a small, accessible transit vehicle would be waiting at each of the Metra stations. After getting off the train, passengers would board the bus and inform the driver where they wish to be dropped off. The driver would then determine the best geographical routing to serve the passengers.

To reserve a ride back to the train station, the passenger would need to call at least one hour in advance of their train departure, though they could also schedule a return trip up to 24 hours in advance. When arranging a pick-up trip, the driver will inform the passenger of an expected pick-up time. Passengers will need to be ready at least five minutes before their scheduled pick-up time. The driver would not wait for passengers that are not ready to make sure the service is reliable for other passengers.

Passengers with a recurring trip (same days and times) should be able to schedule a subscription trip. These are trips arranged at the same time and day for an extended period of time. This allows regular users to ride the service without calling each day.

This service can also be available to local market. Residents could reserve a trip to get to the train station in morning and home in the afternoon.

A map and operating characteristics are in shown in Figure 19 and Table 12.

Figure 19: Employee Call-n-Ride Service



Table 12: Other Employee Service Characteristics

	Metra/Union Pacific North Line	Metra/Milwaukee District North Line
Hours of Service	Weekdays: 6:30a.m. - 9:05a.m. 2:55p.m. - 6:25p.m.	Weekdays: 7:30a.m - 9:05a.m., 2:55p.m. - 7:35p.m.
Frequency of Service	3 trains in the morning, 4 trains in the evening	2 trains in the morning, 4 trains in the evening
Vehicles	One	One
Estimated Vehicle Hours	1,900 hours	1,900 hours
Estimated Operating Cost per Hour	\$40 - \$60	\$40 - \$60
Estimated Ridership	7,000 – 11,500	7,000 – 11,500
Estimated Annual Cost	\$76,500 - \$115,000	\$76,500 - \$115,000
Estimated Vehicle Purchase Cost	\$50,000 - \$75,000	\$50,000 - \$75,000
Infrastructure Requirements	Dedicated boarding/alighting location at Metra Station	Dedicated boarding/alighting location at Metra Station
Regional Connections	Metra	Metra

### Fares

Funding service will require revenues from fares, local partnerships and other sources. A fare between \$1 and \$2 is recommended. Seventy percent of respondents were willing to pay a fare with 37% willing to pay a fare between \$1 and \$2. Assuming a fare of \$1.50 is charged, annual fare revenue is estimated to be between \$20,000 and \$35,000.

It is recommended that Lake Forest work to identify partnerships to help fund this service. Potential partners for this service include School District 67 and 115, Lake Forest Hospital, and Lake Forest College. The Call-n-Ride service may allow these entities to reduce the amount of shuttle service they currently operate. Funding agreements could be reached where current shuttle users are allowed to use the circulator for free or a reduced fare, reducing the fare revenue yet off-setting the cost of service.

When entering into a partnership, potential partners will need to relinquish some control especially related to routing. When one of the private shuttles departs the train station today, it travels directly to the passengers' destination. With shared trips of a Call-n-Ride, the vehicle may stop at another location first, possibly adding travel time to some passengers' trips.

### Vehicles

It is recommended that similar transit vehicles described in the Dial-A-Ride section also be used on this service.

### **3. Regional Connection Fixed Route**

Market research identified Vernon Hills Mall as the second most requested destination that the local market would like to access by public transportation. Since there are few non-specialty retail stores in Lake Forest, residents and college students may need to travel outside of the City for general shopping needs.

The regional route is recommended to start at Lake Forest College since the primary market for this service is college students. The route would then travel to Vernon Hills via Deerpath Road, Waukegan Road, and IL Route 60. The bus would circulate through shopping centers. If enough interest exists, Lake Forest Place and Lake Forest Academy could be added to the route.

The recommended days and hours of operations were determined by survey responses. Friday, Saturday and Sunday received at least twice as many responses as other days of the week. Both 12:00 p.m. - 6:00 p.m. and 6:00 p.m. - 10:00 p.m. received the most responses. It is recommended that this service operate Friday through Sunday

from 12:00 p.m. until 10:00 p.m. These are days and times when college students have availability to make shopping and recreational trips.

A map and operating characteristics are below in Figure 20 and Table 13.

Figure 20: Regional Route to Vernon Hills

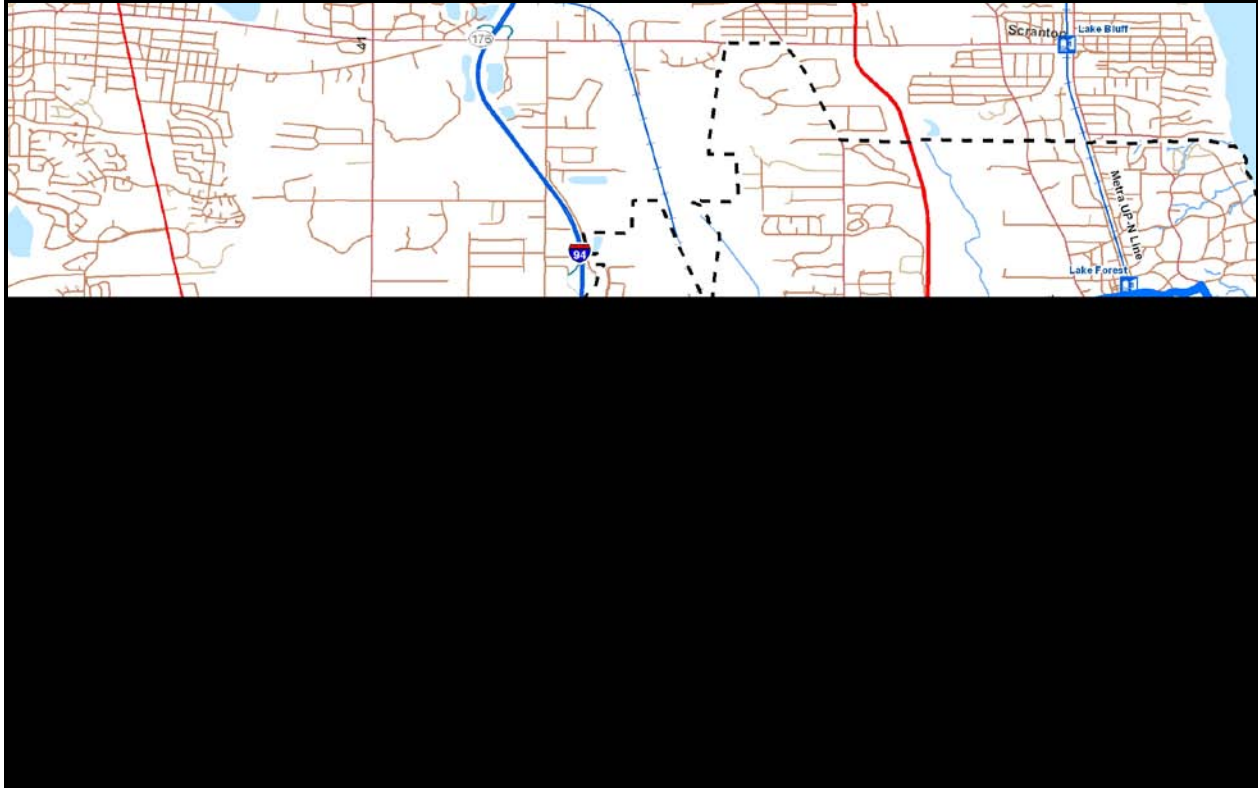


Table 13: Regional Route to Vernon Hills Service Characteristics

	Regional Route Service
Hours of Service	Friday through Sunday 12:00p.m. – 10:00p.m.
Frequency of Service	60 minutes
One-Way Running Time	40 minutes
Vehicles	Two
Estimated Total Annual Vehicle Hours	3,355 hours
Estimated Cost per Hour	\$45 - \$65
Estimated Annual Ridership	3,900 - 11,700
Estimated Annual Cost	\$150,000 - \$220,000
Infrastructure Requirements	Bus stop signs
Regional Connections	Metra, Pace Routes 272 and 572

## Fares

Funding service will require revenues from fares, local partnerships and other sources. A fare between \$1 and \$2 is recommended. Forty-one percent of survey respondents answering the fare question replied they would pay a fare between \$1 and \$2, however 31% responded they would not pay a fare. Assuming a fare of \$1.50 is charged, annual fare revenue is estimated to be between \$5,900 and \$17,500.

Eighty percent of those unwilling to pay a fare are college students, the primary market for this service. Lake Forest College provides students a similar, but much more limited service for free without charging a specific transportation fee. College students commented on the survey that they should not have to pay this service. Entering into a partnership and negotiate a financial arrangement with the Lake Forest College that allows the students to ride for free is recommended.

## Vehicles

It is recommended that similar transit vehicles described in the Dial-A-Ride section also be used on this service.

Table 14 and Table 15 summarize the operating characteristics for the Lake Forest services.

**Table 14: Entry Level Service Estimates**

	<b>Entry Level Alternative: Dial-A-Ride</b>
Market	Residents, Students, & Employees (outside of the business parks)
Hours of Service	Weekdays: 6:30a.m. – 8:00p.m.
Vehicles	Two
Estimated Total Annual Vehicle Hours	7,395 hours
Estimated Cost Per Hour	\$55 - \$65
Estimated Annual Ridership	25,000 – 46,000
Estimated Annual Cost	\$405,000 - \$480,000
Estimated Annual Fare Revenue	\$51,000 - \$92,000
Estimated Net Annual Cost	\$313,000 - \$429,000
Estimated Capital Cost	\$100,000 - \$150,000

**Table 15: Potential Future Services Estimates**

	<b>Future Service: Flexible Circulator</b>	<b>Future Service: Dial-A-Ride</b>	<b>Future Service: Regional Route</b>
Market	Residents and Students	Employees (outside of business parks)	Primarily Students
Hours of Service	Weekdays: 9:00a.m. – 8:00p.m.	Weekdays: Morning and Evening Rush	Friday – Sunday: 12:00p.m. – 10:00p.m.
Vehicles	Two	Two	Two
Estimated Total Annual Vehicle Hours	6,120 hours	3,800 hours	3,355 hours
Estimated Cost Per Hour	\$45 - \$65	\$40 - \$60	\$45 - \$65
Estimated Annual Ridership	12,750 – 23,000	14,000 – 23,000	3,900 – 11,700
Estimated Annual Cost	\$275,000 - \$400,000	\$153,000 - \$230,000	\$150,000 - \$220,000
Estimated Annual Fare Revenue	\$19,000 - \$34,500	\$20,000 - \$34,500	\$6,000 - \$17,500
Estimated Net Annual Cost	\$240,500 - \$381,000	\$118,000 - \$210,000	\$132,500 - \$214,000
Estimated Capital Cost	\$100,000 - \$150,000	\$100,000 - \$150,000	\$100,000 - \$150,000

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## C. SERVICE DELIVERY OPTIONS

There are four basic operating management options in setting up a transit operation:

1. Direct City management and operation (also called an "in-house" operation).
2. Contracted management, but with governmental owned personnel and assets (a combination of an "in-house" and contracted operation).
3. Turnkey – contracted operation with all necessary personnel and assets supplied by a private for profit firm third party entity.
4. Turnkey – contracted operation with all necessary personnel and assets supplied through Pace.

### 1. Direct City Management and Operation

Under this option, the City would hire a transit manager and all necessary employees. Equipment, primarily vehicles, would be acquired and operated by the City as well. In essence, the transit system would be a municipal department as is public safety, community development, or parks and recreation.

The advantage of direct operation is that the City would have direct control over the quality of the transit operation. The City could see to it that its standards of performance are made part of the operation. There would be no misunderstanding on the part of the transit operator as to the City's expectations. Another advantage could be in improving the productivity of certain municipal functions such as fleet maintenance with more vehicles requiring maintenance. Direct operation also avoids overhead and profit costs associated with an outside vendor.

A disadvantage in direct operation is the challenge in hiring expert personnel to manage the operation. This could potentially increase the cost of service. Further, transit personnel (especially drivers) tend to be unionized. This could add an additional challenge to municipal entity's management in administering labor contracts. Finally, assuming an operation in-house would require the review of the City's standard operating procedures to ensure they can support the operation as well as comply with federal funding requirements (such as drug and alcohol testing, procurement regulations, etc.).

### 2. Contract Management

Contract management would involve the City hiring a firm to manage the system. Personnel and equipment would be provided by the City. Firms specializing in transit management have access to experienced personnel and can draw upon expertise that is often needed, but too expensive for the municipal entity to obtain on its own. For example, federal government reports, labor issues, and operating issues have a unique nomenclature. Management firms are well versed in these issues and may respond more effectively than a single transit manager hired by the City.

A disadvantage is that contract management may be higher in cost than a city employed transit manager. Further, the City still has issues relating to driver personnel and the potential for unionization.

### 3. Turnkey Operation Supplied by Private Firm

A turnkey operation involves the City hiring a private firm to set up, run, and manage the transit system.

Here, full responsibility of the operation rests with the contractor. The City would competitively acquire the services of such a firm or organization. The procurement process can help keep costs down as firms wanting the service need to offer quality service at a reasonable cost. These private firms often have deep transit resources and a specialized pool of managerial talent. A contracted operation often avoids unionization issues.



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The disadvantage with turnkey operation is diminished day-to-day control of service quality and the City is somewhat dependent on the expertise of the operator for service decisions. Turnkey operation still requires some City oversight.

#### 4. Turnkey Operation Supplied by Pace

This turnkey operation uses Pace, the suburban bus transit agency, instead of a private firm to set up, run, and manage the transit. Pace may directly operate the service or contract it to a private operator. The same advantages and disadvantages of turnkey operation supplied by a private firm exist with Pace. The advantage of using Pace is they operate the majority of the public transportation in the Chicago suburbs. Only the Village of Downers Grove operates its own transit system in northeastern Illinois. A disadvantage is that it may not be possible to create a unique identity for the Forest Green service. There is less flexibility with the service since service must adhere to Pace's operating procedures. Also, any services that have Pace funding are subject to being prioritized against other services in the system when service cuts need to be made.

#### 5. Considerations

Regardless of which service delivery option for the Lake Forest services the City decides to pursue, the City will always have some involvement as a facilitator. One role of the City will be bringing local partners together when deciding the appropriate service delivery option for Forest Green transit service.

No one delivery option is inherently better than another. These issues can be considered:

- *Packaging Services Together* – When pursuing a contracted option, packaging services together can create economies of scale such as shared dispatch and maintenance that can result in a lower operating cost.
- *Burden on the City* – Transit operation will need operation and administrative support. These points should be reviewed:
  - Can city administrative departments handle the additional work load if the service were operated in house?
  - If the operation were to be in-house, does the fleet services department have capacity to store and maintain the new vehicles?
  - Is the finance department prepared to handle revenue collected on the vehicles?
- *Expertise* – various operational requirements have federal regulations that may be new to the city. In addition, maintaining transit vehicles requires frequent cleaning and preventative maintenance.
- *Exiting the operation* – if the service fails to adequately meet the expectations of the community, which method makes an exit from transit easier?
- *Relative cost* – when taking into account impacts on city staff and facilities, is an in-house or turnkey operation less expensive?
- *Service quality* – which basic delivery method (in-house or turnkey) would ensure the best adherence to desired service standards?

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## D. FUNDING

Funding is the largest barrier to implementing new transit services. In general, capital project funds are more readily available than are funds for operating expenses. This often creates a barrier to implementation because for bus based services, the capital expenses are not very large, yet the on-going nature of operating costs tend to be viewed as burdensome to municipal budgets. Funding sources may be applied to various aspects of implementation, such as pedestrian amenities, signal improvements, marketing, etc. Information is provided below on each potential funding source.

In the past, Pace has participated in applying for federal funds on behalf of communities and often times provided the local match required. Due to significant funding constraints, Pace is rethinking these policies and has indicated that in the foreseeable future they are not able to provide the local match for operating costs of new services. They also will not be applying for the funding on behalf of the municipality. Pace would be able to support local agencies by providing vehicles, technical and planning support for the new services. Subsequently, in order for new services to be implemented, it would fall to the City to provide or find a sponsor for the local match, and solicit the appropriate funds.

### 1. Federal Funds

#### a. CMAQ Congestion Mitigation and Air Quality Program

The Congestion Mitigation and Air Quality (CMAQ) Improvement Program is a federally funded program of surface transportation improvements authorized by the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005. CMAQ funds may fund up to 80% of projects that increase the use of public transportation systems. Generally, there are four broad categories of transit service-related projects or programs:

1. Transit System Startup – These projects are new rail systems, bus service or vanpools. Operating expenses for new systems can be reimbursed for up to three years.
2. Transit Transfer Facilities – These projects increase the convenience of transferring between transit services.
3. Transit Facility Improvements – These projects enhance the existing transit systems through adding or improving facilities such as stations. The improvements have to consist of major capital infrastructure projects and not just minimal improvements to stations. It is difficult to use these funds for station rehabilitation.
4. Transit Service and Equipment – These projects enhance the existing transit system through improvements such as increasing the frequency or operating speed or service on bus routes or rail lines. Operating expenses can be reimbursed for up to three years.

CMAQ applications are submitted to the Planning Liaison of the Mayors and Managers councils for review and then submitted to the Chicago Metropolitan Agency for Planning (CMAP). CMAP's CMAQ Project Selection Committee selects projects in northeastern Illinois, with subsequent approval by the Transportation Committee, Programming Coordination Committee, CMAP Board and MPO Policy Committee. The CMAP staff performs technical analysis of all projects. The Illinois Department of Transportation administers the project. Projects are evaluated based on ability to reduce auto trips and the resulting vehicle emissions.

The Dial-A-Ride, flexible circulator, and Call-n-Ride could potentially be eligible for CMAQ funding.

There are several disadvantages of the CMAQ program that may limit its applicability in Lake Forest. Although the CMAQ program can support new transit services as stated above, the CMAQ program for northeastern Illinois has historically consisted primarily of capital projects associated with vehicle procurement, and construction of installation of new transportation systems. CMAQ funds are limited to three years of start up

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operations. If a new bus service was put into place, a permanent funding source to fund future operations would need to be identified. It may be difficult to prove a reduction in emissions in the region, a main objective of this funding program, since the proposed new bus services are local, not regional, services.

**b. Job Access Reverse Commute / New Freedom (JARC/NF) Program**

The Job Access Reverse Commute (JARC) program is a federally funded program that provides operating and capital assistance for transportation services planned, designed, and carried out to meet the transportation needs of eligible low-income individuals and of reverse commuters *regardless of income*. The New Freedom program provides new public transportation services and public transportation alternatives beyond those required by the Americans with Disabilities Act (ADA). None of the recommended services are eligible for New Freedom funds.

The Regional Transportation Authority (RTA) is the designated recipient of JARC funds and responsible for overseeing and administering the program in northeastern Illinois. Projects funded through this program advance the vision and goals of the RTA Strategic Plan by reducing transportation barriers and expanding mobility options available to persons with disabilities beyond the requirements of the ADA. Types of projects may include:

- Fixed-route service oriented to reverse commuters and/or at times specific to access lower wage jobs.
- Shuttle service to and from rail stations.
- Services that go beyond what the ADA minimally required complementary paratransit service<sup>9</sup>

Private non-profit organizations, state or local government authorities, and public and private operators of public transportation in RTA's six-county service area and the urbanized portion of Kendall County are eligible to receive funds. Capital projects are funded 80% federal and 20% local match. Operating projects are funded 50% federal and 50% local match.

The Dial-A-Ride and Call-n-Ride could potentially be eligible for JARC funding since they serve reverse commuters.

A difficulty pursuing JARC funding is it may be difficult to prove that many of users of the new or expanded bus services are low income individuals in addition to reverse commuters. Funds may also be allocated for one year. If new bus service was put into place, a permanent funding source to fund future operations would need to be identified.

## 2. Regional Funds

**a. The Innovation, Coordination, and Enhancement (ICE) program**

The Innovation, Coordination, and Enhancement (ICE) program was established as part of the 2008 Mass Transit Reform Legislation and is administered by the RTA. This competitive funding program provides operating and capital assistance to enhance the coordination and integration of public transportation and to develop and implement innovations to improve the quality of delivery of public transportation. The intent of the ICE program is to advance the vision and goals of the RTA Strategic Plan by facilitating the use of transit to access jobs and for other trip purposes, providing reliable and convenient transit services, and enhancing efficiencies through effective management, innovation and technology. Types of projects may include:

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<sup>9</sup> Complementary paratransit is specialized demand response service provided for people who cannot use fixed route transit due to a disability, meeting specific comparability requirements as established by the ADA Act. The service is called complementary because it complements fixed-route service by providing additional service need to make the entire system usable by people with disabilities. Complementary paratransit service must be provided within three-quarters of a mile of fixed route and during the same hours of operation as the fixed route.

- Shuttle bus services from rail stations to major activity centers
- Rail and bus reverse commute, intra-community, or off-peak services that enhance regional mobility by facilitating inter-agency connections
- Passenger amenities for customers that need to transfer, such as shelters, benches, kiosks, etc.

All four services could potentially be eligible for ICE funding.

Units of local government in the RTA's six-county service area and the RTA Service Boards (CTA, Metra and Pace) are eligible to receive ICE funds. Design, engineering, and capital projects are funded 80% ICE funds and 20% local match. Operating projects are funded 50% ICE funds and 50% local match. There is a two year limit on funds. Operating projects need demonstrate the ability to be self-sufficient beyond the grant period to be considered for award.

### **3. Local Funds**

#### **a. Pace Local Based Service Vehicle Program**

This program allows municipalities to obtain vehicles from Pace for locally based services. The vehicles seat 10 – 12 passengers and are lift-equipped. Municipalities are required to pay a \$1,000 security deposit and a \$100 monthly fee. The municipality provides drivers for the vehicles. Drivers must be able to complete and pass various DOT and Pace requirements including Pace conducted driver training. The municipality is responsible for the cost of all maintenance, washing, detailing and storage of the vehicle according to Pace's schedule.

#### **b. City Funds**

There are a number of local municipalities and townships that sponsor and support transit services for the general public. Some of these services are provided in partnership with Pace, others are provided solely by the community. The Village of Schaumburg sponsors the Woodfield Trolley and general public Dial-A-Ride service. The Village of Niles sponsors the Niles Free Bus service. The Village of Downers Grove sponsors the Grove Commuter Shuttle, connecting to the Downers Grove commuter rail station.

Funding sources for the local match might not always be popular with residents and often it is difficult to find the resources to implement new services. Local funding approaches that have worked in other communities are described below:

- Increase in local taxes to fund transit
- Financing via general obligation bonds (for capital projects)
- An increase in the price of vehicle stickers or parking fees in order to pay for the new service.
- A special taxing district implemented in a business park or business district that would benefit the most from the new service

#### **c. Public/Private Partnerships**

Other entities in Lake Forest fund transportation for their residents, students, or employees. These entities include Lake Forest College, Lake Forest Place, and School Districts 67 and 115. The City may be able to partner with these organizations to provide new services. The full cost of the service does not need to be paid by these entities – possibly just a contribution towards the local matching amount.

It may be possible for the other entities to reduce or eliminate their transportation expenses. However the service will not be specifically designed for their residents, students, or employees.

Table 16 is a summary of the current funding sources available for public transportation and their applicability.

Table 16: Funding Summary Table

Funding Program	Match Split Program/Local	Use	Applicability	Comments
CMAQ (Congestion Mitigation and Air Quality)	80/20	1. Transit Services: <ul style="list-style-type: none"> <li>• Transit System Startup</li> <li>• Transit Transfer Facilities</li> <li>• Transit Facility Improvements</li> <li>• Transit Service and Equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Dial-A-Ride</li> <li>• Flexible Circulator</li> <li>• Call-n-Ride</li> </ul>	<ul style="list-style-type: none"> <li>• Historically, the CMAQ program in northeastern Illinois has been used only for capital projects so most of the service improvements on this list might have difficult securing funds</li> <li>• CMAQ funds limited to three years of start up operations; other funding sources beyond three years would need to be secured</li> <li>• May be difficult to prove a reduction in emissions –a funding mandate—with either of these service improvements</li> </ul>
JARC (Job Access and Reverse Commute)	80/20 (capital) 50/50 (operating)	Transit for reverse commuters or low income individuals to get to job sites; includes reverse commute service, late night service; addition of bike racks at transit centers, and service expansion	<ul style="list-style-type: none"> <li>• Dial-A-Ride</li> <li>• Call-n-Ride</li> </ul>	<ul style="list-style-type: none"> <li>• Only reverse commute criteria apply in Lake Forest since these funds are independent of income.</li> <li>• Difficult to prove new services would be used by low income individuals</li> <li>• JARC funds may only be allocated for one year; would need to secure additional funding beyond one year</li> </ul>
ICE (Innovation, Coordination and Enhancement Program)	80/20 (capital) 50/50 (operating)	Provides funding for coordination of different services and service modes; promotes connections to outlying activity centers, places of employment, etc.	<ul style="list-style-type: none"> <li>• Dial-A-Ride</li> <li>• Flexible Circulator</li> <li>• Regional Route</li> <li>• Call-n-Ride</li> </ul>	<ul style="list-style-type: none"> <li>• New program so criteria for eligible projects still being developed</li> <li>• ICE funds may only be allocated for one year; would need to secure additional funding beyond one year</li> </ul>

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## E. IMPLEMENTATION STRATEGIES

There are several recommended action items that have been developed as part of the implementation strategies. The first step towards implementation is the acceptance of the report by the City Council. This approval will authorize City staff to take action towards necessary steps towards implementation.

The second step is the creation of a Plan Implementation Committee. This committee will be responsible for setting policy, providing direction and securing funding. Possible members of the committee include City staff, residents (including representation from the senior and disabled communities), and potential funding partners (Lake Forest College, Lake Forest Place, School District 67 and 115, etc.) Key issues for this committee include:

- Research grant application deadlines and complete applications
- Negotiate with potential partners for contributions
- Determine the organization structure
- Finalize service details
- Develop customer information (maps, schedules, and 'how to ride' information)
- Seek other transportation improvements that will enhance the Forest Green Service

Determining how to sustainably fund the service is an important first-step towards implementation since City funding is unlikely to be available at this time. A primary goal of the Implementation Task Force will be to work out some of the details on partnerships and funding opportunities that will provide a clearer picture of the financial parameters related to implementing service. Some transportation services are currently being provided through various shuttles. These shuttles have a more limited span of service than could be provided if a community wide service were in place. There is a possibility that these providers would be willing to participate financially in a consolidated service so they no longer have to be in the transportation business. The Task Force will need to identify financial partnerships with current providers of services (Lake Forest College, School District 67 and 115, Lake Forest Academy) and other potential beneficiaries of service (Lake Forest Hospital).

Table 17 identifies action items, suggested initiators and participants, time frame of implementation, and includes information on resources required or other issues. With regard to the time frame, "short term" is considered within one year after the Plan is adopted, "midterm" is considered within three-five years of after the Plan is adopted, and "long term" is considered beyond five years.

Table 17: Lake Forest Service Implementation Matrix

Category	Action Item	Initiators/Participants	Time Frame	Resources Required/ Comments
NEW LAKE FOREST SERVICES	Approve Plan	City Council	Short Term	
	Organize an Implementation Committee	City staff, Residents Representatives from the senior and disabled communities Potential funding partners Employers	Short Term	Should meet on a regular basis to set policy, provide direction, and secure funding
	Secure operating funding sources for implementation of new services	Implementation Committee	Short Term to Mid Term	Start researching application deadlines and available sources of funds in the short term
	Determine service delivery option	Implementation Committee City Manager	Short Term to Mid Term	Decide which option to pursue: direct city management and operation, contracted management of turnkey operations
	Start up service	City staff Service Operator Implementation Committee	Mid Term to Long Term	Once funding is secured and service delivery option is identified start up service and provide continuous monitoring

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## VII – Business Park Service

Through the public input process, the most responses came from employees in the business parks located near the Tri-State Tollway and Route 60. These office complexes are connected to the Lake Forest Metra Stations by the following shuttles:

- Business Park Transportation Consortium (BPTC) operates three buses from the train stations to Conway Park, Opus Landmark, and Grainger. Employers share the cost of the service based on their total number of employees.
- Pace Route 625 Lake Forest Shuttle Bug is one bus operating from the train stations to HSBC and CDW. The Transportation Management Association (TMA) of Lake Cook, Pace, and Metra pay for this service.

Three hundred sixty-eight employees in this area responded to the feedback survey. Employees provided the following feedback:

- They desire service from their train station, rather than a bus that serves both Lake Forest train stations.
- The service must be reliable for them to use it.
- They requested earlier shuttle service that would connect to trains departing Lake Forest around 3:30 p.m.
- They requested that two routes operate from the Metra MD-N Station similar to the two routes proposed for the Metra UP-N Station.
- They expressed a dislike for school buses currently used on BPTC service.

From prior research on commuter rail shuttles, the employee market can be very difficult to serve from the perception of the rider. There are seven key criteria that contribute to the success of employee shuttles. All of these must be met to maximize the rider acceptance of shuttle services.

- Flexibility – The hours of service and number of trains served must be sufficient to allow employees flexibility in their workday.
- Information – Information must be readily available to potential passengers, including schedule information, signage at rail station, real-time information, and marketing materials.
- Reliability – Shuttles must adhere to schedules and always connect with trains they are designed to serve.
- Travel time – The routing must be the fastest and most direct.
- Comfort – Passenger amenities need to be provided including bus shelters that provide protection from the weather and vehicles that can be considered an extension of the passenger's home or office with comfortable seating, room for storage, Wi-Fi, etc.
- Cost – The cost needs to be competitive to other transportation costs such as parking. Shuttles are often free to the employees.
- Image – The service needs to be branded and marketed so it is perceived as a good option for a choice rider.

The existing shuttle services meet some of these criteria. The BPTC is improving on directness and uses a private contractor that provides a high level of flexibility. The school buses used on the service lower its comfort and image levels. The TMA/Pace service uses higher quality equipment with Pace provided accessible transit coaches. However, the service Pace provides is perceived as being less flexible and provides an indirect routing.

### A. RECOMMENDED SERVICE DESIGN

Strictly from a customer standpoint, services that connect as directly as possible between the train and the office are recommended. Currently, four buses are in operation to provide the services that exist today. A service design that also uses 4 buses and enhances direct connection from the train station to the business parks near the Tri-State Tollway and Route 60 is recommended.



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It is well understood that different groups, with different service priorities are funding services. Since both are concerned about costs, it seems there is a potential opportunity for employers in the corridor to work together to maximize the ability to meet the needs of the commuter. If service is improved forty-five employees responded they would start riding a shuttle, while 67 employees responded they would ride more often than they currently ride. Without improvement in all of the key areas, it is unlikely that commuters will choose public transportation over the automobile.

Four routes are recommended to serve the business parks in the Tri-State Tollway and Route 60 area:

1. Metra/Union Pacific North Line Station to Conway Park
2. Metra/Union Pacific North Line Station to Opus Place, HSBC, CDW, and Grainger
3. Metra/Milwaukee District North Line Station to Conway Park and Opus Place
4. Metra/Milwaukee District North Line Station HSBC, CDW, and Grainger

Each of these fixed routes would be scheduled to meet various arrivals at the Metra stations. The bus would then travel directly to their destinations. By meeting several arriving and departing Metra trains, employees would have some flexibility when deciding when to arrive or depart work. The timed connections with trains would be reliable. Since the bus would travel directly to the Conway Park area without stopping at another station, travel time will be up to 30 minutes shorter.

These recommended routes provide improved service to the Metra/MD-N Station. These employee connections will also help generate ridership if an Amtrak stop is established in Lake Forest.

There are no inbound trains to Chicago on the MD-N between 4:47pm and 7:59pm. This gap in service requires the bus to travel to the Deerfield station for employees residing south of Lake Forest along the MD-N line.

Figure 21 shows the recommended routings from the Metra/Union Pacific-North Line Station to the Conway Park area and Figure 22 shows the recommended routings from the Metra/Milwaukee District-North Station to the Conway Park area. The characteristics of such as hours of service, frequency of service, one-way running time, number of revenue hours are contained in Table 18.

Figure 21: Recommended Service from Metra/UP-N Station to Conway Park Area

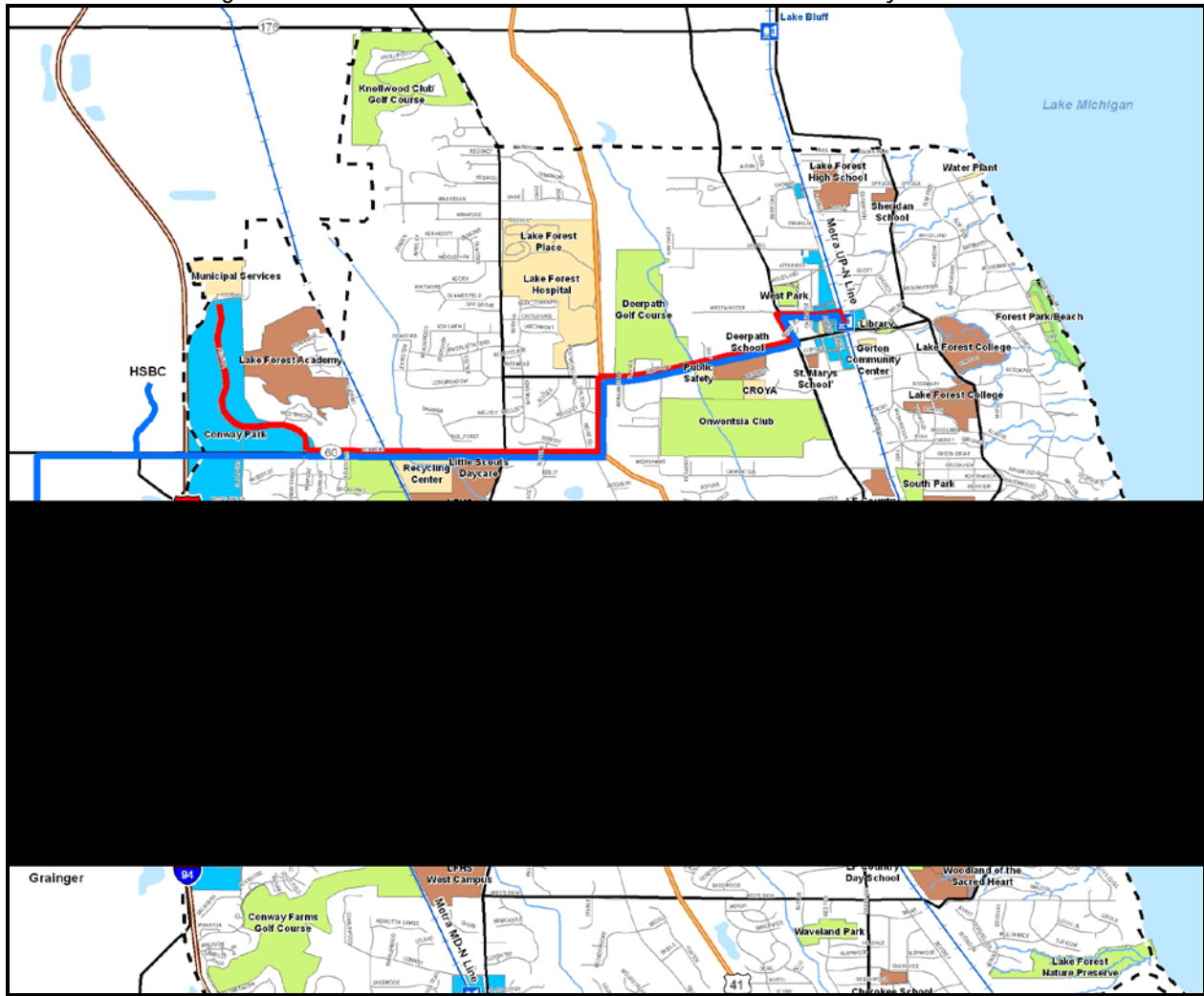


Figure 22: Recommended Service from Metra/MD-N Station to Conway Park Area

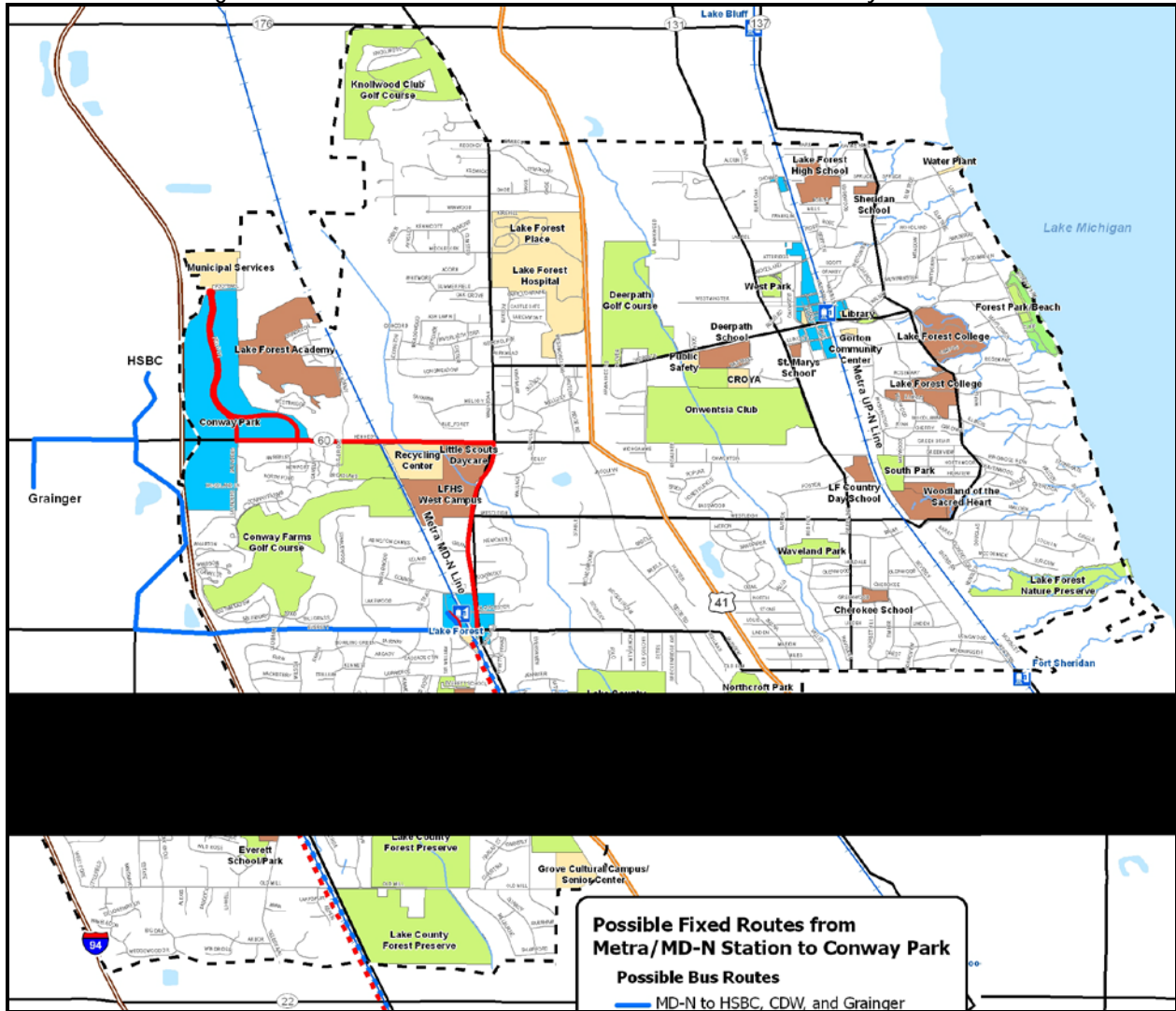


Table 18: Conway Park Area Service Characteristics

	UP-N to Conway Park	UP-N to Opus Place, HSBC, CDW, and Grainger	MD-N to Conway Park and Opus Place	MD-N to CDW, HSBC and Grainger
Hours of Service	Weekdays: 6:30a.m. - 9:05a.m. 2:55p.m. - 6:25p.m.	Weekdays: 6:30a.m. - 9:05a.m. 2:55p.m. - 6:25p.m.	Weekdays: 7:30a.m - 9:05a.m., 2:55p.m. - 7:35p.m.	Weekdays: 7:30a.m - 9:05a.m., 2:55p.m. - 7:35p.m.
Frequency of Service	3 trips in the morning, 4 trips in the evening	3 trips in the morning, 4 trips in the evening	2 trips in the morning, 4 trips in the evening	2 trips in the morning, 4 trips in the evening
One-Way Running Time	24 minutes	30 minutes	21 minutes/ 35 minutes	21 minutes 35 minutes
Vehicles	One	One	One	One
Estimated Annual Vehicle Hours	1,975 hours	1,975 hours	1,890 hours	1,890 hours
Estimated Annual Ridership	23,000 – 35,700	12,-750 – 20,400	5,100 – 10,200	6,375 – 14,000
Estimated Cost Per Hour	\$65 - \$80	\$65 - \$80	\$65 - \$80	\$65 - \$80
Estimated Annual Cost	\$130,000 - \$160,000	\$130,000 - \$160,000	\$123,000 - \$152,000	\$123,000 - \$152,000
Infrastructure Requirements	Dedicated boarding/alighting location at Metra Station	Dedicated boarding/alighting location at Metra Station	Dedicated boarding/alighting location at Metra Station	Dedicated boarding/alighting location at Metra Station
Regional Connections	Metra	Metra	Metra	Metra

### Vehicles

Survey respondents commented that they do not like the school buses currently used by the BPTC. It is recommended this commuter service move towards the implementation of 30-foot transit vehicles. These buses are more comfortable than a school bus and can be considered an extension of the commuters' rail experience. The transit vehicles would have seating designed for adults, better air conditioning and heat, storage place for briefcases or backpacks, and could have racks for bicycles.

The 30-foot buses could be either a medium-duty bus that is built on truck chassis or a heavy duty bus that is designed from the ground up to be a transit vehicle. The cost for these vehicles is between \$100,000 and \$325,000. These vehicles have a service life between 10 and 12 years.

Figure 23: Medium-Duty Bus



Figure 24: Heavy-Duty Bus



### Information

Information must be easily available to employees. Clear and concise information about the service can be provided through websites, newsletters, information booths, signs at train stations, and vehicle signage. Distribution of information is not a one-time event. Information needs to be repeatedly distributed to remind employees of service and provide messages motivating them to try the service.

### Travel Time

The BPTC shuttles enter each employer's property in Conway Park to drop-off or pick-up passengers at an employee entrance. Installing infrastructure that allows stops along Field Drive is encouraged. The infrastructure would include a sidewalk along the west side of Field Drive, sidewalk linkages to the employee entrance, shelters at each stop, and pedestrian crosswalks. Approximately 10 minutes of travel time can be reduced by no longer requiring the bus to serve the employee entrance of each building. The City and Conway Park are currently working together to install these improvements.

### Reliability/Flexibility

In any discussion that take place going forward and any consideration of changes to service, high importance must be placed on the reliability of making the connection between the shuttle bus and the train.

## **B. IMPLEMENTATION**

It is recommended that the shuttle services be retained as stand-alone services, guided, defined, and primarily funded by the employers that benefit from the extension of Metra service to their office buildings. There is not likely to be any coordination with the previously described Lake Forest services. It is recommended that the City become involved in facilitating discussions among current providers. There is a significant history that has led to two separate services being provided. It is hoped that if the City were to work as a facilitator, some common ground may be found to identify a way to operate a shared service and enhance service to commuters.

Table 19 identifies action items, suggested initiators and participants, time frame of implementation, and includes information on resources required or other issues. With regard to the time frame, "short term" is considered within one year after the Plan is adopted, "midterm" is considered within three-five years of after the Plan is adopted, and "long term" is considered beyond five years.

**Table 19: Business Park Service Implementation Matrix**

<b>Category</b>	<b>Action Item</b>	<b>Initiators/Participants</b>	<b>Time Frame</b>	<b>Resources Required/ Comments</b>
BUSINESS PARK SERVICE	Approve Plan	City Council	Short Term	
	Organize an Implementation Committee	City staff, BPTC TMA of Lake Cook Pace Current BPTC Operator	Short Term	Should meet on a regular basis to set policy, provide direction, and secure funding
	Improve services to business parks	City staff Service Operator Implementation Committee Business Park Employers	Short Term to Mid Term	Work towards common ground to identify a way to operate a shared service and enhance service to commuters.
	Switch to 30-foot transit vehicles	Service Operators Implementation Committee Business Park Employers	Mid Term to Long Term	Work toward using equipment that provides amenities similar to other portions of the commuters' trip.

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## VIII – Other Infrastructure Elements

### A. THE CONNECTION BETWEEN LAND USE, STREET DESIGN, AND TRANSIT

Land use and transit are interrelated. An environment which is pedestrian-friendly is also transit friendly. Environments which have been designed to allow for walking or biking tend to provide good access to transit. Streets that have shorter block lengths and have a series of connected streets offer the pedestrian a more direct route to transit stops than streets with cul-de-sacs, dead ends, long blocks, and circular patterns. Continuous wider sidewalks that are shaded for hot summer days, well-lit for non daylight hours, and separated from motor vehicle traffic are critical. Ease of street crossings, and intersections with shorter traffic signals and pedestrian crossing signals help create an accessible safe environment that is geared to pedestrian use. Street furniture (for example, benches), decorative light fixtures, street banners, signage, and landscaping elements also make the atmosphere more amenable to walking. Good pedestrian design should account for the needs of all potential users, including those with physical or mental limitations; this design concept is known as “universal design” and ensures that the built environment is usable and can be shared by all people.

Land use policies that promote compact development reduce reliance on the automobile, encourage transit and protect open spaces. Street-oriented buildings that make pedestrians feel less isolated and more comfortable with the distance to the building entrances should be required as part of the zoning and design ordinances. Commercial building entrances should be oriented to plazas, parks or pedestrian-oriented streets, rather than interior blocks or parking lots. Building setbacks should be reduced and standardized to provide closure of the street space and to establish a consistent building line. Parking regulations can be modified to encourage parking lots behind buildings and to reduce the total number of spaces required in order to encourage public transit use. Shared parking agreements can help reduce the number of parking lots which provide barriers for pedestrians and create a less secure and pedestrian friendly environment. Zoning regulations can be changed to require these amenities in transit corridors.

#### 1. Existing Land Use Conditions

In general, land use in Lake Forest east of U.S Route 41 is conducive to pedestrians and bicycles, making the access to existing and future transit services relatively good. Streets are interconnected, tree lined, and have continuous sidewalks typically on both sides of the streets. The majority of the land use is residential. Most streets have low traffic volumes, and those streets that have greater traffic volumes, such as Deerpath Road or Sheridan Road, are narrower and have adequate parkways that separate the pedestrian from the traffic, allowing for pleasant walking conditions.

A one-half mile distance around the Lake Forest Union Pacific-North Line Station was examined as this is typically the distance passengers are willing to walk in order to access transit. On the west side of the tracks there are continuous sidewalks on both sides of the streets leading to the central business district and the Metra station. The central business district is attractive with retail stores on the ground level and streetscape features, making it ideal to walk. The area is well lit and safety is no problem for pedestrians. On the east side of the tracks, the street layout is more circuitous, although most streets are interconnected. Sidewalks are located on at least one side of the street.

In general, west of U.S. Route 41, the land use is not as conducive to pedestrians and bicycles. Land uses tend to be separated from each other and separated by major arterial streets and highways including U.S. Route 41, IL Route 60, and I-94. More commercial uses are located in West Lake Forest and parcels tend to be larger with buildings set back from the street. In some locations there are no sidewalks. Some roadways are wider and carry greater volumes of traffic.

The street design and types of land use within the half mile area around the Metra Milwaukee District North Line Station area is not as conducive to walking to the train station as is true for the UP North Line Station. Large lot

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commercial land uses that are set back from the street compose most of the land use around the station. The parking lots on both sides of the station provide a barrier to pedestrian access. Although sidewalks are present, the characteristics of Waukegan Road, a major arterial, is not very appealing to pedestrians or bicyclists.

Conway Business Park, at I-94 and IL Route 60, is also an area that is not pedestrian or transit friendly. Isolated from the surrounding neighborhoods and separated by an expressway (I-94) and a major arterial roadway (IL Route 60) there is very limited or non-existent pedestrian or bicycle access. Internally, the design of the business park is not conducive to transit. Entrances to most buildings are off parking lots or not conducive to a potential transit stop. Sidewalks between buildings are separated by large expanses of surface parking lots and driveway entrances making it difficult for passengers to get to a localized transit stop. There are no transit facilities to protect passengers from the weather. Improvements to make Conway Business Park more conducive to transit however, are underway. Additional sidewalks and pedestrian linkages from building entrances are being constructed.

## **2. Existing Bikeways**

There are several existing off-street bikeways that either currently or if extended, could provide connections to proposed or existing transit stops. The Robert McClory Bike Path, an extension of the Green Bay Trail which begins in Wilmette to the south, passes on the east side of the Metra UP Line tracks, and extends north into Wisconsin, connecting to the Kenosha County Bike Trail. This bike trail easily provides access to the Metra UP station, the downtown area of Lake Forest, and the neighborhoods surrounding the downtown. The Robert McClory Bike Path connects to the North Shore Bike Path, an east-west path, at IL Route 176, in Lake Bluff. West of Lake Forest, the North Shore Bike Path provides a connection to the Des Plaines River Trail located west of Interstate-94. The North Shore Bike Path also has a north-south leg extending from IL Route 176 to just north of IL Route 60. The Des Plaines River Trail is a north-south continuous trail through Lake County from the Illinois/Wisconsin border on the north to Lake Cook Road on the south.

To the west of the McClory Bike Path along U.S. Route 41 is the Skokie Valley Trail. The Skokie Valley Trail runs from Highland Park on the south north through Lake Forest to IL Route 176. The trail is built on a ComEd right-of-way. There is an overpass at Half Day Road (IL Route 22).

The Middlefork Savanna and Bike Path is located just east of Route 43, north of IL Route 60. A planned extension to this path, the Middlefork Greenway, would extend the path north to connect to the Des Plaines River Trail at IL Route 120 (Belvidere Road) and south to provide a connection to the Prairie Wolf Forest Preserve near Highland Park.

The Illinois Department of Transportation (IDOT) has identified streets on their Bicycle Map that are more conducive as bike routes. IDOT classifies the routes on a scale from "caution advised" to "most suitable for biking". The streets in Lake Forest that are designated as bike routes include 1) Deerpath Road from IL Route 43 to Sheridan Road; 2) Westleigh Road between U.S. Route 41 to Sheridan Road; 3) Sheridan Road between Westleigh to north of Deerpath Road; 4) IL Route 60 between IL Route 43 and I-94; 5) U.S. Route 41 north of IL Route 60; 6) Old Elm Road between I-94 and Sheridan Road; and 6) Telegraph Road, south of Old Elm Road. Some or parts of these roads are designated by IDOT as "caution advised" indicating that they are only appropriate for the most experienced riders. These on-street routes provide connections from the Skokie Valley Trail, the existing Middlefork Savannah Trail, and the Robert McClory Trail into the neighborhoods and existing or proposed transit stops east of IL Route 43.

## **3. Improving Transit Linkages**

Proposed bus stops should be accessible by sidewalks and have appropriate facilities to protect passengers from the elements. Traffic calming measures and pedestrian amenities on busier streets leading to the transit stops should be put in place to allow for a more pleasant walking atmosphere. This includes street trees, pedestrian crosswalks, pedestrian signals, pedestrian bumpouts, wider parkways, and continuous sidewalks in areas where these amenities are not present. In Conway Business Park and in other commercial areas, new pathways leading from the main entrance of the buildings to the transit stop should be considered.



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In order to improve transit linkages in all areas of the City, it is recommended that the City:

- Examine the zoning ordinance and land use policies to make sure that they are promoting compact development that is pedestrian friendly and will accommodate transit well in the future; this includes the appropriate placement of commercial building entrances; reduced building setbacks and parking lots behind the building
- Develop or update transit-oriented development polices to ensure adequate pedestrian facility design, including sidewalks, pedestrian crossing facilities, and warning and wayfinding signs near existing or proposed transit stops
- Provide developers with development guidelines and standards prior to any project's design phase to ensure that the development is pedestrian friendly
- Work with roadway owners (Lake County or IDOT) to determine transit stop locations and passenger access facilities in order to accommodated all modes of travel
- Construct or enhance sidewalks and pedestrian crosswalks near existing or proposed transit stops; this includes marked crosswalks, median crossing islands, warning signs, and pedestrian signals
- Update intersection signalization if appropriate to facilitate safer pedestrian crossings
- Regularly maintain pedestrian facilities to make sure they are clear of obstructions and do not pose tripping hazards
- Install on street pavement markings to signify designated bike routes
- Provide pedestrian amenities along transit routes including benches, shelters, signage, landscaping, water fountains and other amenities

The following checklist should be followed when constructing new access routes:

- Pathways leading to and from the bus stop areas should be level and have firm surfaces to accommodate passengers with different abilities
- Passenger shelters should be appropriately designed and placed for pedestrian safety and convenience. A concrete pad should be provided for a firm, dry standing area.
- The sidewalk connection should be free of temporary or permanent obstructions that construct its width or block access to the bus stop
- Safe pedestrian crossings need to be in place; this includes well marked crosswalks and pedestrian signals as appropriate
- Access ways to transit facilities should be well lit

An example of an appropriately designed bus stop is shown in photo 1 below. Sidewalks lead to the stop. The stop contains a passenger shelter and signage. A concrete pad is placed under the shelter and provides a connection to the street where the passenger will board the bus. Photos 2 and 3 do not show well designed bus stops. In photo 2, there are no sidewalks leading to the bus stop which is located on a busy, very pedestrian unfriendly road. Photo 3 is an example of a bus stop without a shelter or concrete pad. The passenger would need to wait on the grass or possibly muddy conditions, without protection from the elements.



Photo 1- Good example of sidewalk leading to concrete pad



Photo 2- Example of a concrete pad with no sidewalk access



Photo 3 – Example of bus stop with no concrete pad

Once a bus stop is in place, it is very important that the property owner or City continues to maintain the stop. The City should consider continuously monitoring the pedestrian linkages during periods of inclement weather to make sure that the routes are accessible and snowplowed. The City should have an annual budget line item to make improvements to sidewalks and concrete pads at dedicated bus stops

## B. PROPOSED OPERATIONS AT METRA STATIONS

### 1. Milwaukee District North Line

Traffic operation during the morning peak period at the Lake Forest Milwaukee District North Line Metra Station was observed as running smoothly without internal parking lot congestion or any noticeable operational issues. It is anticipated that traffic operations in the evening peak period would not differ significantly.

The main parking lot at the station, which has parking spaces for 557 vehicles, was observed as being approximately 70% utilized as the morning peak period was approaching its end. BPTC buses were observed utilizing a designated staging area along Telegraph Road where the main entrance to the parking lot on the west side of the Metra tracks. There appeared to be ample space for the buses to use this area without negatively impacting the operational characteristics of the Metra station parking lot. As trains pulled into the station, buses would leave their staging area, pull to the drive in front of the stationhouse, board passengers, and depart for Conway Park and adjacent business parks. While the boarding area in front of the stationhouse may not be specifically designated as a bus boarding area, the operation of the parking lot and intensity of the parking lot's traffic was such that the boarding procedure for the BPTC buses was the primary traffic operation and could operate without interference of any other aspect of the parking lot traffic operation. Abbott buses were observed staging in the south portion of the parking lot. As trains pulled into the station, Abbott buses would pull up to the curb area south of the station. It is recommended that Abbott buses also stage along Telegraph Road.

The parking lot still has available capacity and the current staging operation of the buses appears to work well based on observations, no immediate improvements to the Lake Forest Milwaukee District North Line Metra Station parking lot are recommended from a traffic perspective. Given the approximate 70% utilization of the parking lot, there is also sufficient room for future growth in terms of station usage without the concern of a drastic decrease in the efficiency of the parking lot's traffic operations.

On the east side of the Metra railroad tracks, a circular drive exists where additional passenger drop-offs can occur. Minimal traffic performing this procedure was observed during the morning peak period. This drive is suitable for the proposed services to access the station since small transit vehicles are recommended for these services. A suitable

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staging area for buses to use when waiting for train passengers to arrive at the station on the east side of the railroad tracks at this train station will need to be established. Adjacent properties to the circular drive include a fast-food restaurant and bank, which may generate additional congestion in the circular drive causing an efficiency concern for bus boarding and alighting procedures.

## **2. Union Pacific North Line**

Traffic operation during the morning peak period at the Lake Forest Union Pacific North Line Metra Station in downtown Lake Forest was observed as running smoothly without congestion in the station's parking lots or along the adjacent roadways. There were no noticeable operational issues. The main Metra station parking lots are on the east side of the railroad tracks, where the main stationhouse is also located. A smaller secondary stationhouse is present on the west side of the tracks directly across from the main station house and houses private offices.

Immediately west of the Metra station, on the west side of Western Avenue, is a pedestrian-friendly shopping district known as Market Square, which houses a variety of restaurants and specialty shops. While a few of the restaurants were open for business during the morning peak period, the majority of the businesses were not open and appeared to generally operate from mid-morning through late evening. Due to few businesses being in operation, very little associated vehicular traffic was present in the downtown area to conflict with the minimal vehicular traffic associated with the Metra station. Angled on-street parking is provided on Western Avenue for the downtown area, primarily from Deerpath Road on the south end to Woodland Road on the north end. Directly in front of the stationhouse on the west side of the railroad tracks, no parking lane is provided and there is only one lane in either direction. All observed parking was primarily vacant during the morning peak period.

BPTC buses were observed staging in the angled parking on the east side of Western Avenue from Deerpath Road to the smaller stationhouse on the west side of the railroad tracks, which is a parking area approximately 300 feet in length and comprised of 24 parking spaces. Buses initially staged closer to Deerpath Road. As trains stopped at the station, the buses would advance northward closer to the stationhouse, board passengers, and depart for Conway Park. No vehicles were observed parked in the angled parking that the buses were using for their operation, although no signage or other restrictions were observed to prevent a vehicle from possibly parking in one of the spaces and restricting the bus staging and boarding procedure.

Considering the morning peak period observations only, a recommendation to help define the BPTC staging and boarding procedure would include signage to restrict parking in the angled spaces during the morning peak period. Additional signage would help define the area as bus parking only. Parking restrictions are not needed in the evening peak period since buses do not stage at the station – they only stop at the station to allow passenger to get off the bus.

To accommodate small transit vehicles for the proposed services, it is recommended that 150 feet of parking, or approximately 12 angled parking spaces, be restriped and signed as a permanent bus staging, boarding, and alighting area. The loss of parking in terms of total parking available is minimal, since several hundred spaces are provided along Western Avenue.

Another bus boarding and alighting area was considered in the parking lot east of the railroad tracks. The parking lot's current layout does not adequately provide a suitable location for a bus to stage as it waits for the passengers to arrive on trains. The parking lot has a one-way thoroughfare from Deerpath Road to Westminster Avenue. As the thoroughfare passes the entrance to the stationhouse on the east side of the railroad tracks, it is restricted in width by the presence of two bank drive-through lanes east of it. The bank is currently operated as part of the Metra station's stationhouse. Given the compact operation of the parking lot along with the bank drive-through lanes, introducing a bus staging area and boarding/alighting procedure is not advised from both a safety and operational standpoint. In addition, proper staging of buses would require that some of the existing parking spaces within the parking lot be

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removed and the parking lot be reconfigured. Rather than pursue this option, it is recommended that all business park bus operation be implemented on the west side of the Metra station, along Western Avenue.

### **C. IMPLEMENTATION**

Table 20 identifies action items, suggested initiators and participants, time frame of implementation, and includes information on resources required or other issues. With regard to the time frame, "short term" is considered within one year after the Plan is adopted, "midterm" is considered within three-five years of after the Plan is adopted, and "long term" is considered beyond five years.

Table 20: Infrastructure Implementation Matrix

Category	Action Item	Initiators/Participants	Time Frame	Resources Required/ Comments
INFRASTRUCTURE ELEMENTS	Approve Plan	City Council	Short Term	
	Organize an Implementation Committee	City staff, Residents Representatives from the senior and disabled communities Potential funding partners Employers	Short Term	Should meet on a regular basis to set policy, provide direction, and secure funding
	Identify locations/ need for passenger amenities	Implementation Committee City Manager Community Development Public Works	Short Term to Mid Term	Pedestrian amenities include sidewalks, marked crosswalks, passenger shelters, lighting, pedestrian signals, information kiosks, bicycle racks, etc.
	Identify on-street bikeways that lead to transit stops	Implementation Committee City Manager Parks and Recreation Community Development Public Works	Short Term to Mid Term	Determine which streets are most appropriate for bike lanes and signage
	Install parking restriction signs and move all business park buses to the Western at the Metra/UP-N station.	City Manager Public Works	Short Term	In addition to locating all buses in the same area, signage directing passenger to the buses is recommended.
	Identify suitable bus staging location on the eastside of the Metra/MD-N Station	City Manager Public Works	Short Term to Mid Term	In addition to determining a suitable staging area, signage directing passengers to the buses is recommended.
	Install pedestrian amenities as identified	Public Works	Mid Term to Long Term	Ongoing as funding becomes available Include amenities in City's Capital Improvement Plan
	Monitor the condition of transit stops	Public Works	Mid Term to Long Term	Ongoing all year long; remove snow and ice on a regular basis; monitor condition of sidewalks, on street bikeways, passenger shelters, etc.

