Illinois Routes 22/60
Shuttle Feasibility Study

Final Report

Submitted to:
Transportation Management Association
of Lake-Cook

Submitted by:
Fish Transportation Group, Inc.
with
TranSystems Corp. (formerly Multisystems)

August 2000

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This project was funded through the Regional Transportation Authority's Regional Technical Assistance Program.

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EXECUTIVE SUMMARY

This Executive Summary Report has been prepared as part of the Illinois Route 22/60 Shuttle Feasibility Study, conducted for the Transportation Management Association of Lake-Cook (TMA), while coordinating with the Regional Transportation Authority (RTA), Metra, and Pace. The project was funded through the RTA's Regional Technical Assistance Program (RTAP) which is designed to provide assistance to municipalities and other local organizations in planning efforts to increase transit usage.

Key Findings

Overall, this evaluation of the feasibility of employer-sponsored shuttles indicate some opportunity to pursue implementation. Other key findings from this study include:

- Approximately 34% of the surveyed employees live in zip codes along the commuter rail corridors, excluding the very close-in zip codes.
- About 68% of the survey employees are making a "suburb-to-suburb" commute from the north. About 32% were making a "reverse commute", meaning they were traveling northbound away from the City of Chicago in the morning.
- Reverse commuters have a much higher tendency than suburb-to-suburb commuters to use shuttle services because of variability in travel times and possibly proximity to the origin rail station.
- Short travel times and direct service were identified as key characteristics of any proposed shuttle service.
- From the ridership estimates, the employee populations, identification of an "anchor employer" who could generate a significant percentage of the potential ridership, and the travel time analysis, it was determined that zones 1, 2, and 3 had the greatest potential to support a shuttle service to the UP-North line.
- Based on available funding and employer support, it is recommended that Phase I should begin with Zone 1. Phase 2 could include employers from either zones 2, 3, or 4, and would depend on financial support from employers and negotiations with Pace and Metra for funding the cost of shuttle services.

Introduction

The goal of the Illinois Routes 22/60 Shuttle Feasibility Study was to examine opportunities to improve mobility in the Routes 22/60 corridors through the implementation of shuttle service connections to commuter rail service. An advocate of public transportation, the TMA has successfully provided a link between transportation providers and employers in this area, as is evident in the success of the Lake-Cook Shuttle Bug. The employers in this area also know the value of public transportation as a means not only to reduce travel time and congestion for their employees, but as a means of expanding their job market. This was also evident from the Lake-Cook Shuttle Bug, where almost half of the ridership is "reverse commuters" traveling from the City of Chicago to the Lake-Cook corridor.

The Route 22 and 60 corridors have a similar opportunity. With Metra service provided via two commuter rail lines, the UP – North and the Milwaukee District – North, and the presence of employment clusters, potential exists for another highly successful shuttle service. The key factor for the Lake-Cook Shuttle Bug service, however, was the commitment and involvement of

the corridor employers. A similar level of commitment and involvement will be a key factor in the success of a shuttle service in the Route 22/60 corridors.

Existing Conditions

The first steps in the study were to identify the employers and number of employees within the corridors as the potential market for a shuttle service and to identify what existing transit services are available. A comprehensive list of employers was identified within approximately ½ mile on both sides of the Route 22 and 60 corridors with the Metra North Central Service line as the western boundary. Within this study area, employers with 50 or more employees were identified. Smaller employers (those with less than 50 employees) were excluded.

Three types of transit service are provided in the study area: Metra commuter rail, Pace bus, and employer-provided shuttle service. Pace routes 895 and 626 were in place at the beginning of the study. Three employers provide shuttle service to their employees: Hewitt, Trustmark, and Packaging Corporation of America (PCA), which also serves employees from Pactiv and Tenneco.

Metra commuter rail service is provided on three lines in the study area: UP – North Line (UP-N), with nearby stations in Lake Bluff, Lake Forest, and Highland Park; Milwaukee District – North Line (MD-N), with nearby stations located in Lake Forest and Deerfield; and, North Central Service (NCS), with the nearby Prairie View station. The NCS line was not included in this study due to the limited amount of service provided at this time.

Employee Survey

An employee survey was conducted to develop an information base of the employees in the study area and determine the market potential for a shuttle service. Employers with 50 or more employees were contacted to participate, with 25 companies responded affirmatively, representing almost 21,000 employees. This is approximately 73% of the "universe" of employees. Each employer was then asked to identify the number of employees living in zip codes along either the Milwaukee District North Line or the UP North Line. Only these employees were to be surveyed, as they would have access to Metra commuter rail service near their home.

Results

- Approximately 34% of the surveyed employees live in zip codes along the commuter rail corridors, excluding the very close-in zip codes.
- About 68% are making a "suburb-to-suburb" commute from the north. Although this travel is in the "peak direction", meaning traveling southbound towards the City of Chicago in the morning, they are traveling from a northern suburb to a work destination in the Routes 22/60 corridors.
- About 32% were making a "reverse commute", meaning they were traveling northbound away from the City of Chicago in the morning.

- Of this 32%, just over 2/3 were traveling from zip codes in the City of Chicago and approximately 1/3 were traveling from suburbs south of the Routes 22/60 corridors.
- Of those who do use commuter rail for their work trip, about 60% use the UP-North line and 40% use the Milwaukee District-North line. Lake Forest (downtown) and Highland Park were the preferred stations along the UP-North line. Deerfield and Lake Forest (west) were the preferred stations along the Milwaukee District-North line.

Survey Data Analysis

Survey data was analyzed by several different breakdowns to assist in the estimation of ridership. Analyzing the stratified data, several observations can be made:

- Reverse commuters have a much higher tendency than suburb-to-suburb commuters to use shuttle services because of variability in travel times and possibly proximity to the origin rail station.
- PM travel times of reverse commuters are significantly higher than their AM travel times, a pattern not seen in suburb-to-suburb commuters travel time, which would result in higher ridership estimates for those making a reverse commute.
- People who work for firms that have shuttle services view them more positively than people who work for firms that do not sponsor shuttle services.
- Short travel times and direct service (to the employers front door) were identified as key characteristics of any proposed shuttle service.

Service Plan Development

Employment Zones

Because of the size of the study area, it was divided into five employment zones. These zones, based on employment clusters identified from Task 1, are as follows:

Zone 1	Route 60/Tri-State	Zone 4	Route 22/Milwaukee
Zone 2	Route 22/Tri-State	Zone 5	Mid-Milwaukee
Zone 3	Route 60/Milwaukee		

Ridership Estimation

In order to estimate the shuttle ridership potential in each of the five employer zones, a mode split range was determined for each zone. The mode split range represents – on one end a conservative estimate and on the other an optimistic estimate - of the number of people that may choose to use an employer shuttle to access their work site. The mode split was applied to the estimated number of people that have their residence in an area that is served by the UP-North line or the Milwaukee-North line and also reside far enough away to consider using an auto alternative.

Recommendations

From the ridership estimates, the employee populations, identification of an "anchor employer" who could generate a significant percentage of the potential ridership, and the travel time analysis, it was determined that zones 1, 2, and 3 had the greatest potential to support a shuttle service to the UP-North line. Zone 4 has similar ridership potential to zone 3, but has higher travel times – times that appear to exceed the travel time thresholds identified through the

employee survey (approximately 15 – 20 minutes). Zone 5 has the highest travel time and lowest ridership potential. The UP-North has the highest ridership (60%) compared to the Milwaukee District North line (40%). Therefore, it was agreed that shuttle concept plans would be prepared for zones 1, 2, 3, and 4 to connect to the UP-North line.

New travel time runs were conducted from zones 1 through 4 to the closest station on the UP-North line – either downtown Lake Forest or Highland Park. In addition to the travel time between the station and the zone, internal travel times were also taken, which in some cases was as much or more than the direct travel time.

Secondly, the train schedules were reviewed for both northbound and southbound, and for both A.M. and P.M peak periods. Given that a shuttle would need to arrive about 5 minutes prior to the P.M. train, potential schedules were prepared.

It is to be noted that the service plans for zones in the Route 22/60 corridors are conceptually different than the existing service provides in the Lake-Cook corridor. The proposed shuttle service levels in the 60/22 corridors are not as frequent as the Lake-Cook Shuttle Bug and the travel times are generally longer with total travel times including travel to station, internal circulation, and loading/unloading at times exceeding 40 minutes as opposed to a 15 – 20 minute trip in the Lake-Cook corridor. Ridership levels also reflect the difference in service levels with projected levels of daily riders ranging from a low of 12 – 30 in Zone 5 to 60 to 100 riders in Zone 1.

Phasing

Response from employers has been strongest in Zone 1. There has been some interest, although limited, in zones 2, 3, and 4. Based on available funding and employer support, it is recommended that Phase I should begin with Zone 1. Phase 2 could include employers from either zones 2, 3, or 4, and would depend on financial support from employers and negotiations with Pace and Metra for funding of the shuttle services. The TMA would play a key role in coordinating the service development, marketing, and implementation of this service.

Most likely the shuttle proposals and the phasing of the service implementation are interim solutions for employees, particularly those located on or adjacent and west of Milwaukee Avenue in Vernon Hills and Lincolnshire. When Metra completes the double tracking of the North Central Service in 2005 and service is expanded from 10 to 22 trains daily, shuttle service will be much more convenient in these areas and the TMA will most likely work with Pace, Metra, and employers to initiate shuttle service accessing stations on the North Central Line.

Summary

This evaluation of the feasibility of employer-sponsored shuttles indicate some opportunity to pursue implementation. The opportunities are more limited than has been experienced in the Lake-Cook Corridor, due to two key factors:

1. distance, and therefore travel time, between the Metra stations and employment sites, and
2. few “anchor companies” and a greater number of small to mid-sized companies located in large business parks.

There are several existing, successful private shuttles currently in operation within the study area. The experience with these services suggest that the largest market for shuttle riders is employees traveling in the reverse commute direction because they experience the greatest level of congestion, especially during the evening commute home.

Implementation of an initial shuttle service should be pursued with the employers in the vicinity of Route 60 and the Tri-State, with subsequent phasing of service to Zone 2, followed by Zones 3 and 4.

Next Steps

Initiation of shuttle service will require close coordination of all parties. Following conclusion of this study, the TMA should continue working with employers in Zone 1 to secure their financial support. The TMA should also continue to be the liaison between Pace, Metra, and the employers. Once the specific employers are identified for stop locations, Pace should conduct detailed route and schedule design between these locations and Metra stations. The TMA should prepare an estimated 2-year budget with levels of funding required by the employers and Metra. Similar to the Lake-Cook Shuttle Bug, the TMA should solicit the employer contributions. Metra has committed to providing start-up funds using their Access to Jobs funds and should initiate their process for allocating these funds.

1.0 INTRODUCTION

Nationwide the balance between the amount of office space in the central cities and that in the suburban areas has been shifting towards the suburbs. Where downtown employment and suburb-to-central city commutes once dominated the commute market, suburb-to-suburb and reverse commutes are seeing increasing percentage shares. Today, the dominant commuting flow pattern is suburban, with 50% of the nation's commuters living in suburbs and over 41% of all jobs located there, up from 37% in 1980. Suburb-to-suburb commuting accounted for 44% of commuting flows in 1990. Reverse commuting, which had an 8% share in1990, accounted for 12% of the total increase in commuting.[1]

Traditional transit services have had a difficulty serving these suburban markets, given the low density residential development, high levels of automobile ownership, and free parking. However, in some cases, suburban employment centers are located near – but not within walking distance – of commuter rail stations. Connector bus service to link the commuter rail stations with these employment clusters is a viable alternative to the automobile and make transit more attractive.

The goal of the Illinois Routes 22/60 Shuttle Feasibility Study was to examine opportunities to improve mobility in the Routes 22/60 corridors through the implementation of shuttle service connections to commuter rail service. An advocate of public transportation, the TMA has successfully provided a link between transportation providers and employers in this area, as is evident in the success of the Lake-Cook Shuttle Bug. The employers in this area also know the value of public transportation as a means not only to reduce travel time and congestion for their employees, but as a means of expanding their job market. This was also evident from the Lake-Cook Shuttle Bug, where almost half of the ridership is "reverse commuters" traveling from the City of Chicago to the Lake-Cook corridor.

The Route 22 and 60 corridors have a similar opportunity. With Metra service provided via two commuter rail lines, the UP – North and the Milwaukee District – North, and the presence of employment clusters, potential exists for another highly successful shuttle service. The key factor for the Lake-Cook Shuttle Bug service, however, was the commitment and involvement of the corridor employers. A similar level of commitment and involvement will be a key factor in the success of a shuttle service in the Route 22/60 corridors.

[1] "Commuting in America II: The Second National Report on Commuting Patterns and Trends, Eno Transportation Foundation Inc., Lansdowne, VA ©1996."

2.0 EXISTING CONDITIONS

The first steps in the study were to identify the employers and number of employees within the corridors as the potential market for a shuttle service and to identify what existing transit services are available. Each is discussed below.

2.1 Employer Database

The goal of this task was to develop a comprehensive list of employers within approximately ½ mile on both sides of the Route 22 and 60 corridors with the Metra North Central Service line as the western boundary. Figure 1 shows aerial views of both corridors. Within this study area, employers with 50 or more employees were identified. Smaller employers (those with less than 50 employees) were excluded. Not only are these businesses much more difficult to identify, with a smaller employment pool to draw from, they do not generate the volume of transit riders needed to sustain a shuttle service. Based on experience learned from the Lake-Cook Shuttle Bug service, the smaller companies are more difficult to offer front door or very close service while maintaining low travel times to and from the train station.

As a starting point, an initial list provided by the TMA was used. Chambers of Commerce and municipalities were also contacted to obtain information on employers and numbers of employees. With these sources as a base, extensive field work was conducted to locate additional employers. The information collected is included in Appendix A. Figure 2 shows the distribution of these companies.

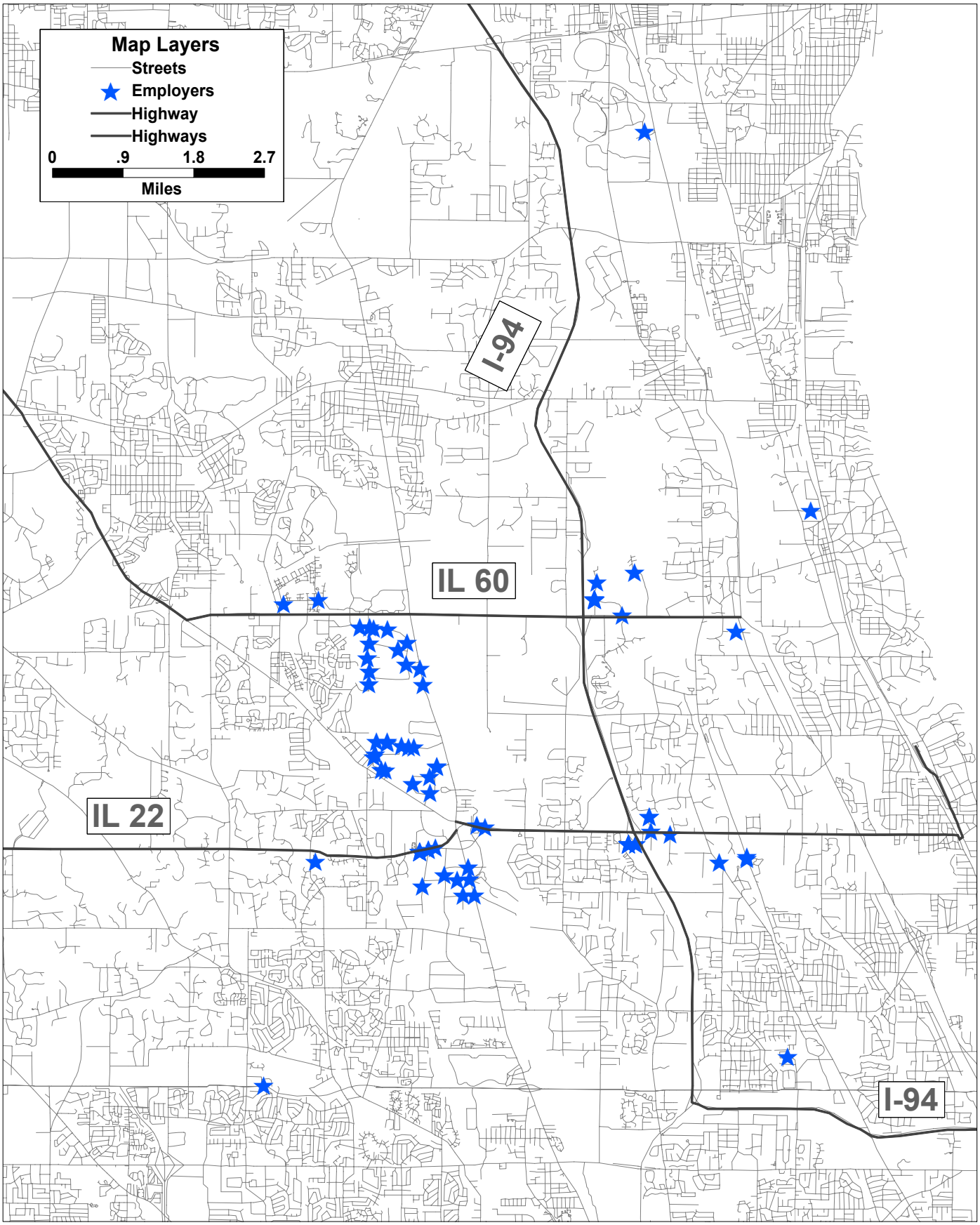
2.2 Existing Transit Services

Three types of transit service are provided in the study area: Metra commuter rail, Pace bus, and employer-provided shuttle service. Figures 3 and 4 show the Pace bus and employer-provided shuttle service. Pace routes 895 and 626 were in place at the beginning of the study. However, Route 894 was discontinued on January 14, 2000 after two years of service, due to low ridership. There are three employers that provide shuttle service to their employees: Hewitt, Trustmark, and Packaging Corporation of America (PCA), which also serves employees from Pactiv and Tenneco. Table 1 summarizes the employer-provided services.

Metra commuter rail service is provided on three lines in the study area: UP – North Line (UP-N), with nearby stations in Lake Bluff, Lake Forest, and Highland Park; Milwaukee District – North Line (MD-N), with nearby stations located in Lake Forest and Deerfield; and North Central Service (NCS), with the nearby Prairie View station. The NCS line was not included in this study due to the limited amount of service provided at this time. Table 2 shows the current train times in the A.M. and P.M.

Figure 1 Study Area Map

Figure 2
Distribution of Employers



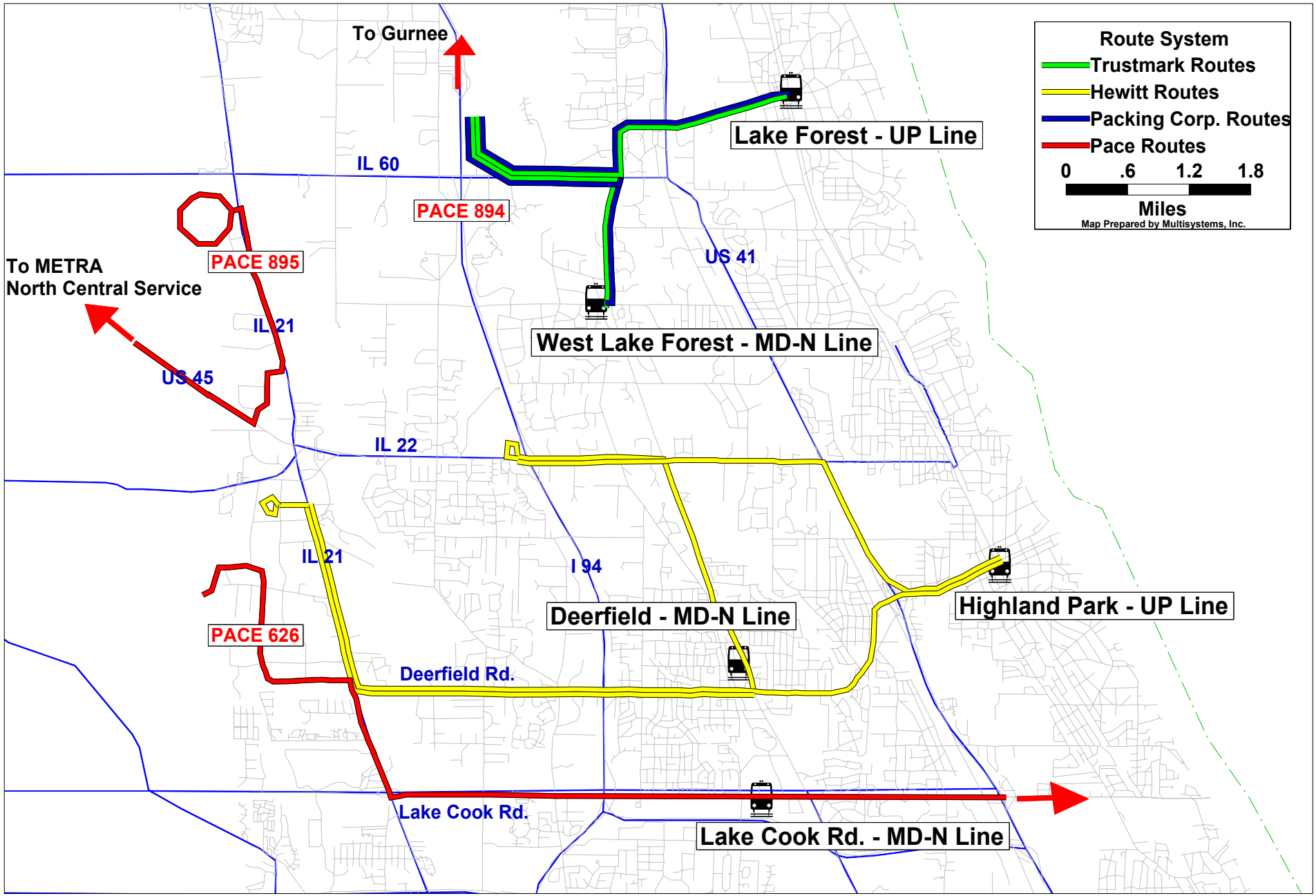


Figure 3
Existing Bus Service - AM Service

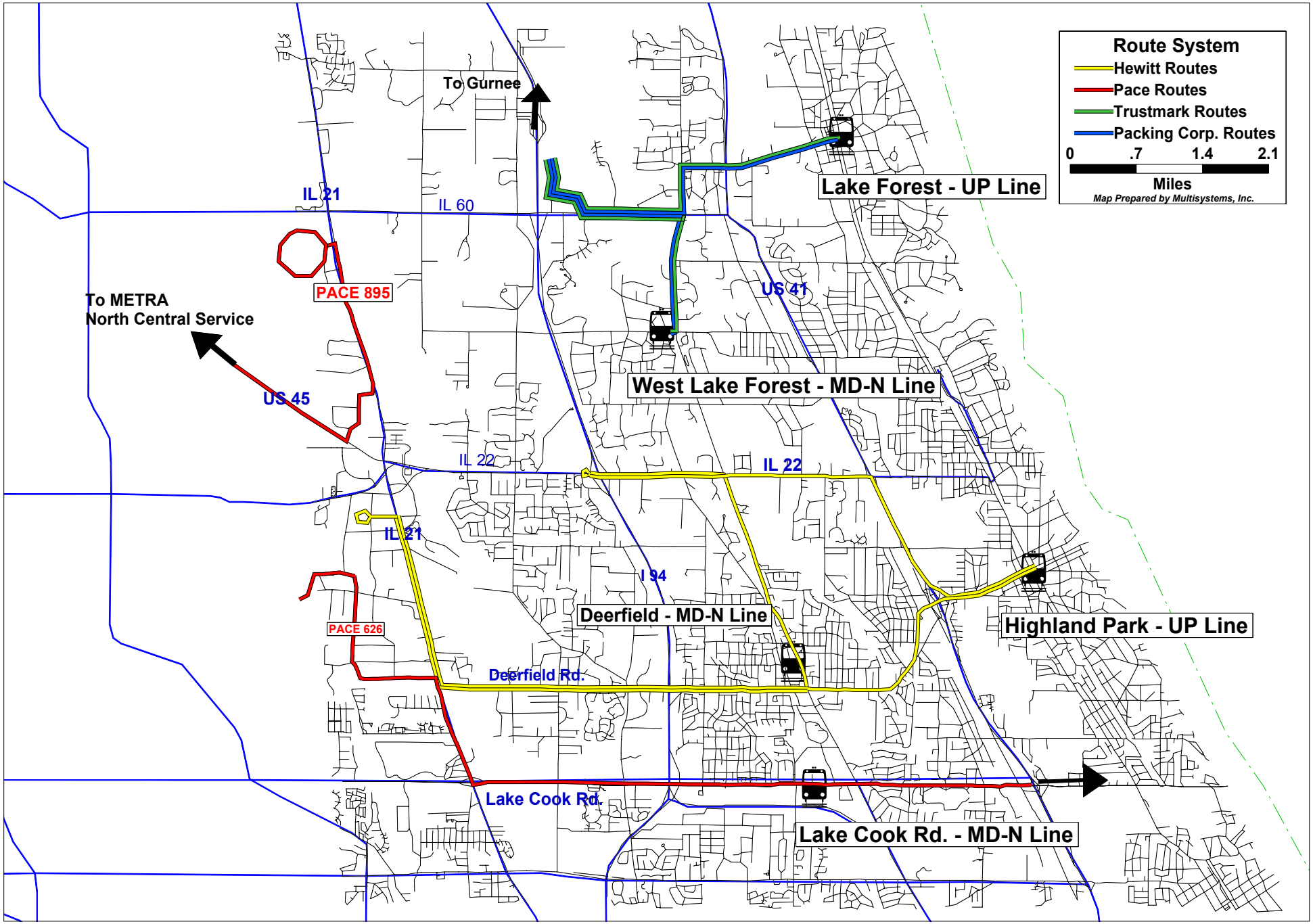


Figure 4

Existing Bus Service - PM Service

Table 1
Private Shuttle Services

COMPANY	CAMPUS	A.M. SERVICE	A.M. METRA TRAINS (O/B)	P.M. SERVICE	P.M. METRA TRAINS (I/B)	APPROX. WEEKLY TRIPS	A/M. ROUTE/ REMARKS[1]
Hewitt							
Route 1	East	Deerfield	7:22/8:12	Deerfield	5:56/6:47		IL 43-IL 22
Route 2	East	Highland Park	7:26/8:14	Highland Park	5:22/6:36/7:34		Central – US 41-22
Route 3	West	Deerfield	7:22/8:12	Deerfield	5:56/6:47		Deerfield – IL 21
Route 4	West	Highland Park	7:26/8:14	Highland Park	5:22/6:36/7:34		Central – Deerfield - 21
(Carrier - Laidlaw)						500-600	
Mgr. – Tim Grzesiakowski							
Trustmark	Conway	Lake Forest	7:27	Lake Forest	5:24 – LF		Deerpath – 43-60
		W. Lake Forest	7:57	Deerfield (Combo Route)	5:56 – D		43-60[2]
(Carrier – Olson)						100±	
Contact: Frank Cavanaugh							
Packaging Corp. of America	Conway	Lake Forest	7:35/8:23	Lake Forest	4:24/5:24/6:26		Deerpath – 43-60
		W. Lake Forest	7:27	W. Lake Forest	4:11		43-60
Contact: Steve Calhoun						400±[3]	

[1]Shown is A.M. Route – Reverse for P.M.
[2]P.M. Route serves both Lake Forest and Deerfield Stations.
[3]Also picks up PACTIV and TENNECO employees.

Table 2
Metra Commuter Rail Service

MILWAUKEE NORTH LINE

STATION	Fare Zone	SB	NB
Libertyville	**F**	725A.M.	807A.M.
		743A.M.	844A.M.
		755A.M.	
		401P.M.	447P.M.
		432P.M.	533P.M.
		737P.M.	547P.M.
			611P.M.
Lake Forest	**F**	735A.M.	727A.M.
		754A.M.	757A.M.
		805A.M.	834A.M.
		411P.M.	436P.M.
		442P.M.	523P.M.
		747P.M.	536P.M.
			600P.M.
Deerfield	**E**	740A.M.	722A.M.
		800A.M.	751A.M.
		811A.M.	812A.M.
			829A.M.
		448P.M.	431P.M.
		520P.M.	517P.M.
		550P.M.	530P.M.
		620P.M.	554P.M.
			607P.M.

UP-NORTH LINE

STATION	Fare Zone	SB	NB
Lake Bluff	**G**	724A.M.	738A.M.
		732A.M.	826A.M.
		749A.M.	
		822A.M.	
		421P.M.	436P.M.
		521P.M.	501P.M.
		623P.M.	533P.M.
			556P.M.
Lake Forest	**F**	723A.M.	735A.M.
		736A.M.	823A.M.
		754A.M.	
		825A.M.	
		424P.M.	433P.M.
		524P.M.	458P.M.
		626P.M.	529P.M.
			552P.M.
Highland Park	**E**	705A.M.	726A.M.
		731A.M.	814A.M.
		746A.M.	842A.M.
		805A.M.	925A.M.
		833A.M.	
		435P.M.	424P.M.
		534P.M.	451P.M.
		636P.M.	519P.M.
			542P.M.
			553P.M.

3.0 EMPLOYEE SURVEY

This chapter presents the process for conducting the survey, the survey design, and the survey results.

3.1 Participating Employers

From the employer database developed in Task 1 of the study, employers with 50 or more employees were contacted to participate in the survey. Because of the accelerated project schedule, employers were contacted twice and given two weeks to respond. Twenty-five companies responded affirmatively, representing almost 21,000 employees. This is approximately 73% of the "universe" of employees identified in Chapter 2. Table 3 shows the participating employers and their respective number of employees.

Table 3
Participating Employers/No. of Employees

Clear Communications	52
Dann Insurance	100
Hay Management Consultants	26
PCA	200
Brunswick	220
Cosmetique	140
Hewitt	5,521
Village of Lincolnshire	70
Marriott's Lincolnshire Resort	600
Pactiv	668
PNC Mortgage	784
Trustmark	1,275
W.W. Grainger	1,200
CDW	2,000
Taketa Pharmaceuticals	130
LTD Commodities	2,800
Nichols Aluminum	150
Moore Business Forms	1,200
ACCO Brands	500
Komat'su	500
Cole-Parmer	700
Zebra Technologies	730
Quill Corporation	900
STS Consultants	125
Baxter Credit Union	150
TOTAL	**20,741**

Each employer was then asked to identify the number of employees living in zip codes along either the Milwaukee District North Line or the UP North Line. Only these employees were to be surveyed, as they would have access to Metra commuter rail service near their home.

3.2 Survey Design

A draft survey form was prepared. Following comments by the TMA, RTA, Metra, and Pace, the survey form was finalized. The survey form is shown in Appendix B. Each printed questionnaire was imprinted with a unique serial number for identification, from 00001 through 10,000, printed on the top right-hand side. Attached to each survey was a map of the two rail lines with stations identified, for the employee to reference.

3.3 Survey Procedures

Implementation of the survey included a four-step process. First, from the information on number of employees within the selected zip codes, this number of surveys were distributed to the employer. Second, the employer distributed and collected the surveys from their employees. Third, the surveys were transmitted to the data entry firm. Fourth, the data file containing the entered surveys were transmitted to Multisystems for the ridership estimation task, and to a market research firm for summary tables and cross-tabulations.

Distribution/Collection

The following field procedures were used for the employee survey.

1. A first contact telephone call was made to the employment establishment explaining the survey. Participation of the firm was obtained and information such as contact, address, and number of employees was verified.
2. The required number of surveys and maps were mailed or hand delivered to each employer. A log book was maintained recording the serial numbers attached to each employer. In addition to the surveys and maps, a cover letter with instructions, sample memorandum for internal company distribution, and an employer survey form was also included. Two forms of sample memorandums were prepared: one for companies who provide or participate in providing shuttle service to their employees, and one for companies with no shuttle service. These materials are provided in Appendix B.
3. Completed questionnaires were returned or picked up shortly after the survey due date or as arranged by the employer. The employer log form was marked returned and the contact person thanked for their participation.
4. Employees responses were sorted in numerical order. Secondly, those surveys from employees living in zip codes along the rail lines, but very near the Route 22 or 60 corridors were removed (zip codes for Lake Forest, Lincolnshire, Bannockburn, Riverwoods, Deerfield, and Highland Park), as it would be unlikely that these employees would use commuter rail service for a short distance trip. The surveys were then transmitted to the data entry firm.

3.4 Results

The participating 25 employers represented 20,741 employees. Of these employees, approximately 43% were identified as living in zip codes along one of the two rail lines. A 22% response rate was achieved. Several factors prevented a higher response rate, including:

- Quick turn-a-round time. Employers were given two weeks to complete the survey.
- Double counting of employees in selected zip codes. There were a few zip codes that were the same for each of the rail lines.
- Elimination of close-in zip codes. A few of the larger employers were authorized to not distribute surveys to those employees living in zip codes along the rail lines, but very close in to the Routes 22/60 corridors.

It is important to note that the survey was not intended to be statistically valid random sample, but to provide a sense of home locations, travel patterns, and preferences. The information collected is adequate for the purposes of this study. Additionally, knowing that the responses were not representative, the results were used cautiously, particularly in segmenting and interpreting the data. The data was analyzed from different views to better understand and use it.

From the surveys, approximately 34% of the surveyed employees live in zip codes along the commuter rail corridors, excluding the very close-in zip codes. The results are shown in Table 4.

Overall, about 68% are making a "suburb-to-suburb" commute from the north. Although this travel is in the "peak direction," meaning traveling southbound towards the City of Chicago in the morning, they are traveling from a northern suburb to a work destination in the Routes 22/60 corridors. Conversely, about 32% were making a "reverse commute," meaning they were traveling northbound away from the City of Chicago in the morning. Of this 32%, just over 2/3 were traveling from zip codes in the City of Chicago and approximately 1/3 were traveling from suburbs south of the Routes 22/60 corridors.

Of those who do use commuter rail for their work trip, about 60% use the UP-North line and 40% use the Milwaukee District-North line. Lake Forest (downtown) and Highland Park were the preferred stations along the UP-North line. Deerfield and Lake Forest (west) were the preferred stations along the Milwaukee District-North line.

Questions 19, 20, and 21 were asked specifically for input to generating ridership estimates. Employees felt strongly about a shuttle service that had shorter travel times and even more strongly about the shuttle vehicle stopping very near the front door of their building. Summaries by question are presented in Table 5.

Frequencies

Response frequencies were summarized for each question by employer and are included in Appendix C.

Cross-Tabulations

Cross-tabulations were generated for selected questions related to Questions 19, 20, and 21, which impacts the likelihood of using a shuttle service. These are included in Appendix C.

Table 4
Survey Response Form

CO. ID	COMPANY	TOTAL EMP	NO. OF SURVEYS	% IN ZIP CODES	RETURNED SURVEYS		SURVEYS IN SELECTED ZIP CODES	
					NUMBER	%	NUMBER	%
01	Clear Communications	52	26	50%	13	50%	13	50%
02	Dann Insurance	100	25	25%	0	0%		
03	Hay Management Consultants	26	25	96%	10	40%	6	24%
04	PCA	200	102	51%	58	57%	26	25%
05	Brunswick	220	100	45%	0	0%		
06	Cosmetique	140	59	42%	34	58%	31	53%
07	Hewitt	5521	2619	47%	719	27%	719	27%
08	Village of Lincolnshire	70	23	33%	10	43%	5	22%
09	Marriott's Linconshire Resort	600	346	58%	29	8%	32	9%
10	Pactiv	668	356	53%	104	29%	78	22%
11	PNC Mortgage	784	441	56%	38	9%	31	7%
12	Trustmark	1275	682	53%	337	49%	267	39%
13	W.W. Grainger	1200	600	50%	0	0%		
14	CDW	2000	701	35%	0	0%		
15	Taketa Pharmaceuticals	130	28	22%	16	57%	13	46%
16	LTD Commodities	2800	720	26%	151	21%	131	18%
17	Nichols Aluminum	150	99	66%	92	93%	92	93%
18	Moore Business Forms	1200	600	50%	0	0%		
19	ACCO Brands	500	300	60%	38	13%		
20	Komat'su	500	150	30%	73	49%	53	35%
21	Cole-Parmer	700	170	24%	87	51%	69	41%
22	Zebra Technologies	730	300	41%	0	0%		
23	Quill Corporation	900	338	38%	108	32%	104	31%
24	STS Consultants	125	37	30%	15	41%	10	27%
25	Baxter Credit Union	150	65	43%	34	52%	30	46%
		20741	8912	43%	1966	22%	1710	AVG. 34%

Table 5
Employer Survey Results

Surveys Distributed:	8,912
Representing:	25 employers/20,741 employees
Number Returned:	1,966
Response Rate:	22%
Response from employees living in selected zip codes (excludes zip codes in adjacent communities):	34%

Q1. **Employer Name**
See attached table.

Q2. **Home Zip Codes**
See attached table.

Q4. **Work Status**

Full-Time:	96.2%
Part-Time:	3.8%

Q5. **Days of the week typically worked in Route 22/60 corridors**

Monday:	94.2%
Tuesday:	94.3%
Wednesday:	94.7%
Thursday:	94.3%
Friday:	91.9%

Q8. **How many minutes does it typically take to get from home to work?**

A.M.:	42 minutes (average)
P.M.:	47 minutes (average)

Q9. **How many miles do you live from your workplace?**

Average:	22 miles

Table 5 (continued)
Employer Survey Results

Q10. **How do you typically arrive at your worksite?**

Driver:	91.4
Passenger:	4.8
Public Bus:	0.4
Metra:	2.8
Other:	0.8

Q11. **If yes to Metra, which line do you use?**

Milwaukee North:	40.7%
UP North:	59.3%

Q12. **Which Metra station do you typically board?**

See attached list.

Q13. **How do you typically get to your boarding station?**

Drive Auto:	49.1%
Dropped off:	8.9%
Walked:	24.6%
Bicycle:	7.3%
Bus:	10.1%

Q14. **What Metra station do you typically arrive at?**

Deerfield:	18.9%
Highland Park:	24.4%
Lake Forest:	43.3%
Libertyville:	2.4%
Prairie View:	5.5%
All Others:	5.5%

Q15. **How do you typically get from the station to your workplace?**

Picked up:	6.9%
Walked:	3.5%
Bus	5.6%
Employer Shuttle:	61.8%
Other:	16.6%

Q16. **Do you need your car during work hours:**

For Business Use:

Yes	8.9%
No	59.2%

For Lunch:

Yes	11.5%
No	44.6

Table 5 (continued)
Employer Survey Results

Q17.	**Do you need your car for additional stops on your way to or from work?**	
	Yes	26.8%
	No	30.6%
	Occasionally	42.6%
Q18.	**If you did not drive, was an auto available for this trip?**	
	Yes	64.2%
	No	35.8%
Q19.	**Use shuttle, 15-20 minute travel, stop at front door?**	
	Very likely	22.5%
	Likely	31.1%
	Unlikely	30.8%
	Never	15.6%
Q20.	**Use shuttle, 20-30 minute travel time, stop at front door?**	
	Very likely	11.7%
	Likely	24.6%
	Unlikely	41.9%
	Never	21.8%
Q21.	**Use shuttle, 15-20 minute travel time, stop near front door?**	
	Very likely	6.7%
	Likely	18.0%
	Unlikely	44.1%
	Never	31.2%
Q22.	**If you answered very likely or likely, how many day/week would you likely use the service?**	
	1	2.4%
	2	9.2%
	3	22.6%
	4	22.7%
	5	43.1%

Table 5 (continued)
Employer Survey Results

Q23. **What factors would make using a shuttle attractive?**

Short travel time	60.7%
Bus Shelters	12.5%
Train schedule to meet work hours	61.7%
Sidewalks	2.2%
No fare	44.1%
Traveling with co-workers Only	1.7%
Dropped off near front door	45.1%
Pedestrian crosswalks	0.7%
Other	6.7%

Q24. **List the three most important reasons you don't use public transportation for your commute.**

	1	2	3
Inconvenient or n/a to my home	43.3	--	--
Inconvenient or n/a to my work	19.0	20.5	0.1
Work late/irregular hours	18.8	21.8	8.1
Parking is free	3.1	7.1	4.1
Need car to transport family	5.7	7.0	2.3
Public transportation too time consuming	4.8	18.4	17.4
Cannot get home in emergency	2.5	16.9	21.3
Public transportation too costly	0.5	2.3	15.2
Need car for work-related trips	0.3	1.9	6.5
Need car for personal trips	0.4	1.9	14.0
Other	1.7	2.4	11.1

Q25. **Gender of survey respondent.**

Female:	62.6%
Male:	37.4%

Q26. **Annual Household Income**

<$18,000	2.3%
$18,000 - $24,999	6.1%
$25,000 - $39,999	24.2%
$40,000 - $59,999	22.2%
$60,000 - $74,999	15.4%
$75,000 - $99,000	16.0%
$100,000 - $124,000	7.8%
$125,000 - $124,999	2.1%
Over $150,000	3.9%

4.0 MARKET ANALYSIS

4.1 Employment Zones

Because of the size of the study area, it was divided into five employment zones. These zones, as shown in Figure 5 and listed below, were based upon employment clusters identified from Task1.

Zone 1	Route 60/Tri-State
Zone 2	Route 22/Tri-State
Zone 3	Route 60/Milwaukee
Zone 4	Route 22/Milwaukee
Zone 5	Mid-Milwaukee

Table 6 shows the employers by zone and number of employees for each employer (as available).

4.2 Survey Data Analysis

Survey data was analyzed by several different breakdowns to assist in the estimation of ridership. Data was stratified by:

- Direction of travel (reverse commute or travel from the north)
- Employment zone
- Shuttle availability (did survey respondents work for a firm where shuttles were available?)

These stratifications help to understand the travel patterns of survey respondents. Given the short time window that was available to administer surveys, the surveys were not anticipated to provide a representative sample of firms and employees in the two corridors. As such, post survey analysis was required to determine specifically how to use the survey data that was collected. Analyzing the stratified data, several observations can be made (reference Tables 7 through 11):

- Reverse commuters have a much higher tendency than suburb-to-suburb commuters to use shuttle services because of variability in travel times and possibly proximity to the origin rail station.
- PM travel times of reverse commuters are significantly higher than their AM travel times, a pattern not seen in suburb-to-suburb commuters travel time, which would result in higher ridership estimates for those making a reverse commute.
- People who work for firms that have shuttle services view them more positively than people who work for firms that do not sponsor shuttle services.
- Short travel times and direct service were identified as key characteristics of any proposed shuttle service.
- People who use employer shuttles disproportionately filled out the surveys, as compared to those who do not use the shuttles.

Figure 5 Employment Zones

Table 6
Employee Population by Zone

ZONE 1 - RT. 60/TRI-STATE

Employer	# of Employees	
Trustmark	1275	
PCA	200	
Pactive	668	
Brunswick	220	
W.W. Grainger	1200	
Tap	900	(4/1/00)
Opus Development	475	(not yet open)
	4938	

ZONE 2 - RT.22/TRI-STATE

Employer	# of Employees
Clear Communications	52
Hay Management Consultants	26
Hewitt	1000
LTD Communications	2800
Abbot	50
Dann Insurance	100
Moore Business Forms	900
Dolan Associates	450
NCH	175
Woodfield Suites Hotel	30
	5583

ZONE 3 - RT. 60/MILWAUKEE

Employer	# of Employees
Cole-Parmer	700
CDW	2000
American Hotel Registry	800
Baxter Credit Union	149
PNC Mortgage	784
Komat'su	500
Allstate Insurance	600
ETA	130
Learning Resources	130
Loomcraft	15
Omron	165
Ta Chen	100
Lot 55 Bldg.	760
Nostalgia	50
Manpower Temporary Svcs.	20
	6903

Table 6 (continued)
Employee Population by Zone

ZONE 4 - RT.22/MILWAUKEE

Employer	# of Employees
ACCO Brands	500
Akorn Ophthamalics	75
Case Capital	20
GE Reinsurance	109
Maravilla	60
Marriott's Lincolnshire	600
Nichols Aluminum	150
Profund Systems	10
Quill Corp.	900
S&S Public Relations	30
Takeda Pharmaceuticals	130
Hewitt	4700
American Horizons	30
Village of Lincolnshire	70
Pactive	150
	7534

ZONE 5 - MID-MILWAUKEE

Employer	# of Employees
American Tool Co.	50
Cosmetique	140
Drummond American /corp.	48
Chicago Fineblanking	150
Fuji American	150
Mitsubishi	400
STS Consultants	140
T&M Engineering	150
Tiger Electronics	65
Zebra Technologies	730
ZF Industries	221
Northwest Tool & Die	475
	2719

Study Area Employee Population **27677**

Table 7
Survey Analysis
Route 60 / Tri-State
(Zone 1)

Route 60 / Tri-State		How likely would you be to use a free *15-20 minute* shuttle that *stopped at your workplace*?				Total
		Very likely	Likely	Unlikely	*Never*	
Sub-Sub: (live north)	**Count**	42	68	98	61	269
	%	*15.6%*	*25.3%*	*36.4%*	*22.7%*	100.0%
Reverse Commute	**Count**	34	30	30	9	103
	%	*33.0%*	*29.1%*	*29.1%*	*8.7%*	100.0%

Route 60 / Tri-State		How likely would you be to use a free *20-30 shuttle* that *stopped at your workplace*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	**Count**	21	44	129	70	264
	%	*8.0%*	*16.7%*	*48.9%*	*26.5%*	100.0%
Reverse Commute	**Count**	11	24	47	22	104
	%	*10.6%*	*23.1%*	*45.2%*	*21.2%*	100.0%

Route 60 / Tri-State		How likely would you be to use a free *15-20 minute shuttle* that stopped at a designated location *near your work*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	**Count**	8	32	117	110	267
	%	*3.0%*	*12.0%*	*43.8%*	*41.2%*	100.0%
Reverse Commute	**Count**	14	15	53	23	105
	%	*13.3%*	*14.3%*	*50.5%*	*21.9%*	100.0%

Table 8
Survey Analysis
Route 22 / Tri-State
(Zone 2)

Route 22 / Tri-State		How likely would you be to use a free *15-20 minute* shuttle that *stopped at your workplace*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	**Count**	16	36	34	18	104
	%	*15.4%*	*34.6%*	*32.7%*	*17.3%*	*100.0%*
Reverse Commute	**Count**	5	4	5	6	20
	%	*25.0%*	*20.0%*	*25.0%*	*30.0%*	*100.0%*

Route 22 / Tri-State		How likely would you be to use a free *20-30 shuttle* that *stopped at your workplace*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	**Count**	6	30	34	29	99
	%	*6.1%*	*30.3%*	*34.3%*	*29.3%*	*100.0%*
Reverse Commute	**Count**	5	4	7	6	22
	%	*22.7%*	*18.2%*	*31.8%*	*27.3%*	*100.0%*

Route 22 / Tri-State		How likely would you be to use a free *15-20 minute shuttle* that stopped at a designated location *near your work*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	**Count**	6	20	42	32	100
	%	*6.0%*	*20.0%*	*42.0%*	*32.0%*	*100.0%*
Reverse Commute	**Count**	3		7	9	19
	%	*15.8%*		*36.8%*	*47.4%*	*100.0%*

Table 9
Survey Analysis
Route 60 / Milwaukee
(Zone 3)

Route 60 / Milwaukee		How likely would you be to use a free *15-20 minute* shuttle that *stopped at your workplace*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	Count	14	30	40	11	95
	%	*14.7%*	*31.6%*	*42.1%*	*11.6%*	*100.0%*
Reverse Commute	*Count*	16	7	4	7	34
	%	*47.1%*	*20.6%*	*11.8%*	*20.6%*	*100.0%*

Route 60 / Milwaukee		How likely would you be to use a free *20-30 shuttle* that *stopped at your workplace*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	Count	11	17	49	16	93
	%	*11.8%*	*18.3%*	*52.7%*	*17.2%*	*100.0%*
Reverse Commute	Count	6	9	12	6	33
	%	*18.2%*	*27.3%*	*36.4%*	*18.2%*	*100.0%*

Route 60 / Milwaukee		How likely would you be to use a free *15-20 minute shuttle* that stopped at a designated location *near your work*?				Total
		Very Likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	Count	6	18	45	24	93
	%	*6.5%*	*19.4%*	*48.4%*	*25.8%*	*100.0%*
Reverse Commute	Count	3	10	8	10	31
	%	*9.7%*	*32.3%*	*25.8%*	*32.3%*	*100.0%*

Table 10
Survey Analysis
Route 22 / Milwaukee
(Zone 4)

Route 22 / Milwaukee		How likely would you be to use a free *15-20 minute* shuttle that *stopped at your workplace*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	Count	132	185	192	102	611
	%	*21.6%*	*30.3%*	*31.4%*	*16.7%*	*100.0%*
Reverse Commute	Count	95	128	86	28	337
	%	*28.2%*	*38.0%*	*25.5%*	*8.3%*	*100.0%*

Route 22 / Milwaukee		How likely would you be to use a free *20-30 shuttle* that *stopped at your workplace*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	Count	78	147	233	136	594
	%	*13.1%*	*24.7%*	*39.2%*	*22.9%*	*100.0%*
Reverse Commute	Count	43	97	147	48	335
	%	*12.8%*	*29.0%*	*43.9%*	*14.3%*	*100.0%*

Route 22 / Milwaukee		How likely would you be to use a free *15-20 minute shuttle* that stopped at a designated location *near your work*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	Count	42	111	257	178	588
	%	*7.1%*	*18.9%*	*43.7%*	*30.3%*	*100.0%*
Reverse Commute	Count	21	57	158	94	330
	%	*6.4%*	*17.3%*	*47.9%*	*28.5%*	*100.0%*

Table 11
Survey Analysis
Mid – Milwaukee
(Zone 5)

Mid - Milwaukee		How likely would you be to use a free *15-20 minute* shuttle that *stopped at your workplace*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	Count	14	24	17	14	69
	%	*20.3%*	*34.8%*	*24.6%*	*20.3%*	*100.0%*
Reverse Commute	Count	7	5	8	4	24
	%	*29.2%*	*20.8%*	*33.3%*	*16.7%*	*100.0%*

Mid - Milwaukee		How likely would you be to use a free *20-30 shuttle* that *stopped at your workplace*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	Count	7	23	20	19	69
	%	*10.1%*	*33.3%*	*29.0%*	*27.5%*	*100.0%*
Reverse Commute	Count	4	7	8	5	24
	%	*16.7%*	*29.2%*	*33.3%*	*20.8%*	*100.0%*

Mid - Milwaukee		How likely would you be to use a free *15-20 minute shuttle* that stopped at a designated location *near your work*?				Total
		Very likely	Likely	Unlikely	Never	
Sub-Sub: (live north)	Count	2	18	23	24	67
	%	*3.0%*	*26.9%*	*34.3%*	*35.8%*	*100.0%*
Reverse Commute	Count	3	11	6	4	24
	%	*12.5%*	*45.8%*	*25.0%*	*16.7%*	*100.0%*

4.3 Ridership Estimation Process

In order to estimate the shuttle ridership potential in each of the five employer zones, a mode split range was determined for each zone. The mode split range represents – on one end a conservative estimate and on the other an optimistic estimate - of the number of people that may choose to use an employer shuttle to access their work site. The mode split was applied to the estimated number of people that have their residence in an area that is served by the UP-North line or the Milwaukee-North line and also reside far enough away to consider using an auto alternative.

Estimate of Commuter Rail Market Shed by Zone: Employer survey data was used to determine the percent of employees living in the target home zip codes that would have reasonable access to the train stations getting them to the vicinity of Routes 22 and 60. The employer survey data place this number at 35% of all employees. This average across all employer respondents was used to represent the universe of employers in the corridors.

Distribution by Commuter Rail Line: From the employee surveys, it was found that a consistent 60% had access to the UP-North line and 40% had access to the Milwaukee-North line. This split between lines was used for all zones. Subdividing the potential market population to the two different lines was important for service design considerations. Design of routings and the timing of services need to be informed by the specific characteristics of service of each of the commuter rail lines – in addition to the characteristics of the employees in each of the zones.

Mode Split Estimation: Stratified survey data was used to determine the mode split range for each of the zones. We initially focused on the two zones where there was survey data from both users and non-users of employer shuttles, Zone 1 (Route 60 / Tri-State) and Zone 4 (Route 22/ Milwaukee). The stratified survey data was analyzed to look at the responses for reverse commuters separately from suburb-to-suburb commuters. Responses to a number of different survey questions were examined to determine interests, actions, and tendencies of the employees.

By commute direction, the number of employer shuttle users were divided by the number of overall respondents from that particular zone to establish a preliminary shuttle mode split estimate. The preliminary mode split estimate was then adjusted to account for the sample in these zones having an over representation of shuttle users among survey respondents. The modified mode split estimates were then weighted to reflect the average proportion of reverse commuters and suburb-to-suburb commuters. The difference in mode split between the two commute directions is significant.

For the zones where the survey data does not indicate use of employer shuttles to access the workplace, mode split estimates were adjusted from the modified mode splits calculated from Zones 1 and 4. Adjustment of the mode splits was made based on the factors that were described in the series of questions 19 – 21 in the survey. These questions inquired of the respondents their likelihood to use the service based on factors of travel time and proximity of drop off near the work site. Travel times of 10 – 15 minutes rated significantly higher than travel times of 20 – 30 minutes in terms of the likelihood that someone would use the service. This travel time factor, and the nature of the business parks in the different zones, was used to establish zone by zone mode splits.

Conservative and optimistic mode splits were developed for each zone. The key factor likely to affect whether ridership from a particular firm will tend towards the conservative or optimistic is the

level of the employee base that is coming from residences in the reverse commute direction, along the Metra rail lines. Further data analysis of reverse commuters shows that reverse commuters coming from the city of Chicago are even more likely than reverse commuters from the suburbs to choose to use an employer shuttle.

4.4 Ridership Estimation by Zone

Tables 12 through 16 present the ridership estimates by zone.

Table 12
Ridership Estimate
Route 60 / Tri-State (Zone 1)

Zone Employment Estimate	5000
Number in Market Area of Train Stations on Home End *	1750

* 35% based on employer estimates and survey responses

	Union Pacific –North Line **		**Milwaukee District – North Line *****	
Rail Line Market Size	1050		700	
Mode Split Range	Conservative – 3%	Optimistic – 5%	Conservative – 3%	Optimistic – 5%
Number of Employees	30	50	20	35
Number of Daily Rides	60	100	40	70

** 60% of potential Metra users are in UP North service area based on survey responses
*** 40% of potential Metra users are in Milwaukee North service area based on survey responses

Table 13
Ridership Estimate
Route 22 / Tri-State (Zone 2)

Zone Employment Estimate	5600
Number in Market Area of Train Stations on Home End *	1960

* 35% based on employer estimates and survey responses

	Union Pacific –North Line **		**Milwaukee District – North Line *****	
Rail Line Market Size	1180		780	
Mode Split Range	Conservative – 3%	Optimistic – 5%	Conservative – 3%	Optimistic – 5%
Number of Employees	35	60	25	40
Number of Daily Rides	70	120	50	80

** 60% of potential Metra users are in UP North service area based on survey responses
*** 40% of potential Metra users are in Milwaukee North service area based on survey responses
\

Table 14
Ridership Estimate
Route 60 / Milwaukee (Zone 3)

Zone Employment Estimate	6900
Number in Market Area of Train Stations on Home End *	2415

* 35% based on employer estimates and survey responses

	Union Pacific –North Line **		**Milwaukee District – North Line *****	
Rail Line Market Size	1450		965	
Mode Split Range	Conservative – 2%	Optimistic – 3.5%	Conservative – 2%	Optimistic – 3.5%
Number of Employees	30	50	20	35
Number of Daily Rides	60	100	40	70

** 60% of potential Metra users are in UP North service area based on survey responses
*** 40% of potential Metra users are in Milwaukee North service area based on survey responses

Table 15
Ridership Estimate
Route 22 / Milwaukee (Zone 4)

Zone Employment Estimate	7500
Number in Market Area of Train Stations on Home End *	2625

* 35% based on employer estimates and survey responses

	Union Pacific –North Line **		**Milwaukee District – North Line *****	
Rail Line Market Size	1575		1050	
Mode Split Range	Conservative – 1.5%	Optimistic – 3%	Conservative – 1.5%	Optimistic – 3%
Number of Employees	25	50	15	30
Number of Daily Rides	50	100	30	60

** 60% of potential Metra users are in UP North service area based on survey responses
*** 40% of potential Metra users are in Milwaukee North service area based on survey responses

Table 16
Ridership Estimate
Mid-Milwaukee (Zone 5)

Zone Employment Estimate	2700
Number in Market Area of Train Stations on Home End *	945

* 35% based on employer estimates and survey responses

	Union Pacific –North Line **		**Milwaukee District – North Line *****	
Rail Line Market Size	570		375	
Mode Split Range	Conservative – 1%	Optimistic – 2.5%	Conservative – 1%	Optimistic – 2.5%
Number of Employees	6	15	4	10
Number of Daily Rides	12	30	8	20

** 60% of potential Metra users are in UP North service area based on survey responses
*** 40% of potential Metra users are in Milwaukee North service area based on survey responses

5.0 SERVICE PLANS

This chapter presents the service planning activities and recommendations for shuttle service.

5.1 Travel Times

The first step was to determine the approximate travel times between each of the employment zones and the closest Metra commuter rail station on both the UP-North line and the Milwaukee District-North line. Travel time runs were made during both the A.M. and P.M. peak periods, with the highest time used for the analysis. Table 17 presents the closest station to each zone, the approximate travel time between the zone and the station, and an initial look at possible train times to determine if it appeared feasible for a shuttle to meet these train times.

5.2 Shuttle Recommendations

From the ridership estimates in Chapter 4, the employee populations, identification of an "anchor employer" who could generate a significant percentage of the potential ridership, and the travel time analysis, it was determined that zones 1, 2, and 3 had the greatest potential to support a shuttle service to the UP-North line. Zone 4 has similar ridership potential to zone 3, but has higher travel times. These travel times exceeded the travel time thresholds considered to be acceptable as identified from the employee survey. Zone 5 has the highest travel time and lowest ridership potential. The UP-North has the highest ridership (60%) compared to the Milwaukee District North line (40%). Therefore, it was agreed that future work as part of this study would concentrate on the development of shuttle concept plans would be prepared for zones 1, 2, 3, and 4 to connect to the UP-North line. Although Zone 5 would not be addressed in the remainder of this study, it would not be precluded from future consideration of shuttle services beyond this study.

5.3 Shuttle Concept Plans

New travel time runs were conducted from zones 1 through 4 to the closest station on the UP-North line – either downtown Lake Forest or Highland Park. In addition to the travel time between the station and the zone, internal travel times were also taken, which in some cases was as much or more than the direct travel time.

Metra train schedules were reviewed for both northbound and southbound trains, and for both A.M. and P.M peak periods. Given that a shuttle would need to arrive about 5 minutes prior to the P.M. train, potential schedules were prepared for each zone.

Initial concept plans were developed and presented to a meeting of corridor employers. Following this meeting, concept plans were refined. Tables 18 through 21 and Figures 6 through 9 present the shuttle concept plans.

It is to be noted that the service plans for zones in the Route 22/60 corridors are conceptually different than the existing service provides in the Lake-Cook corridor. The proposed shuttle service levels in the 60/22 corridors are not as frequent as the Lake-Cook Shuttle Bug and the travel times are generally longer with total travel times including travel to station, internal circulation, and loading/unloading at times exceeding 40 minutes as opposed to a 15 – 20 minute trip in the Lake-Cook corridor. Ridership levels also reflect the difference in service levels with projected levels of daily riders ranging from a low of 12 – 30 in Zone 5 to 60 to 100 riders in Zone 1.

Table 17
Travel Time Summary

ZONE	EMPLOYEE POPULATION	EMPLOYER ANCHORS	EXISTING SHUTTLES	UP - NORTH						MILWAUKEE DISTRICT - NORTH					
				STATION (1)	TRAVEL TIME (2)	POSSIBLE TRAIN TIMES (3) A.M. N/B	A.M. S/B	P.M. S/B	P.M. N/B	STATION (1)	TRAVEL TIME (2)	POSSIBLE TRAIN TIMES (3) A.M. N/B	A.M. S/B	P.M. S/B	P.M. N/B
1 RT.60/ I-94	4938	Trustmark Pactive W.W. Grainger	Trustmark: 20 trips/day 10 emp/day PCA: 80 trips/day 40 emp/day	Lake Forest	10 min.	735 823	736 825	524 626 724	529 632 733	Lake Forest West	7 min	727 757 834	735 754 805	411 442 542	436 536
2 RT.22/ I-94	5583	LTD Commodities Hewitt (east campus) Moore Bus. Forms	LTD: early starts Hewitt	Highland Park	16 min.	726 842	731 833	522 or 534 636 734	519 or 542 635 724	Deerfield	10 min	722 812	811	431 520 550	448 517 554
3 RT.60/ Milwaukee	6903	CDW American Hotel Reg. Cole-Parmer PNC Mortgage	Pace 895 to NCS	Lake Forest	18 min.	735 823	736 825	424 524 626 724	433 529 632 733	Lake Forest West	14 min.	727 757 834	735 754 805	411 442 542	436 536
4 RT.22/ Milwaukee	7534	Hewitt (west campus) Quill Corp.	Hewitt: 100 trips/day 50emp/day	Highland Park	25 min.	726 814	731 805	522 or 534 636 734	519 or 542 635 724	Deerfield	17 min.	722 812	811	431 530	448 550
5 Mid-Milwaukee	2719	Mitsubishi Zebra Technologies	Pace 895 to NCS	Lake Forest	24 min.	735 823	736 825	424 524	433 529	Deerfield	20 mi.	722 812	811	431 530	448 550

Table 18
Shuttle Concept Plan
Route 60 / Tri-State (Zone 1)

TRAVEL TIMES:

Lake Forest Train Station to Conway Farms	8 min.
Conway Farms internal circulation	7 min.
Bus loading/unloading	2 min.
Conway Farms to W.W. Grainger	4 min.
Stop at W.W. Grainger	2 min.
W.W. Grainger to Lake Forest Station	12 min.

POTENTIAL SCHEDULE

A.M.

Trains		Arr. Conway	Depart Conway	Arr	Depart	Back at
NB	SB	Farms	Farms	Grainger	Grainger	Station
735	736	744	753	801	803	815
823	825	833	842	850	852	904

P.M.

Arr.	Depart	Arr. Conway	Depart Conway	Arr.	Trains	
Grainger	Grainger	Farms	Farms	Station	SB	NB
457	459	503	512	520	524	529
540	542	546	555	603	626	608/632
657	659	703	712	720	724	733

Table 19
Shuttle Concept Plan
Route 22 / Tri-State (Zone 2)

TRAVEL TIMES:

Highland Park Train Station to LTD Commodities	16 min.
Internal circulation	18 min.
Loading/unloading	2 min.
Return to station	20 min.

POTENTIAL SCHEDULE

A.M.

Trains		Arr. LTD	Depart Tri-State	Back at
NB	SB	Comm.	Intn'l	Station
726	731	747	807	827
842	833	849	909	929

P.M.

Arr. Tri-State	Depart LTD	Arr. At	Trains		
Intn'l	Comm.	Station	NB	SB	
440	500	516	519	522	} OR
445	505	521	542	534	
545	605	621	635	636	
645	705	721	724	734	

Table 20
Shuttle Concept Plan
Route 60 / Milwaukee (Zone 3)

TRAVEL TIMES:

Lake Forest Train Station to Rt. 60/Milwaukee	18 min.
Rt. 60/Milwaukee to American Hotel	4 min.
Travel time between CDW & Amer. Hotel - A.M.	4 min.
Continental Exec. Park internal circulation	15 min.
Bus loading/unloading	5 min.
Return to Lake Forest station	16 min.

POTENTIAL SCHEDULE

A.M.

Trains		Arr. Amer.	Depart	Back at
NB	SB	Hotel	ETA	Station
735	736	758	822	838
823	825	847	911	927

P.M.

Arr. Amer.	Depart	Arr.	Trains	
Hotel	ETA	Station	SB	NB
435	459	515	524	529
539	603	619	626	632
643	707	723	724	733

Table 21
Shuttle Concept Plan
Route 22 / Milwaukee (Zone 4)

TRAVEL TIMES:

Highland Park Train Station to Aptakisic	16 min.
Internal circulation	12 min.
Loading/unloading	3 min.
Return to station	20 min.

POTENTIAL SCHEDULE

A.M.

Trains		Arr.	Depart	
NB	SB			Back at Station
726	731	747	807	827
842	833	849	909	929

P.M.

Arr.	Depart		Trains		
		Arr. At Station	NB	SB	
440	500	516	519	522	} OR
445	505	521	542	534	
545	605	621	635	636	
645	705	721	724	734	

Figure 6 Shuttle Concept Plan – Zone 1

Figure 7 Shuttle Concept Plan – Zone 2

Figure 8 Shuttle Concept Plan – Zone 3

Figure 9 Shuttle Concept Plan – Zone 4

6.0 SUMMARY/NEXT STEPS

6.1 Summary

This evaluation of the feasibility of employer-sponsored shuttles indicate some opportunity to pursue implementation. The opportunities are more limited than has been experienced in the Lake-Cook Corridor, due to two key factors:

1. distance, and therefore travel time, between the Metra stations and employment sites, and
2. few "anchor companies" and a greater number of small to mid-sized companies located in large business parks.

There are several existing, successful private shuttles currently in operation within the study area. The experience with these services suggest that the largest market for shuttle riders is employees traveling in the reverse commute direction because they experience the greatest level of congestion, especially during the evening commute home.

6.2 Phasing

Response from employers has been strongest in Zone 1. There has been some interest, although limited, in zones 2, 3, and 4. Based on available funding and employer support, it is recommended that Phase I should begin with Zone 1. Phase 2 could include employers from either zones 2, 3, or 4, and would depend on financial support from employers and negotiations with Pace and Metra for funding of the shuttle services. The TMA would play a key role in coordinating the service development, marketing, and implementation of this service.

Most likely the shuttle proposals and the phasing of the service implementation are interim solutions for employees, particularly those located on or adjacent and west of Milwaukee Avenue in Vernon Hills and Lincolnshire. When Metra completes the double tracking of the North Central Service (NCS) in 2005 and service is expanded from 10 to 22 trains daily, shuttle service will be much more convenient in these areas and the TMA will most likely work with Pace, Metra, and employers to initiate shuttle service accessing stations on the North Central Line. This is especially true for Zone 5, which is significantly closer to the NCS than the Milwaukee District – North or UP – North lines.

6.3 Next Steps

Initiation of shuttle service will require close coordination of all parties. Following conclusion of this study, the TMA should continue working with employers in Zone 1 to secure their financial support. The TMA should also continue to be the liaison between Pace, Metra, and the employers. Once the specific employers are identified for stop locations, Pace should conduct detailed route and schedule design between these locations and Metra stations. The TMA should prepare an estimated 2-year budget with levels of funding required by the employers and Metra. Similar to the Lake-Cook Shuttle Bug, the TMA should solicit the employer contributions. Metra has committed to providing start-up funds using their Access to Jobs funds and should initiate their process for allocating these funds.

APPENDIX A. EMPLOYER DATABASE

APPENDIX B. SURVEY FORMS AND MATERIALS

APPENDIX C. SURVEY RESPONSE FREQUENCIES AND CROSS-TABULATIONS