Village of Carpentersville

Transit Improvement Plan

Final Report

December 2014

Prepared for

Regional Transportation Authority

Village of Carpentersville Illinois

Building a Better Tomorrow . . . Today

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Think. See. Be Purple.

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1.0 Introduction

The Village of Carpentersville (Village) and the Regional Transportation Authority (RTA) have partnered to identify transportation gaps between Carpentersville's residents and its manufacturing employers and to develop transit solutions to help close those gaps. Sections 2.0 through 6.0 of this report summarize the technical work that was done to support the project, including understanding the Village's existing conditions, identifying its travel market, developing a series of alternatives that were responsive to the travel market, and – following coordination with stakeholders – identifying the transit investment strategy that would efficiently improve connectivity between Carpentersville's residents and its major employers. These technical reports are included as appendices to this report.

Stakeholder and public engagement was woven throughout the public process, and was used to guide the development and evaluation of alternatives:

- A project Steering Committee, comprised of representatives from Carpentersville's major employers, the Northern Kane County Chamber of Commerce, and partner transit agencies met three times to review key project deliverables and provide project guidance.
- English- and Spanish-language surveys were distributed at a variety of Carpentersville employers and activity centers – and surveys were posted on the Village website – during the Spring of 2013 to support development of the Existing Conditions Report.
- Based on input from the Steering Committee, key stakeholder interviews were held during the Summer of 2013 with select members of the Carpentersville business community, representatives from the Village, and broader community representatives, to support the development of the Existing Conditions Report.
- Two open houses (one in July 2013 and one in December 2014) presented key project deliverables to members of the public for comment.
- The recommended investment strategy, which is discussed below and in Sections 5.0 and 6.0 of this report, was presented to the Village of Carpentersville Board of Trustees on December 16, 2014.

The technical analysis and stakeholder input identified mobility gaps between Carpentersville's residents and employers and resulted in the identification of a phased approach to improving transit connections. The recommended approach includes the creation of employee-based vanpools through the Pace Traditional Vanpool Program in the near-term, while the Village identifies funding sources and pursues implementation of local transit service through the Pace Municipal Vehicle Program in the mid-term. The approach is summarized in Table 1-1 below and is discussed in more detail in Section 5.0 and Appendix D.

Table 1-1: Recommended Alternatives

Alternatives	Timeframe	Rationale
Pace Traditional Vanpool Program	Near-term	Efficiently connects Carpentersville residents with major Carpentersville employers; No financial contribution from the Village or employers; Utilized by employees with administration by Pace; Can build a ridership base for the Pace Municipal Vehicle Program
Pace Municipal Vehicle Program	Mid-term	Efficiently connects major concentrations of Carpentersville residents with major Carpentersville employers; Can provide a connection from regional fixed route transit services to Carpentersville employers; Program is administered and funded by the Village; Costs can potentially be offset by fares and third party funding sources
Transit-Supportive Infrastructure Improvements	Mid-term	Infrastructure improvements will support the mobility of transit users, pedestrians, and bicyclists

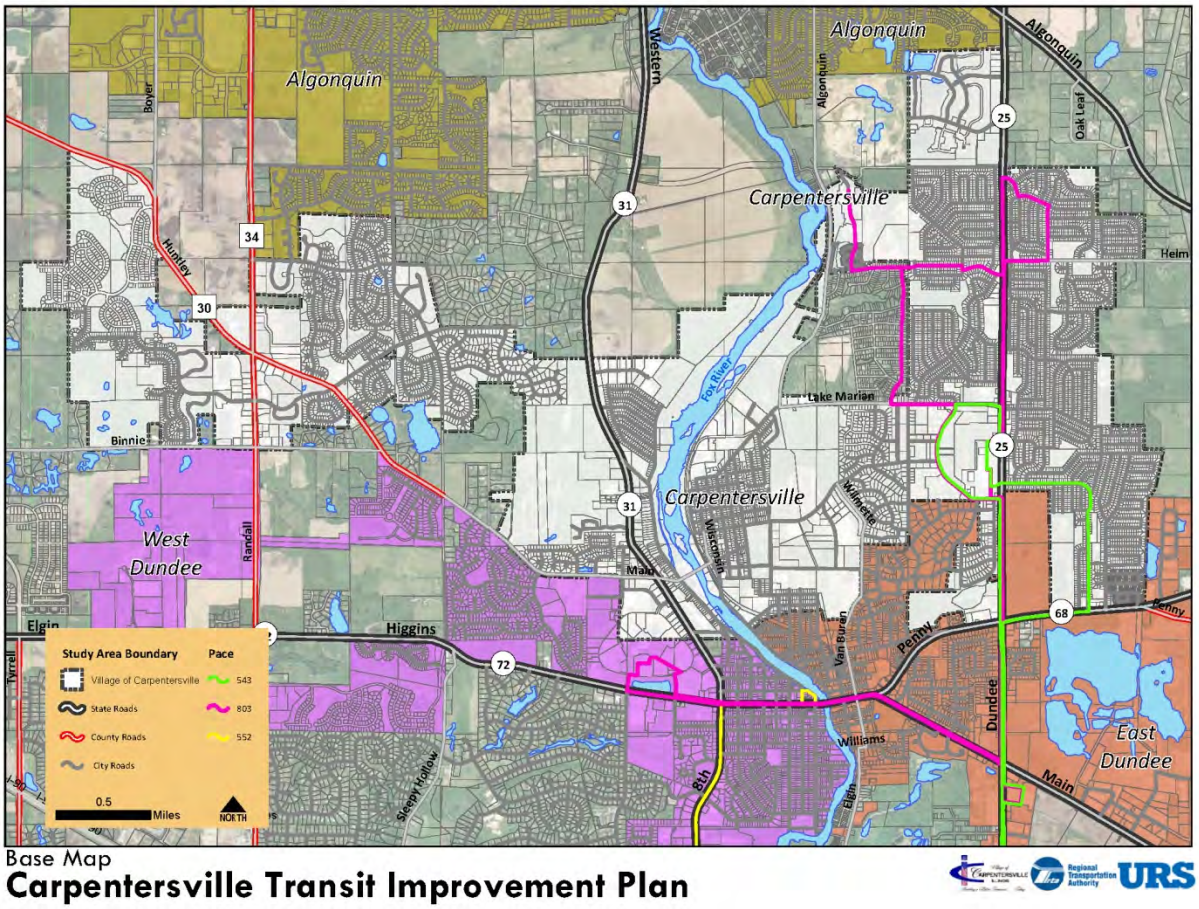
Section 6.0 is the Implementation and Funding Plan, which provides a roadmap to project implementation and assists in the identification of potential funding sources and partners. This Plan identifies specific implementation steps, implementation partners, and potential funding tools and sources.

2.0 Existing Conditions

Carpentersville's demographics and commute flow, land use and development patterns, the Village's policy and regulatory environment, and the existing transportation network were all assessed as part of the Existing Conditions Report, which is available as Appendix A. This phase of the project – which included key stakeholder interviews and surveys available to the general public – defined the framework within which subsequent transit investment options were developed and evaluated.

The Village of Carpentersville is a diverse, dynamic community whose residents, visitors, and employers rely on a robust transportation network to support mobility between its residences, employment centers, retail outlets, community facilities, and recreational amenities. A variety of transportation infrastructure elements, including roadways and transit, connect these origins and destinations, as shown in Figure 2-1.

Figure 2-1: Transit Improvement Plan Base Map



The Existing Conditions Report documented that Carpentersville's shifting demographic trends and development patterns are impacting demand on the existing transportation network and affecting the mobility of Carpentersville residents and employees. As shown in Figure 2-2 and discussed below, these changing dynamics present an opportunity to improve connectivity and the quality of life for Carpentersville's residents and employers.

- Situation: Carpentersville is a comparatively youthful community that has experienced strong rates of population growth, particularly of Hispanic residents in Spanish-speaking households, over the past decade.
    - **Impact on Transportation: These trends indicate the potential to increase transit mode share in the future: to young and immigrant populations, transit service is often more attractive than driving.**

- Situation: Carpentersville households have experienced a decline in household income over the past decade, which impacts transportation choices (ability to own a car and/or increased reliance on transit service), which then impacts employment choices (ability to access place of employment).
    - **Impact on Transportation: A lower-cost transportation option that is a viable commuting mode will support the sustainable economic health of Carpentersville families.**

- Situation: A comparatively high percentage of Carpentersville residents work in the manufacturing sector, which is typically scheduled in shifts.
    - **Impact on Transportation: Improvements to the existing transit service should be sensitive to the schedules of major employers within the Village.**

- Situation: Carpentersville's highest density existing residential uses are clustered on the east side of the Village, but the newest residential and commercial developments are located on the west side of the Village.
    - **Impact on Transportation: The growing residential and commercial areas on the west side of the Village will benefit from improved connectivity to the existing concentration of residential, institutional and commercial uses on the east side of the Village.**

- Situation: Circulation within the Village is constrained by limited Fox River crossings; the planned Longmeadow Corridor Extension will help to improve east-west traffic flow.
    - **Impact on Transportation: This infrastructure investment will support improved connectivity between existing and future residential and employment centers.**

- Situation: Major employers within the Village are clustered along the Fox River near Old Town and to the east of Illinois Route 31 north of Raceway Woods.
    - **Impact on Transportation: Existing fixed route transit service does not serve these areas.**

- Situation: Existing fixed route transit service is limited to the east side of the Village and oriented in a north-south pattern.
    - **Impact on Transportation: Current transit network doesn't support existing mobility patterns.**

- Situation: A comparatively high percentage of Carpentersville residents own cars, and they experience comparatively high commuting times to work.
    - **Impact on Transportation: Carpentersville residents are spending long commutes in their car rather than taking transit, which may indicate that transit is not a viable**

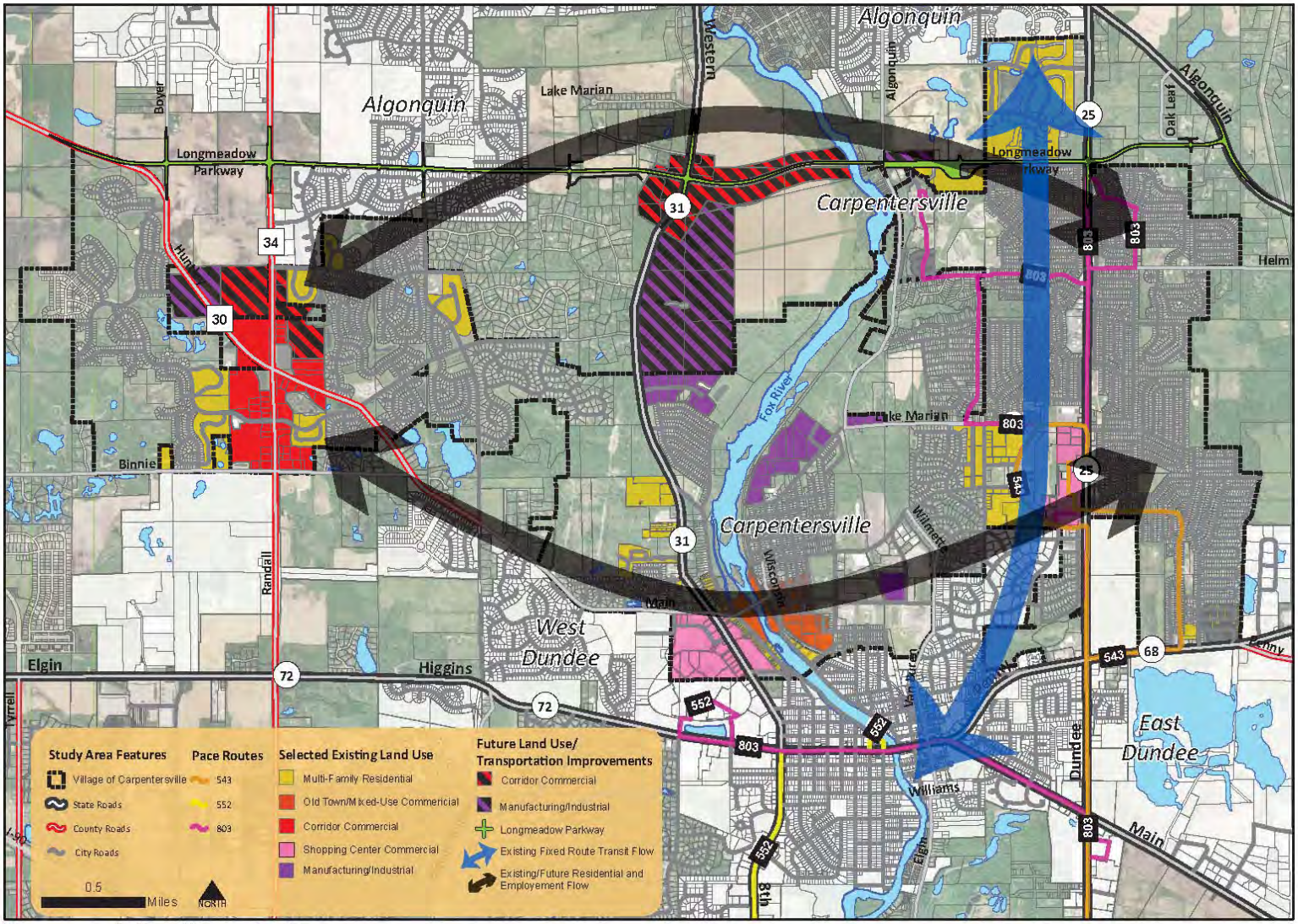
alternative to driving, or that the characteristics of existing transit make it less attractive than driving.

- Situation: A comparatively small percentage of Carpentersville residents take transit to work, but a comparatively high percentage choose to carpool.
    - **Impact on Transportation: While the high rates of carpooling indicate common residential origins and employment destinations (which is typically supportive of transit use), Carpentersville residents typically do not take transit to work. This suggests that residents are not averse to modes other than single passenger vehicle, but choose carpooling over transit.**

- Situation: A comparatively high percentage of Carpentersville residents work at an employer within the Village, but access to employers within the surrounding region is also important.
    - **Impact on Transportation: Transit service should provide connections between residential and employment centers within the Village, as well as provide access to the broader transit network, including Metra commuter rail service.**

Despite socio-economic characteristics and development patterns that are typically conducive of transit usage, the low rates of transit-riding commuters indicates that there is a disconnect between travel demand and existing fixed route transit service.

Figure 2-2: Carpentersville Transit Improvement Plan Framework for Opportunity



Framework for Opportunity
Carpentersville Transit Improvement Plan

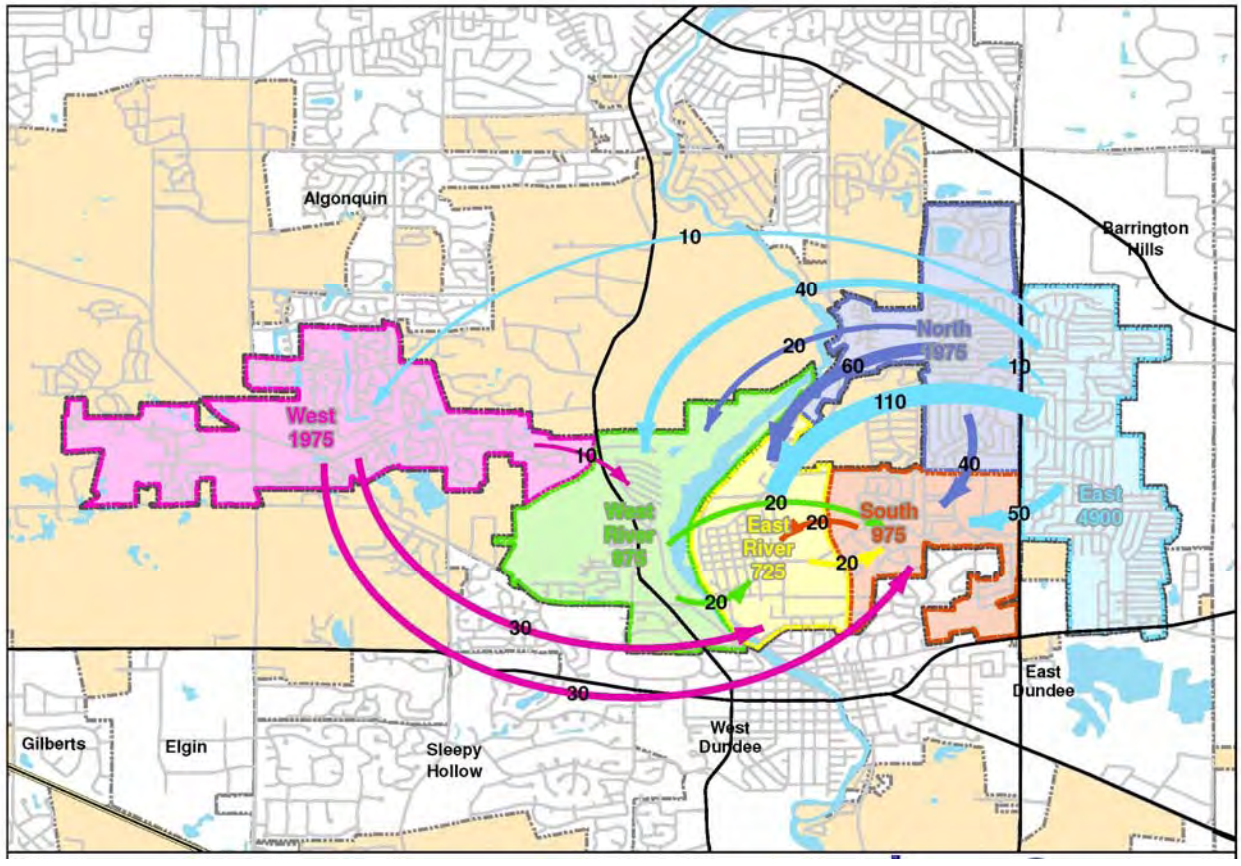
3.0 Travel Market Analysis

A Travel Market Analysis (Appendix B), which identifies the existing commute patterns within Carpentersville, was conducted following completion of the Existing Conditions phase because it is important to understand the underlying travel patterns that would be served by any proposed transit service. This analysis was a multi-step process that looks at where people live and within Carpentersville. It utilized 2010 Longitudinal Employment-Household Dynamics (LEHD) data, which taps into state unemployment data to determine actual commute travel patterns.

The data provides a good representation of those individuals who are workers but who are not self-employed - those Carpentersville residents who would most likely be users of transit service. This analysis focuses on the travel between residences and places of employment within the Village of Carpentersville.

As shown in Figure 3-1, the Village of Carpentersville was divided into six areas for purposes of this analysis, and commute flows between these districts was calculated using the LEHD data. In the figure, colored numbers represent population within each district, and the black number represents commute flows; thicker arrows represent a larger commute flow (more people commuting). For instance, 1,975 live in the West district, and 10 of those residents commute to the West River district for work.

Figure 3-1: Commute Flows within Carpentersville*



Source: US Census, 2010 LEHD

**Colored numbers represent population, black number represent commute flows within Carpentersville.*

The analysis found that commute flows are unlikely to be efficiently served by modifications to existing Pace bus service because the Village's low transit mode share (two percent), when applied to existing ridership levels, is not sufficient to generate the ridership necessary to support the route expansion/modification that would be necessary to serve even the largest inter-Village commute flows. There is the potential that ridership could be increased by working with local employers to encourage higher levels of transit ridership by offering pre-tax transit passes or employer-based options to subsidize employee transit usage, and by reviewing Village parking requirements.

The Travel Market Analysis found that Carpentersville's travel market would be best served by a vanpool alternative. Carpentersville's high percentage of carpooling (12 percent) may indicate that there is latent demand for vanpool service or other services which take advantage of Village residents' common origins and destinations, but are designed to serve groups of between five and 15 individuals.

4.0 Transit Investment Options

The next step of the project was to develop a series of transit improvement options for further refinement and consideration based on the framework created during the Existing Conditions phase and travel market identified during the Travel Market Analysis phase.

Options developed during this phase (documented in detail in Appendix C) included a variety of scenarios, ranging from minor modifications of the existing transit network to more efficiently serve the needs of existing riders to the creation of employer-supported transportation options that link specific employment centers with Village residential neighborhoods. The goal was to include transit alternatives that were innovative and specific to Carpentersville, but also operationally feasible. Transit infrastructure elements, including transit stop locations, sidewalks, and bike paths were also addressed.

Staff from Pace were consulted when considering modifications to the existing transit system, and the consultant team leveraged the employer outreach conducted during the Existing Conditions phase and conducted additional employer outreach to develop employer-based service concepts.

The options identified and developed during these phase, as shown in Table 4-1, included:

- Demand response programs
- Pace Vanpool Programs
- Modifications to existing Pace fixed route bus service
- Infrastructure investments to support improved access to transit

It was recommended that the Municipal Vehicle Program, Traditional Vanpool Program, and Employer Shuttle Program be carried forwarded into further refinement, along with a series of suggested infrastructure improvements to support access to transit service. A summary of the rationale for these recommendations can be found in Table 4-1.

Additional detail regarding each of the options considered can be found in the Transit Investment Options Report (Appendix C).

Table 4-1: Summary of Evaluation of Initial Alternatives to Further Investigate

Alternatives	Carry Forward?	Rationale
Demand Response Programs		
Pace Call-n-Ride	*No*	*Comparatively low estimated ridership*
Community Vehicle Program		
Locally-Based Program	*No*	*Village responsible for vehicle maintenance costs*
Municipal Vehicle Program	Yes	Pace responsible for vehicle maintenance costs
Pace Vanpool Programs		
Traditional Vanpool Program	Yes	Complements travel demand; costs borne by vanpool participants
Employer Shuttle Program	Yes	Complements travel demand; costs borne by employers
Metra Feeder Program	*No*	*Travel demand for this service does not originate at Metra stations*
Modifications to Fixed Route Service		
Route 543 Restructure	*No*	*Additional operating costs required; loss of service to residents north and east of Meadowdale Shopping Center; operates on narrow residential streets*
Route 803 Restructure	*No*	*Additional operating costs required; operation on narrow residential streets*
Improved Access to Transit		
Transit-Friendly Infrastructure	Yes	Enhances access to transit; supports ridership

5.0 Evaluation of Alternatives - Recommendations

The Evaluation of Alternatives Report (Appendix D) documents the refined definition and evaluation of each of the three vehicle-based transit investment options that were recommended for further study in the Transit Investment Options Report. The definition of these transit investment options included vehicle type, general service plans, staffing requirements, ridership, the number of vehicles required, capital and operating and maintenance costs, and potential sources of funding, and is summarized in Table 5-1.

Table 5-1: Description of Transit Alternatives

	Pace Traditional Vanpool Program	Pace Municipal Vehicle Program	Pace Employer Shuttle Program
Vehicles owned by…	Pace	Pace	Pace
Driver provided by…	Vanpool participant	Village of Carpentersville	Employer or shuttle participant
Annual costs per van	Monthly; varies based on number of riders $250 deposit made by the primary driver $75 deposit per passenger	~$60,000 annually $1,000 security deposit	$750 month $9,000 annually $1,000 security deposit

	Pace Traditional Vanpool Program	Pace Municipal Vehicle Program	Pace Employer Shuttle Program
Costs include…	Vehicle Fuel Maintenance Insurance Emergency roadside assistance Car washes	Vehicle ($100/month) Fuel Maintenance Emergency roadside assistance Part-time driver (must be procured by the Village) Part-time clerk (must be procured by the Village)	Vehicle Fuel Maintenance Insurance
Costs paid by…	Riders, directly to Pace	Village of Carpentersville, with possible partial contributions from third party sponsor, grants, and/or riders	Employer
Rider fares charged?	Yes, directly to Pace	Decided by the Village	With prior approval from Pace
Travel Time	Comparable to personal automobile trip	Comparable to or slightly longer than an automobile trip	Comparable to personal automobile trip
Accessibility	Wheelchair accessible vehicles available	Wheelchair accessible vehicles	Wheelchair accessible vehicles available
Walk Distance	From closest parking lot	From closest curb or parking lot	From closest parking lot

5.1 Recommendations

Based on this definition and evaluation of alternatives, it is recommended that the Village support implementation of the Pace Traditional Vanpool Program in the near-term. The Traditional Vanpool program will increase awareness of commuting options by employees and build a rider base while the Village identifies funding sources and pursues Municipal Vehicle Program implementation. It is recommended that the Village work toward implementation of the Municipal Vehicle Program in the mid-term. Due to the heavy administrative burden and costs that would be the responsibility of local employers, the Employer Shuttle Program is not recommended at this time. It is also recommended that complementary infrastructure investments that improve access to transit are pursued in the mid- and long- terms.

Table 5-2: Recommended Alternatives

Alternatives	Timeframe	Rationale
Pace Traditional Vanpool Program	Near-term	Efficiently connects Carpentersville residents with major Carpentersville employers; No financial contribution from the Village or employers; Utilized by employees with administration by Pace; Can build a ridership base for the Pace Municipal Vehicle Program

Alternatives	Timeframe	Rationale
Pace Municipal Vehicle Program	Mid-term	Efficiently connects major concentrations of Carpentersville residents with major Carpentersville employers; Can provide a connection from regional fixed route transit services to Carpentersville employers; Program is administered and funded by the Village; Costs can potentially be offset by fares and third party funding sources
Transit-Supportive Infrastructure Improvements	Mid-term	Infrastructure improvements will support the mobility of transit users, pedestrians, and bicyclists
Pace Employer Shuttle	*Not recommended*	*High administrative costs and requirements*

5.2 Pace Traditional Vanpool Program

The Pace Traditional Vanpool Program should be pursued in the near-term, particularly in areas where there are multiple employers close together, such as the industrial parks off Commerce Parkway (including Trim-Rite and Dana Molded Products), Tamarac Drive/Maple Avenue (including Stanley Machining and Tool Corporation), and the Washington/Main area (including OTTO and Revcor). Pace representatives will introduce the vanpool concept to employees, help encourage participation, and administer the program.[1]

The Pace Traditional Vanpool is a competitively-priced commuting option, ranging from approximately $1.75 to $2.67 each way, depending on the number of people in the vanpool. In addition, with the exception of rider recruitment and employer education, the program does not require an on-going subsidy from the Village of Carpentersville or an additional efforts or financial contribution from local employers.

Based on the range of potential transit riders, and assuming that commuters who are currently informally carpooling would shift to a vanpool, it is likely that - with proper marketing - Carpentersville could support several vanpools. Employers and/or the Village could work with Pace to hold a Pace Employer Day to introduce the program to employees.

5.3 Pace Municipal Vehicle Program

This program would be used to serve Carpentersville residents and employers, as well as regional residents, with an initial focus on:

- The residential areas east of Route 25, along Route 25, and east of the Fox River north of Main Street
- The employment areas of Commerce Parkway (including Trim-Rite and Dana Molded Products), Tamarac Drive / Maple Avenue (including Stanley Machining and Tool Corporation), and the Washington / Main area (including OTTO and Revcor)
- Regional residents from communities outside of Carpentersville that could use the service to connect to Carpentersville employers from Pace routes 543 and 803.

[1] http://pacebus.com/sub/vanpool/employer_information.asp

These potential residential and employment service locations are shown in Figure 5-1.

It would require the Village of Carpentersville to partner with Pace for vehicles and operations, and hire additional staff (part-time clerk and part-time driver). The costs would be approximately $60,000 a year, initially, to operate the service, although a portion of this cost could be offset with passenger fares. Participating employers may also choose to financially contribute to the program, and program funding may also be provided through a variety of grants.

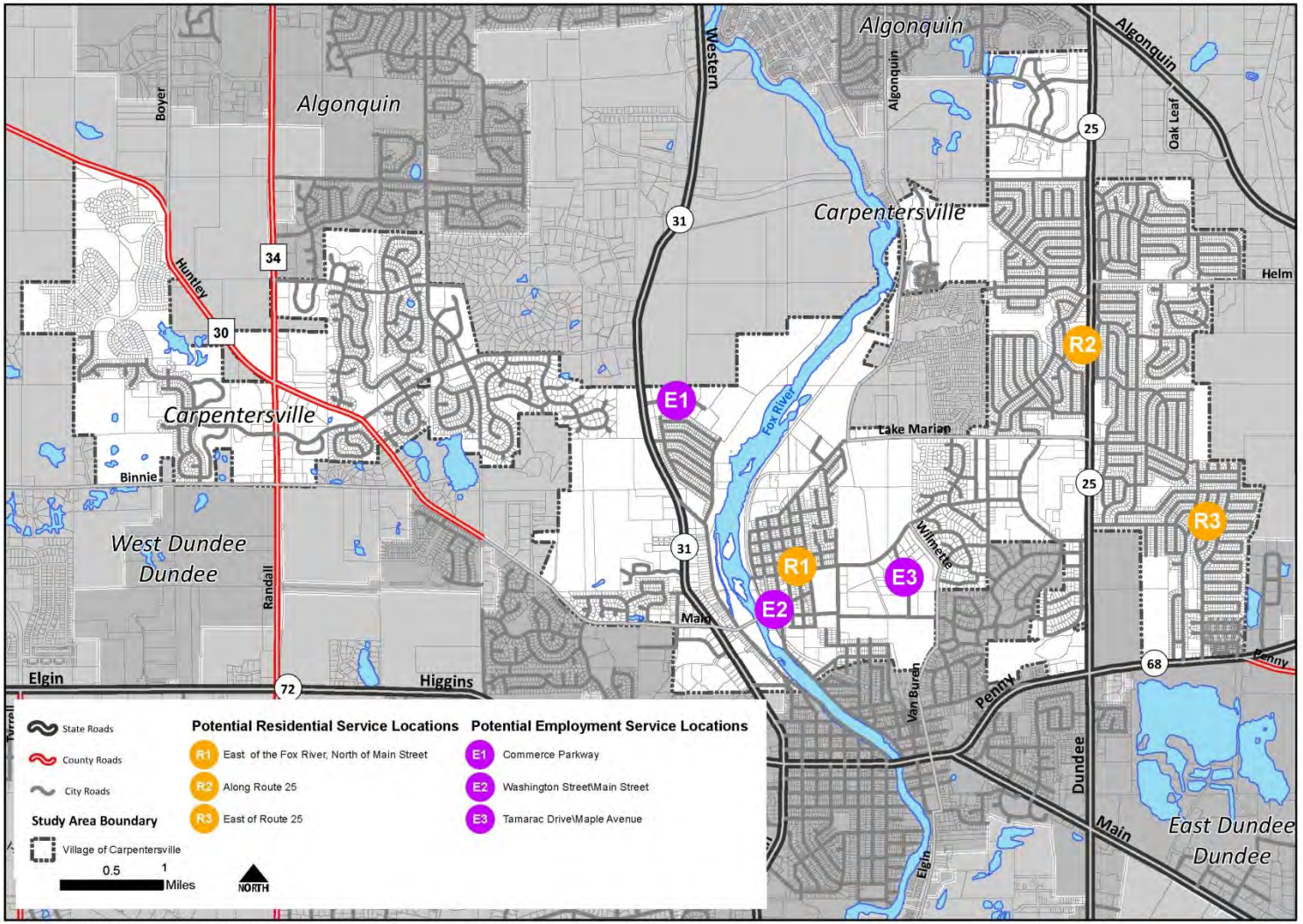
If the service became successful and ridership approaches the high end of the potential ridership range, it would incur additional costs for the Village of Carpentersville that would be incremental and relative to the degree of growth. Two or three vehicles would likely be required to accommodate the high end of the potential ridership range, depending on the time of day that trips are occurring and the ability to serve multiple riders per trip. Costs would continue to incrementally increase as additional riders and additional employment centers are served.

5.4 Recommended Improved Access to Transit

A series of recommended infrastructure investments to improve access to transit were included in the Transit Investment Options report. While some recommendations were designed to improve access to Pace fixed route bus service (a transit alternative that was subsequently eliminated from consideration), the report does recommend targeted upgrades to the pedestrian environment around major Carpentersville employers as a means to support vanpool service. These recommendations, the details of which can be found in the report, include:

- Enhance intersections and mid-block crossings for pedestrian safety (signalization, signage)
- Reduce the number of driveways (reduces opportunity for driver/pedestrian conflicts)
- Complete the sidewalk network (a continuous sidewalk supports safe pedestrian movement)
- Encourage shared parking (reduces overall traffic volume)
- Improve streetscape elements (plants, paving, street furniture and signage can visually cue drivers to reduce speed as they enter a pedestrian zone)

Figure 5-1: Pace Municipal Vehicle: Potential Service Locations



Pace Municipal Vehicle Program: Potential Service Locations

Carpentersville Transit Improvement Plan

6.0 Implementation Plan

The Implementation and Funding Plan identifies the individual actions necessary to implement the transit service improvements as recommended in the Evaluation of Transit Alternatives Report:

- START UP ACTIVITIES: Implementation of the recommended actions will require the Village and its partners to establish a process to pursue these actions. (Reference Table 6-1)

- NEAR-TERM IMPROVEMENT: Pace Traditional Vanpool Program, focused on areas where multiple employers are located close together, such as the industrial parks off Commerce Parkway (including Trim-Rite and Dana Molded Products), Tamarac Drive/Maple Avenue (including Stanley Machining and Tool Corporation), and the Washington/Main area (including OTTO and Revcor). (Reference Table 6-2)

- MID-TERM IMPROVEMENT: As the Pace Traditional Vanpool Program is under way, The Village should pursue implementation of the Pace Municipal Vehicle Program as a transit option for Carpentersville residents who work in the three selected employment areas (Commerce Parkway, Tamarac Drive/Maple Avenue, and Washington Street/Main Street) and the three selected residential areas (East of the Fox River north of Main Street, Along Route 25, and East of Route 25). (Reference Table 6-3)

- MID-LONG IMPROVEMENT: Infrastructure investments to improve access to transit focused on upgrades to the pedestrian environment around major Carpentersville employers as a means to support vanpool service. (Reference Table 6-4)

This Implementation Plan should be used by the Village, major employers, residents, the RTA and Pace to determining the most appropriate allocation of staff time and resources. Potential funding sources includes a comprehensive list of local, regional/state/federal (federal sources are distributed by regional and state agencies), and private grant funding sources that may be applicable for each action. Many recommendations in this plan require minimal additional funding to complete, although staff time is a resource that is necessary for a majority of the tasks.

6.1 Implementation Plan

The detailed implementation activities are described in the table below. The implementation actions, presented by recommended improvement, offer a description of the task and responsible organization to complete the action. General time frames have been assigned for each action. Time frames include near-term (1-2 years), mid-term (3-4 years), and long-term (5+ years). Potential funding sources to be pursued are recommended, although additional funding sources should also be considered as possible.

Table 6-1: Implementation Matrix – START UP ACTIONS

Implementation Action	Timeframe	Responsible Parties	Potential Funding Sources
Designate Transportation Coordinator within the Village to lead overall coordination, planning, and funding of transit improvements	Near	Village	Staff time
Establish transit improvement task	Near	Village, Pace, RTA,	Staff time

Implementation Action	Timeframe	Responsible Parties	Potential Funding Sources
force consisting of targeted businesses, organizations, and agencies to be involved with supporting and implementing transit improvements		employers, organizations	
Establish communication/outreach plan between Village, Pace, and major employers, which should also include Spanish-speaking communications	Near	Village, RTA, Pace	Staff time
Meet with major employers to raise awareness of transit alternatives, future improvements, funding needs, and marketing needs	Near/On-going	Village, employers, Pace	Staff time
Establish coordination with Kane County, Ride-in Kane, Kane/Kendall Council of Mayors (KKCOM)	Near/On-going	Village, Kane County, KKCOM	Staff time

Table 6-2: Implementation Actions –Pace Traditional Vanpool Program

Implementation Action	Timeframe	Responsible Parties	Potential Funding Sources
Complete traditional vanpool phasing, marketing, and monitoring program	Near	Major Employers, Village, Pace	Staff time
Pace and Village staff introduce traditional vanpool concept to employers/employees, help encourage participation, and administer the program	Near	Village, employers, employees, Pace	Staff time
Promote transit and traditional vanpool opportunities via Village communication network (newsletters, website, list serves, etc.)	Near	Village	Village
Employers, with Pace coordination, work to continue traditional vanpool program and consider use of incentives such as preferential parking and guaranteed ride home	Near	Employers, Pace	Employers (optional incentives)
On-going monitoring of vanpool program. Report progress to community partners	Near/On-going	Employers, Pace	Staff time

Table 6-3: Implementation Matrix – Pace Municipal Vehicle Program

Implementation Action	Timeframe	Responsible Parties	Potential Funding Sources
Research potential funding resources for transit improvements and pedestrian-friendly infrastructure implementation	Near	Village, RTA	Staff time – Village, Pace, RTA
Encourage participation with business organizations such as Chamber of Commerce	Near	Village, employers	Staff time

Implementation Action	Timeframe	Responsible Parties	Potential Funding Sources
Establish coordination with Kane County, Ride-in Kane, Kane/Kendall Council of Mayors (KKCOM)	Near	Village, Kane County, KKCOM	Staff time
Establish public-private partnership with major employers for participation with Municipal Vehicle Program to include funding, marketing, promotion	Mid	Village, major employers	Staff time
Complete Municipal Vehicle Program phasing, marketing, and monitoring program	Mid	Village, Pace, RTA	Staff time
Research potential funding resources in support of Municipal Vehicle Program	Mid	Village, Pace, RTA	Staff time
Begin phased implementation of Municipal Vehicle Program service	Mid	Village, Pace, RTA	Village, Pace, SSA/TED/BID, CMAQ, Private – Partners for Places, Surdna Foundation
Identify transit & pedestrian infrastructure improvements in support of Municipal Vehicle Program	Mid	Village, Pace	Staff time
On-going monitoring of Municipal Vehicle Program. Report progress to community partners	Mid/On-going	Village, Pace	Staff time

Table 6-4: Implementation Matrix – Improve Access to Transit

Implementation Action	Timeframe	Responsible Parties	Potential Funding Sources
Develop and approve transit and pedestrian-friendly infrastructure policies within the Village. Revise 2007 Village Design Guidelines as necessary	Mid	Village, Pace, RTA	Staff time
Establish transit and pedestrian infrastructure priorities for grant applications	Mid-Long	Village, RTA	Staff time
Coordinate with IDOT, Kane County, and Kane/Kendall Council of Mayors regarding pedestrian & bicycle infrastructure improvements	Mid-Long	Village, IDOT, Kane County, KKCM	Staff time
Implement transit and pedestrian infrastructure improvements	Mid-Long	Village, IDOT, Kane County, KKCM	STP, Motor Fuel Tax, TIF, CMAQ, ITEP
Work with Pace to continue improves to bus stop locations with shelters and real-time information	Mid-Long	Village, Pace	Motor Fuel Tax, CMAQ, ITEP

6.2 Funding Tools

This section summarizes the most relevant funding tools that could be considered to implement the transit improvement plan and provides a brief description of the funding sources available to the Village, transportation and transit agencies who may serve as implementation partners, local businesses, and non-profit organizations (such as chambers or community development corporations). Transit

improvements will require a combination of funding tools from various levels of government. The use of locally-controlled funding tools will be essential. Based on national experience, local funding tools are critical in the implementation of planning initiatives because local funding tools empower municipalities to guide project execution and provide timely assistance.

6.2.1 Coordination with Private Sector

Implementing these recommendations will require a coordinated effort among the Village of Carpentersville, the RTA, Pace, and major employers who are all involved and supportive of providing improved transit services and pedestrian mobility. It is recommended that the following actions be taken to support such a public-private partnership:

- The Village should designate a transportation coordinator to coordinate with the various stakeholders to implement study recommendations.
- The Village should establish a communication/outreach plan with employers, building owners, and building managers for on-going communication regarding existing issues and potential improvements/approaches to enhancing mobility.
- All partner agencies, including Pace, RTA, Carpentersville, and employers should commit to on-going coordination regarding implementation and monitor progress.

6.2.2 Potential Funding Sources

Potential funding sources can include a mix of local, regional, state, and federal grants along with potentially private grant foundation funds. Locally-controlled funding mechanisms can supplement the Village's ability to use local revenues for transportation improvement opportunities. These funding mechanisms can provide a supplement the Village's general revenues. Funding for transportation related implementation work is also available from federal, state, and regional sources. Additionally, foundations, private sector entities, and individuals may provide grants to support economic transportation activities, particularly related to access to jobs.

Locally-controlled funding sources are presented first, followed by regional/state/federal sources (federal sources are distributed by regional and state agencies), and finally by private foundation grant sources. Summary tables (Tables 6-5 through 6-7) for each funding source category are presented with key summary notes and an at-a-glance guide to the types of Plan elements to which they may apply. More detailed descriptions of the funding tools follow the tables.

6.3 Conclusion

Many funding sources have been identified in this document. However, not only is there significant competition for these funds, there can be requirements and limitations to accessing funds. These could include:

- Local match requirements, ranging from 20 percent to 50 percent
- Funds typically cannot be applied to a stand-alone project – project must be part of an overall social program (i.e., job creation/retention, air quality, jobs-housing connections, access to education, reduce poverty, etc.)
- Funds typically cannot generally be used for salaries
- Limited funding for operating costs
- Some funding granted only to non-profit organizations

As previously noted, staff time will be a valuable resource for researching and applying for funding, planning and managing the improvement project, and coordination with agencies and employers. The

Village should working in coordination with other agencies such as the County, RTA, or CMAP in searching for funds that may support more regional goals in addition to the Village's goals.

To implement improvements most effectively and efficiently, the Village of Carpentersville must implement improvements in cooperation with other agencies, such as Kane County, the RTA, Kane/Kendall Council of Mayors, and various state agencies. Additionally, developing public-private partnerships will be critical to the success of the program.

6.2.2.1 Locally-Controlled Funding Sources

Table 6-5: Local Funding Sources

Funding Source	Program Name	Program Description	Types of Projects Funded	Who Can Apply?	Other Information	Website
Local	Public-Private Partnership	Collaborative investment between public and private sectors	Planning/engineering; construction; maintenance; operations; public outreach; land acquisition	Municipal; Agency; Council of Gov't	Subject to eligibility per state statutes; deal structure varies from joint development to operations/leasing/maint of pubic assets	n/a
Local	Special Service Area (SSA)	A SSA is a taxing mechanism that can be used to fund a wide range of special or additional services and/or physical improvements in a defined geographic area within a municipality or jurisdiction. This type of district allows local governments to establish such areas without incurring debt or levying a tax on the entire municipality.	Planning/engineering; construction; maintenance; operations; public outreach	Municipal; Agency; Council of Gov't	Subject to agreement by majority of property owners; managed by local chamber, gov't, or non-profit	n/a
Local	Business Improvement District	A business improvement district (BID) is a public-private partnership in which businesses in a defined area pay an additional tax or fee in order to fund improvements within the district's boundaries. BIDs may go by other names, such as business improvement area, business revitalization zone, community improvement district, special services area, or special improvement district. BIDs provide services, such as cleaning streets, providing security, making capital improvements, and marketing the area. The services provided by BIDs are supplemental to those already provided by the	Planning/engineering; construction; maintenance; operations; land acquisition	Municipal; County; Agency/ MPO, Council of Gov't		n/a
Local	Transportation Enhancement District	Created by groups of municipalities to manage parking and transportation resources.	Planning/engineering; construction; maintenance; operations; land acquisition	Municipal	Potential funding for local transportation improvements	n/a

(a) Public-Private Partnerships/Employer Contributions

"Public-private partnerships" is an umbrella term that describes collaborative investment between the public and private sector. Examples range from simple joint development of facilities to highly complex deals for leasing, operating and maintaining public assets. Partnerships could be established through legal negotiations and performance standards. When there is a direct link to a specific improvement (intersection improvement, turn lanes, sidewalks, etc.) developers are typically required to contribute funding for the improvement.

A local example of a public-private partnership is the Lake-Cook "Shuttle Bug" Program, which provides employer shuttle services on Pace Suburban buses to nearby Metra stations. The Shuttle Bug program is a public-private partnership between Transportation Management Association (TMA) of Lake Cook, Pace Suburban Bus, Metra Commuter Rail and area businesses to provide convenient shuttle service connections between participating businesses and Metra stations. Door to door shuttle service from Metra /CTA Stations to employer sites are provided on fully accessible Pace buses. Operational costs are shared between Pace, Metra, and area businesses. The Shuttle Bug program is managed by the TMA.

Benefits of the Shuttle Bug program are realized by all partners: employers sharing expenses which reduce overall costs to each employer, TMA program management minimizes employer program administration, increases ability to attract and retain quality employees, and reduces employee commuting costs.

(b) Illinois Motor Fuel Tax Revenue

About 20 percent of the State's Motor Fuel Tax (MFT) revenues are appropriated to municipalities in proportion to population. Counties, Townships, and Road Districts also receive allocations. MFT funds are collected at the sale of gasoline, on a per gallon basis. These funds can be used for infrastructure expenses in coordination with the Illinois Department of Transportation (IDOT). Typical projects include: engineering services; roadway reconstruction; sewer improvements; bicycle paths, lanes, signs, and parking facilities; pedestrian subway or overhead crossings; sidewalks; off-street parking facilities; and street lighting systems.

(c) Tax Increment Financing

Value capture mechanisms, such as Tax Increment Financing (TIF), can be used to guide the types of development that might not otherwise occur in an area by encouraging developers to construct buildings or other private improvements, and/or by paying for public improvements, such as streets, sidewalks, sewer and water, and similar improvements. Optimally, TIF funds are used strategically to help provide long-term benefits to both the immediate area and to the city and county, creating an improved tax-base for when the term of the funding program expires.

TIF works by capturing new property tax revenues within a specific area and reinvesting them in that area for a period of 23 years. TIF districts are currently established in Illinois on the basis of detailed eligibility criteria reflecting conditions of economic stagnation and blight, but other states and communities are exploring utilization of TIF districts on a voluntary basis to capture the value from improvement projects in a non-blighted area, such as new transit infrastructure, which would be channeled back to pay for capital or operating costs.

(d) Special Service Areas

Special Service Areas (SSA) can be used as a funding tool available for financing public-facing projects whose benefits can be appreciated by the community as a whole. SSAs, also known as Business

Improvement Districts (BIDs) and Special Improvement Districts (SIDs), are a useful tool for improving, managing, and maintaining a defined district.

SSAs are used in downtowns, business districts, neighborhoods, parks, and industrial areas to provide funding for infrastructure, maintenance, programs, and other business-related activities. An SSA can be used in conjunction with a TIF, but involves fewer setup and maintenance processes than a TIF. It is an extra property tax on a defined set of properties (called the "service area") that reinvests 100 percent of that tax revenue back into the service area. The SSA budget is typically administered by a local organization such as a Chamber of Commerce or business association.

SSA funds may be used within the service area boundaries for a variety of activities, such as:

- Recruitment and promotion of new businesses and retention and promotion of existing businesses within the service area
- Coordinated marketing and promotional activities
- Strategic planning for the general development of the service area
- Other technical assistance activities to promote commercial and economic development including, but not limited to streetscape improvements, strategic transit/parking improvements, and parking management studies

SSAs are authorized through State law (Illinois Compiled Statutes, Revenue, and Property Tax Code 35 ILCS 200). To create an SSA, first the boundaries and service area are established. The budget for the service area is created by multiplying the total of equalized assessed property values (EAV) for the properties in the service area by a selected SSA tax rate, usually less than, or near, one percent of the EAV. If a majority of the property owners of record in the service area agree with the SSA, an ordinance is established defining the duration of the SSA.

(e) Transportation Enhancement District

A TED is a local development tool that helps communities better manage transportation resources while supporting both economic development and mobility. Parking TEDs charge market rates for parking on the street or in off-street public spaces and use part of the increased revenue to make the area more accessible. Other TEDS may fund bicycle and pedestrian infrastructure, or more general transportation improvements and amenities. TEDs are managed like an SSA. These districts can be used to make the area more pedestrian-oriented and connected to the larger neighborhood, improve transit connections, invite more bicycling, and revitalize the streetscape to reflect the character of the neighborhood, and provide a degree of local control over transportation amenities that reflect local priorities.

6.2.2.2 Regional, State, and Federal Funding Sources

Table 6-6: Regional, State, and Federal Funding Sources

Funding Source	Program Name	Program Description	Types of Projects Funded	Who Can Apply?	Other Information	Website
Regional/Council of Mayors	Surface Transportation Program (STP)	Provides funding for projects that improve public transportation or bicycle and pedestrian facilities. It is administered locally by CMAP, IDOT, and Council of Mayors. Applications are submitted to local Council of Mayors, with competition for funds only among the other members of that council. Administered locally by CMAP.	Planning/engineering, construction; maintenance	Municipal; Agency/MPO; Council of Gov't	20% local match	http://www.cmap.illinois.gov/council-of-mayors
Regional/Chicago Metropolitan Agency for Planning (CMAP)	Congestion Mitigation Air Quality (CMAQ) Program	Provides funding for projects that improve air quality, such as pedestrian and bicycle facilities or projects promoting greater transit ridership. Administered locally by CMAP.	Planning/engineering; construction; operations	Municipal; Agency/MPO; County		http://www.cmap.illinois.gov/mobility/strategic-investment/cmaq
Illinois Department of Natural Resources	IL Bicycle Path Program / IL Recreational Trails Program	Acquisition, construction and rehabilitation of public, non-motorized bicycle paths and trails.	Planning/engineering, construction	Municipal; County; Agency/MPO; Council of Gov't	IBPP requires 50% match. IRTP requires 20% match. Both limited to 200,000	http://www.dnr.state.il.us/ocd/newbike2.htm http://www.dnr.state.il.us/ocd/newrtp2.htm
USDOT/FHWA	Pedestrian & Bicycle funding (various programs)	FHWA published a listing of funding sources for pedestrian and bicycle projects – *Bicycle and Pedestrian Funding Opportunities: Federal Transit and Federal Highway Funds, r* evised August 13, 2014, to incorporate programs authorized under the Moving Ahead for Progress in the 21st Century Act (MAP-21).	Planning/engineering; construction; land acquisition	Municipal; County; Agency/MPO	Requirements vary by source	http://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm
USDOT/IDOT	Transportation Alternatives Program (TAP) – IL Transportation Enhancement Program (ITEP)	Provides funding for projects that provide and support alternate modes of transportation, enhance the transportation system, and improve quality of life. ITEP requires communities to coordinate efforts to develop and build safe, valuable and functional projects in a timely manner.	Planning/engineering; construction; land acquisition	Municipal	20% local match; apps typically due in fall	http://idot.illinois.gov/transportation-system/local-transportation-partners/county-engineers-and-local-public-agencies/funding-opportunities/ITEP
Regional	RTA – Section 5310	Provides funding for transit projects to assist with the needs of seniors and individuals with disabilities.	Planning/engineering; operations	Municipal; County	20% local match; apps typically due in fall	http://www.rtachicago.com/section-5310/section-5310.html

(f) Surface Transportation Program via Kane/Kendall Council of Mayors (KKCOM) and Kane County Division of Transportation (KCDOT)

The Surface Transportation Program (STP) provides flexible funding that is used by states and localities on any federal-aid highway, bridge projects on any public road, transit capital projects, and bus terminals and facilities. The federal share for the program generally is 80 percent. The eleven subregional councils, one of which is the Kane/Kendall Council of Mayors, are responsible for programming federal STP funds for transportation improvements each year and are key players in the development of the region's Transportation Improvement Program (TIP) and Regional Transportation Plan.

Planning funds became available to the subregional councils to ensure that transportation planning in the northeastern Illinois region remained "cooperative, comprehensive and continuing." The Kane/Kendall Council of Mayors contracts with CMAP through the Kane County Division of Transportation to retain transportation planning staff, who, with the approval of locally elected officials, works in partnership with the County relative to transportation planning and programming. The Planning and Programming Department provides administrative and technical support to the Kane/Kendall Council of Mayors program. The County contributes the required 20% match. The Kane/Kendall Council of Mayors receives approximately $6.5 million a year in STP funds.

Approximately every three years, the Council has a call for all eligible projects. Examples of eligible project types include:

- Roadway rehabilitation, reconstruction, restoration
- Widening / add lanes
- Intersection improvements
- Traffic signal improvements
- Transit & bicycle and pedestrian projects

The projects are ranked according to the KKCOM methodology. The rankings are utilized by the Transportation Policy Committee to prepare a programming recommendation. The Policy Committee program recommendation is forwarded to the Full Council for final approval. The program is submitted to CMAP to be developed into the regional Transportation Improvement Program (TIP), the northeastern Illinois five year agenda of transportation projects.

Website: http://www.co.kane.il.us/dot/com/

(g) Congestion Mitigation Air Quality Improvement Program

Congestion Mitigation and Air Quality (CMAQ) is a federally-funded program part of the surface transportation improvements designed to improve air quality and to mitigate congestion. Eligible projects may include transit improvements, commuter parking, traffic flow improvements, and pedestrian and bicycle enhancements. Projects are submitted for northeastern Illinois through the Chicago Metropolitan Agency for Planning (CMAP). CMAQ grants are awarded each fiscal year dependent on available funding from the Congressional appropriation of funds. The federal transportation authorization legislation, Moving Ahead for Progress in the 21st Century (MAP-21), does not extend the authority to fund CMAQ projects at 100 percent federal in FFY 2013 and beyond. CMAQ funded phases will require a minimum of 20 percent local match.

Project proposals from the public and private sector are welcome. Projects not submitted by a state agency or local government must have an appropriate sponsor. A sponsor is any state agency or unit of government having the authority to levy taxes and those agencies authorized to receive FTA Section 5307 funding. Sponsors can include, but are not limited to counties, municipalities, townships, park districts, forest preserve districts, and library districts. Project applications submitted by local sponsor agencies are required to be reviewed by their subregional planning area staff (Council of Mayors' Planning Liaisons). The sponsor must have already committed matching funds when the project is submitted to CMAP. Proposals which indicate that the sponsor will pay more than the minimum local match will be identified for the CMAQ Project Selection Committee and may be given extra consideration.

Local match is a minimum of 20 percent of the total CMAQ funds being requested (some exceptions may apply for a few project types). The local match does not necessarily have to be provided by the sponsor. Several avenues exist through which other funding may be available, but it must be a non-federal source to qualify as match. A firm deadline of two years past the programmed year will be instituted for the accomplishment of each phase. If the phase is not completed on time, regardless of the reasons, the funding for remaining phases will be removed and that work placed on a deferred project list.

Projects are evaluated, in part, on their ability to help implement the goals and objectives of the region's adopted comprehensive plan, GO TO 2040.

Website: http://www.cmap.illinois.gov/mobility/strategic-investment/cmaq

(h) Pedestrian and Bicycle Funding Programs

There are various financial resources for bicycle and pedestrian infrastructure improvements (in addition to more comprehensive programs such as CMAQ or ITEP). The Illinois Department of Natural Resources (IDNR) administers several outdoor recreation grant programs that may be applicable to specific access to transit improvements in Carpentersville.

Illinois Bicycle Path Program

The IDNR Bicycle Path Program helps with the acquisition, construction and rehabilitation of public, non-motorized bicycle paths and directly related support facilities. Applications must be received by IDNR by March 1 of each calendar year. Applications are evaluated on a competitive basis according to criteria set by the Department. Grant awards are generally announced within six months following the application deadline date. Eligible project costs include:

- Linear corridor land acquisition costs, including associated appraisal fees; and
- Bicycle path development or renovation including site clearing and grading, drainage, surfacing, bridging, fencing, signage, and directly related support facilities such as potable water and restroom facilities.

Financial assistance up to 50% of approved project costs is available through the program. Maximum grant awards for development projects are limited to $200,000 per annual request; no maximum exists for acquisition projects.

Website: http://dnr.state.il.us/ocd/newbike2.htm.

Illinois Recreational Trails Program

The IDNR Recreational Trails Program (RTP) program can provide up to 80% federal funding on approved projects and requires a minimum 20% non-federal funding match. Applications for grant assistance must

be received by IDNR no later than March 1 of each calendar year. Awards are generally announced within 180 days following the application deadline date.

Examples of eligible project activities include:

- trail construction and rehabilitation
- restoration of areas adjacent to trails damaged by unauthorized trail uses;
- construction of trail-related support facilities and amenities
- acquisition from willing sellers of trail corridors through easements or fee simple title

Website: http://dnr.state.il.us/ocd/newrtp2.htm

Additionally, the Federal Highway Administration (FHWA) has published a listing of funding sources for pedestrian and bicycle projects – *Bicycle and Pedestrian Funding Opportunities: Federal Transit and Federal Highway Funds, r*evised August 13, 2014, to incorporate programs authorized under the Moving Ahead for Progress in the 21st Century Act (MAP-21). This website presents a table indicating potential eligibility for pedestrian and bicycle projects under Federal Transit and Federal Highway programs.

Website:
http://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm

(i) Transportation Alternatives Program (TAP) – Illinois Transportation Enhancement Program (ITEP)

The Transportation Alternatives Program (TAP) was authorized under the federal transportation bill, Moving Ahead for Progress in the 21st Century Act (MAP-21). The TAP provides funding for programs and projects defined as transportation alternatives. The TAP will combine into one program three different previous programs: Transportation Enhancements (ITEP), Safe Routes to School, and Recreational Trails program.

The Illinois ITEP program is designed to promote alternative transportation options, including bike and pedestrian travel, along with streetscape beautification. The federal funds are awarded competitively, and any local or state government is eligible to apply. Local matching funds are required, and work must begin on the projects within three years. For the current round of funding, the Illinois Department of Transportation (IDOT) received 232 applications requesting ITEP federal funding totaling nearly $260.5 million. A project must fall into one of the eligible categories listed within the ITEP Guidelines Manual and also must relate to surface transportation in order to qualify.

Funding will be provided for up to 80 percent of the project costs. The remaining 20 percent is the responsibility of the program sponsor with the exception of street lighting and land acquisition which is funded at 50 percent for projects selected under the program.

Website: http://idot.illinois.gov/transportation-system/local-transportation-partners/county-engineers-and-local-public-agencies/funding-opportunities/ITEP

(j) Regional Transportation Authority

The Regional Transportation Authority (RTA) has funding programs to provide planning, operating, and capital funds for transit-related projects.

Section 5310

The Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program, funded by the Federal Transit Administration, is a program designed to improve mobility for seniors and individuals with disabilities throughout the country, by removing barriers to transportation services and expanding

the transportation mobility options available. Eligible projects include those that are planned, designed, and carried out to meet the special needs of seniors and individuals with disabilities when public transportation is insufficient, inappropriate, or unavailable. It may also be used for public transportation projects that exceed the requirements of the Americans with Disabilities Act of 1990 as amended (ADA) that improve access to fixed-route service and decrease reliance by individuals with disabilities on complementary paratransit, and for alternatives to public transportation that assist seniors and individuals with disabilities. For a project to be considered eligible for MAP-21 Section 5310 funding, it must be derived, as defined by FTA, from a locally developed Coordinated Public Transit- Human Services Coordinated Plan (HSTP).

Website: http://www.rtachicago.com/section-5310/section-5310.html

6.2.2.3 Private Foundation Funding Sources

Table 6-7: Private Foundation Funding Sources

Funding Source	Program Name	Program Description (as applicable)	Types of Projects Funded	Who Can Apply?	Other Info	Website
MacArthur Foundation	Community & Economic Development Program	Create vibrant, economically diverse neighborhoods, cities, and metropolitan regions.	General operating support, research, and program support.	Open - must submit letter of inquiry	Funding only those applications that closely match three related criteria that appear in program.	www.macfound.org/info-grantseekers
Living Cities	Connect Program	Increase affordable access to job opportunities and essential services by advancing equitable transit-oriented development financing strategies and exploring the potential of other emerging models.	Focused on advancing equitable transit-oriented development (equitable TOD) financing strategies around the country.	Community leaders in partnership with Living Cities members (other philanthropic and financial institutions)	Living Cities works with members and community leaders to identify funding opportunities. Unsolicited grant proposals are not accepted.	https://www.livingcities.org/work/connect
Funders' Network for Smart Growth and Livable Communities	Partners for Places	Matching grant program that creates opportunities for cities and counties in the United States and Canada to improve communities by building partnerships between local government sustainability offices and place-based foundations.	The project must advance at least one of the following: A key aspect of a community-focused sustainability, climate action, comprehensive plan provision that specifically addresses sustainability; a key aspect of any plan endorsed by the mayor or city manager that states the goal of balancing economic development, environmental quality, and equity; an area identified for performance improvement or implementation for Certified STAR Communities.	Local, place-based foundation, a public charity (501c3) created by a city or county government to accept grants, or a partnering nonprofit organization	1:1 match requirement	http://www.fundersnetwork.org/participate/green-building
Surdna Foundation	Sustainable Environments Program	Improve transit systems	Strengthen and expand the use of transportation project performance standards that improve transportation.	501(c) (3) or 501(c)(4) / Varies	Preference given to efforts that improve conditions and opportunities for communities	http://www.surdna.org/grants/grants-overview.html
Ford Foundation	Metropolitan Opportunity Grants	Applicable issue areas: Economic Fairness and Opportunity, Asset Building and Community Development, Natural Resources and Sustainable Development, Access to Education	Efforts to link transit-oriented development with affordable housing and initiatives that improve public transportation access between low-income communities and employment centers.	501 c 3, Government Agencies, Universities and more / Funding amount varies based on project	Types of support include grants, recoverable grants, loans and loan guarantees. No submission deadlines; applications are considered throughout the year.	http://www.fordfound.org/
Walmart Foundation	Community Grants	Workforce Development / Economic Opportunity	Varies - does not include general operating expenses, salaries, research projects (and various other exclusions).	Municipalities, Schools, Non-Profits, Churches / Varies	Project must benefit communities within the service area of a Walmart store, Sam's Club, or Logistics	http://walmartstores.com/CommunityGiving/8916.aspx

(k) MacArthur Foundation

The John D. and Catherine T. MacArthur Foundation supports creative people and effective institutions committed to building a more just, verdant, and peaceful world. In addition to selecting the MacArthur Fellows, the Foundation works to defend human rights, advance global conservation and security, make cities better places, and understand how technology is affecting children and society. MacArthur is one of the nation's largest independent foundations. Through the support it provides, the Foundation fosters the development of knowledge, nurtures individual creativity, strengthens institutions, helps improve public policy, and provides information to the public, primarily through support for public interest media.

The Foundation makes grants and loans through four programs: International Programs, U.S. Programs, Media, Culture, and Special Initiatives, and the MacArthur Fellows Program. U.S. Programs address issues in the United States, including community and economic development. The *Community and Economic Development Program* area seeks to create vibrant, economically diverse neighborhoods, cities, and metropolitan regions, guided by the belief that coordinated neighborhood redevelopment efforts that are supported by strong organizational and institutional relationships will result in better use of resources, more effective programs, and, ultimately, improved quality of life.

Grant guidelines help applicants determine whether their idea for a grant fits within a particular grant-making strategy. MacArthur can consider funding only those applications that closely match three related criteria that appear in program guidelines: topical focus addressed by the grant-making strategy; geographic area covered by the grant-making strategy; type of funding (general operating support, research, program support, etc.) that supports the grant-making strategy.

After reviewing MacArthur's program guidelines to determine what types of projects are supported and that MacArthur is accepting proposals in this area of work, the next step is to submit a letter of inquiry. If support is available according to MacArthur's grant-making guidelines, the next step is to submit a cover sheet and a letter of inquiry about the work being proposed. The Foundation will send an acknowledgment within five business days to confirm that the letter of inquiry was received, and will direct it to the appropriate staff members for review. The review process for eligible inquiries can take up to eight weeks, unless otherwise noted elsewhere. With few exceptions, as noted elsewhere, there are no fixed deadlines. According to the MacArthur Foundation website, inquiries regarding Community & Economic Development are not being accepted at this time.

(l) Living Cities

Founded in 1991 (formerly the National Community Development Initiative), with an initial focus of providing capital to and building capacity of local community development corporations. Living Cities uses resources of twenty-two of the world's largest foundations and financial institutions to build a new type of urban practice. Together, these foundations work with cross-sector leaders in cities to develop and scale new approaches to dramatically improve the economic well-being of low-income people.

Connect Program

Living Cities is working to increase affordable access to job opportunities and essential services by advancing equitable transit-oriented development financing strategies and exploring the potential of other emerging models. Expanding affordable access to job opportunities and essential services (education, training, and child care, health care and housing) can dramatically improve the economic well-being of low-income people. The current phase of the Connect work focuses on advancing equitable transit-oriented development (equitable TOD) financing strategies around the country.

Equitable TOD aims to create livable communities near quality transit corridors that allow residents, especially low-income residents, to affordably connect to jobs and essential services.

Knowing that transit is not an end, but rather a means for accessing opportunity and services, Living Cities is working to understand ways in which low-income people access job opportunities and essential services. For example, projects include researching the potential of new shared transportation models such as bike-share and car-share to increase access for low-income communities. In 2010, Living Cities created The Integration Initiative (TII) - a cross-sector group of leaders from a limited number of cities - committed to learning how to achieve needle moving outcomes for low-income people.

This past fall, Living Cities undertook a major exploration of new potential grantee sites for the second round of The Integration Initiative (TII). One goal for this work was to expand Living Cities' geographic footprint. Since the current portfolio is concentrated in the Northeast and Midwest, new sites in the South, Southwest and West are being identified. Living Cities works with members (other philanthropic and financial institutions) and community leaders to identify funding opportunities. Unsolicited grant proposals are not accepted.

Website: https://www.livingcities.org/work/connect

(m) Funders' Network for Smart Growth and Livable Communities – Partners for Places

The Funders' Network for Smart Growth and Livable Communities and the Urban Sustainability Directors Network (USDN) joined together to launch Partners for Places. Now a project of the Funders' Network, the grant program was made possible by generous support from Bloomberg Philanthropies, the JPB Foundation, Kendeda Fund, John D. and Catherine T. MacArthur Foundation, New York Community Trust, Summit Foundation, and Surdna Foundation.

Partners for Places is a successful matching grant program that creates opportunities for cities and counties in the United States and Canada to improve communities by building partnerships between local government sustainability offices and place-based foundations. National funders invest in local projects to promote a healthy environment, a strong economy, and well-being of all residents. Through these projects, Partners for Places fosters long-term relationships that make our urban areas more prosperous, livable, and vibrant. In the first two years, Partners for Places funded 29 proposals. To attract additional interest in urban sustainability projects beyond those funded through Partners for Places, the Funders' Network has created an "idea bank" providing summaries of project applications on its website.

Dollars Available; Size of Awards; Term: Grants will be between $25,000 and $75,000, with a 1:1 match required by one or more local, place-based foundations. It is anticipated that the grant pool will support 8-12 projects in Round 5 for projects to be carried out primarily over a twelve-month period.

The Selection Committee will consider proposals for two-year project support, with an award range of $50,000-$150,000. An application requesting two years of project support would require a two-year match commitment up front from local funders. In addition, the committee will consider proposals for renewal support for projects funded in earlier rounds. Two-year or renewal proposals will need to demonstrate how the award would bring appreciable further benefits beyond a one-year award.

Documenting the Matching Requirement: At the time that the application is submitted, the Selection Committee needs to know that a sustainability director and a funder partner(s) have worked together to develop the proposal and that the funder is intending to support this project financially, subject to board review and approval. A letter(s) of commitment or intent to commit shall be sufficient to make an application eligible for review.

Application Deadlines: The Funders' Network and USDN will approve matching grant investments during two application rounds in 2014-2015.

Selection Process: A selection committee of foundation officers and urban sustainability directors awards the matching grants for sustainability projects, and the Funders' Network administers the grant program. The selection committee also oversees the development of program guidelines and evaluation of the program.

*Eligible Partnership Projects***:** Successful proposals are for projects that the local government sustainability office and local, place-based funder(s) consider important to the community. The project must advance at least one of the following: A key aspect of a community-focused sustainability, climate action, comprehensive plan provision that specifically addresses sustainability; a key aspect of any plan endorsed by the mayor or city manager that states the goal of balancing economic development, environmental quality, and equity; an area identified for performance improvement or implementation for Certified STAR Communities. Partners for Places will not support existing local government staff, major capital projects, or endowments.

Eligible Applicants: The proposal must be submitted by a team of at least two partners who are: (1) the sustainability director of a city (municipality) or a county and, (2) the local, place-based foundation(s). The proposal may be emailed by either partner.

Eligible Grant Recipients: Local, place-based foundation, a public charity (501c3) created by a city or county government to accept grants, or a partnering nonprofit organization.

Website: www.fundersnetwork.org/participate/green-building

(n) Surdna Foundation

The Surdna Foundation seeks to foster sustainable communities in the United States -- communities guided by principles of social justice and distinguished by healthy environments, strong local economies, and thriving cultures. Potential applicable Surdna Foundation grant areas:

- *Sustainable Environments* - Overhaul of low performing infrastructure, much of it outdated and crumbling. Surdna Foundation believes in the potential to improve transit systems, make buildings more energy efficient, better manage our water systems and rebuild regional food systems.
- *Strong Local Economies* – The Strong Local Economies program supports the development of robust and sustainable economies that include a diversity of businesses and access to quality jobs. The Foundation works to spur the growth of local businesses, encourage equitable economic development, and improve the quality and availability of jobs for low-income people, communities of color, immigrants, and women.

The Sustainable Environments Program works to overhaul our country's outdated and crumbling infrastructure with a new approach that will foster healthier, sustainable, and just communities, including improving transit systems. Focusing on urban areas and their surrounding suburbs, the Foundation seeks solutions that connect and improve these infrastructure systems in ways that maximize positive impacts and minimize negative environmental, economic and social consequences.

Surdna Foundation supports Sustainable Transportation Networks & Equitable Development Patterns. The Foundation supports a different approach for communities and envisions Sustainable Transportation & Equitable Development Patterns where:

- People can get to work, school and home via reliable, interconnected, and affordable public transportation.
- Investments in transit projects create more jobs and economic opportunities for local residents.
- Major transportation projects do not harm the environment and instead, revitalize communities and revive our manufacturing sector.

The Sustainable Environments Program supports transportation systems and transit solutions that give people affordable and reliable options to get to work, school, and home while minimizing impacts on the environment and maximizing equitable economic opportunities. The Foundation seeks funding opportunities that:

- Strengthen and expand the use of transportation project performance standards that improve transportation options, increase access and mobility, reduce vehicle miles traveled and greenhouse gas emissions, and advance climate resilient strategies;
- Strengthen procurement and other policies so that the public funds spent on transportation help create quality jobs and deliver the broadest possible public benefits to nearby communities;
- Support innovative revenue models to build out sustainable transportation networks and ensure public benefits;
- Promote regional transportation and land use practices that integrate light rail, transit, and urban-suburban connections.

To apply for a grant, most applicants use the online letter of inquiry to apply for funding to determine whether or not there is a good match with Surdna's funding priorities. If it is determined that there is a good fit, a full proposal will be requested. To start a letter of inquiry, one of the program areas must be selected. Organizations may apply for grants of up to 36 months. Grants are awarded to nonprofit organizations under Section 501(c) (3) of the Internal Revenue Code and be classified as a public charity and not as a "private foundation" under Section 509(a). While some projects support public/private partnerships, the grant must be made directly to the nonprofit organization. In certain circumstances you may apply through a fiscal sponsor. The fiscal sponsor must be a 501(c)(3) nonprofit organization that has a formal relationship with the organization working on the project.

Website: www.surdna.org

(o) Ford Foundation

The Ford Foundation supports visionary leaders and organizations on the frontlines of social change worldwide. Initiatives are encouraged to achieve these goals by those living and working closest to where problems are located; to promote collaboration among the nonprofit, government and business sectors; and to ensure participation by men and women from diverse communities and all levels of society. The Foundation works mainly by making grants or loans that build knowledge and strengthen organizations and networks. Focus is placed on key problem areas and program strategies, addressing eight significant social justice issues. Program teams working on each of the Foundation's initiatives consult with practitioners, researchers, policy makers, current and potential grantees, and others to identify areas where the Foundation's resources are needed most.

There are no submission deadlines - applications are considered throughout the year. If the proposed work aligns with the Foundation's priorities and budget limitations, a program officer will be in contact to begin the process of developing a formal proposal.

Metropolitan Opportunity

Equitable access to safe, affordable housing, efficient transportation, and good jobs is fundamental to building prosperous metropolitan areas. The Foundation is working across the United States to support efforts that reach beyond individual neighborhoods and cities to connect residents with opportunities in their broader metropolitan economies. The Foundation supports organizations that pursue integrated approaches to housing, land use and environmental planning, public transportation and community infrastructure, and aligned workforce opportunities.

Smarter regional development strategies that expand and connect decent employment opportunities with affordable housing along regional public transportation corridors can reduce concentrated poverty and help regions grow in healthy ways. At the local and regional levels, advocacy groups and coalitions that promote sustainable economic development practices are supported to ensure that planning decisions and infrastructure investments are made in the public interest and benefit the working poor. In addition, regional efforts to link housing and workforce development programs to transportation planning are supported so that transit-dependent populations are assured access to sustainable-wage employment and lifeline services.

Some efforts that are funded:

- Linking transit-oriented development with affordable housing
- Initiatives that improve public transportation access between low-income communities and employment centers
- Work that will identify job creation potential as a key consideration in the development of accessible and sustainable communities

Website: http://www.fordfoundation.org/issues/metropolitan-opportunity/connecting-people-to-opportunity/for-grant-seekers

(p) Walmart – Community Grants

The Walmart Foundation meets the needs of the underserved by directing charitable giving toward the core areas of focus. The Foundation engages in opportunities that align with the Walmart Foundation's key areas of focus, including sustainability. Walmart believes in operating globally and giving back locally – creating impact in the neighborhoods. Through the Community Grant Program, Walmart supports the needs of their communities by providing grants to local organizations.

Career Opportunity

For Walmart communities, living better means greater access to opportunity. The Walmart Foundation supports many initiatives that provide opportunities through job training and placement, career advice and greater access to the resources that help people become self-sufficient.

The Community Grant Program awards grants ranging from $250 to $2,500 through each of Walmart's facilities (Walmart Stores, Sam's Clubs, and Logistics Facilities). Eligible nonprofit organizations must operate on the local level (or be an affiliate/chapter of a larger organization that operates locally) and directly benefit the service area of the facility from which they are requesting funding. The application

deadline to apply for the 2014 cycle is December 31, 2014. Primary consideration for the Community Grant program is to support local organizations with programs that align with the Foundation's areas of giving. However, programs that do not align with these areas may also be given consideration.

Organizations eligible to apply must meet one of the following criteria:

- An organization holding a current tax-exempt status under Section 501(c)(3), (4), (6) or (19) of the Internal Revenue Code
- A recognized government entity: state, county, or city agency, including law enforcement or fire departments, that are requesting funds exclusively for public purposes
- A K-12 public or private school, charter school, community/junior college, state/private college or university
- A church or other faith-based organization with a proposed project that benefits the community at large.

Website: http://foundation.walmart.com/apply-for-grants/local-giving-guidelines

Appendix A

Village of Carpentersville

Transit Improvement Plan

Existing Conditions: Mobility Patterns

July 2013 FINAL

Prepared for

Regional Transportation Authority

Village of Carpentersville Illinois

Building a Better Tomorrow . . . Today

Prepared by

URS

MKC Associates

ftg fish transportation group

PurpleGroup

Think. See. Be Purple.

Table of Contents

Table of Figures

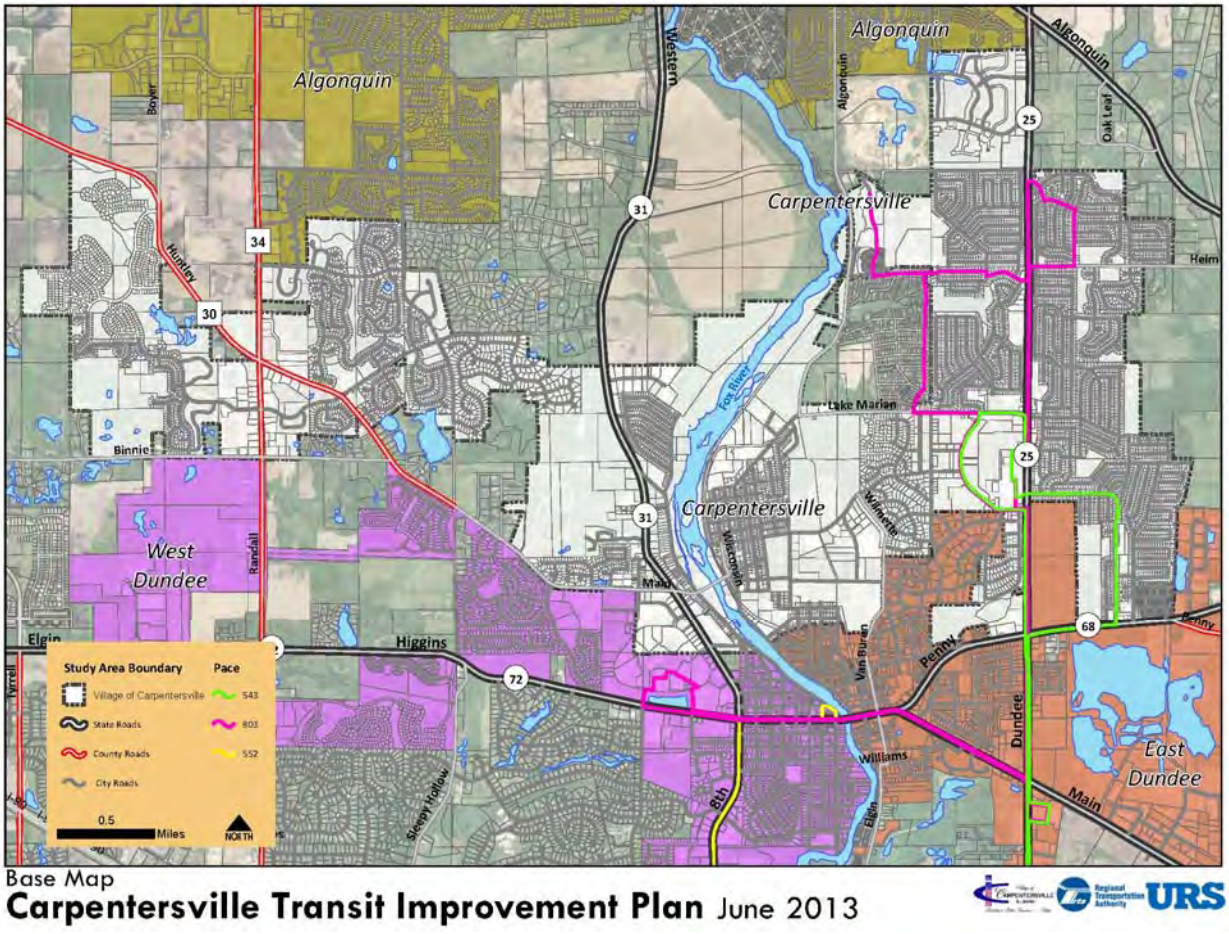
1.0 Introduction

The Village of Carpentersville is a diverse, dynamic community whose residents, visitors, and employers rely on a robust transportation network to support mobility between its residences, employment centers, retail outlets, community facilities, and recreational amenities. A variety of transportation infrastructure elements, including roadways, transit, sidewalks, and bike paths, connect these origins and destinations.

The purpose of this report is to identify Carpentersville's mobility patterns: the key characteristics of the community that drive transportation network demand and the existing elements of Carpentersville's transportation network that currently serve this demand. Demographic information, land use and development patterns, an inventory of the existing transportation network, and a review of Carpentersville's policy and regulatory environment has been combined with stakeholder feedback to identify these patterns.

The findings of this report will result in the identification of mobility gaps in the existing transportation network and will support the development of transit solutions to narrow these gaps.

Figure 1-1: Transit Improvement Plan Base Map



2.0 Demographics and Commute Flow

A community's historic and current demographic profile can help to explain existing demands on the transportation network, and to forecast how projected growth may impact future demand on the transportation network. 2000 US Census data and 2007-2011 Five-Year American Community Survey data (2011 ACS) was pulled for Carpentersville, Kane County, Illinois, and the United States to support a comparative analysis (how Carpentersville's characteristics compare with the county, state and country) and a trend analysis (how data from 2000 had shifted by the time of the 2011 ACS). This analysis is discussed in section 2.1; all data referenced as 2011 data is 2007-2011 ACS data.

Another critical element in understanding transportation network demand is commute flow patterns. The movement of Carpentersville residents to their jobs within Carpentersville and to surrounding communities, as well as the commute of non-residents into Carpentersville for employment purposes, describes the mobility patterns of a critical element of transportation network users. Understanding these flows will help to support a robust understanding of Carpentersville's mobility dynamics.

2.1 US Census data

Data was pulled from the 2000 US Census and the 2007-2011 ACS, which is the most recent data available for this analysis.

2.1.1 Population

As shown in Figure 2-1, Carpentersville population grew between 2000 and 2011 at a much higher rate than the state and country, and grew only slightly more slowly than Kane County. Increasing population puts increased demand on the transportation network; the key to supporting improved mobility is an understanding of the dynamics within this population growth: age, race, educational attainment, employment, household income, zero-car households, and commuting patterns.

Figure 2-1: Population Growth

Geography	2000	2011	Percent Change
Carpentersville	30,586	37,480	22.5%
Kane County	404,119	509,622	26.1%
Illinois	12,419,293	12,790,182	3.0%
United States	281,421,906	306,603,772	8.9%

Source: 2000 United States Census and 2007-2011 American Community Survey

2.1.2 Age

The data shows that Carpentersville is a comparatively youthful community. As shown in Figure 2-2, the median age of Carpentersville's residents is lower than the county, state, and country in both 2000 and 2011. While Carpentersville's 2011 median age (29.6) remains significantly lower than the nationwide median age (37.0), it did increase at a faster pace than both the state and nation between 2000 and 2011. Because the median age is so significantly lower than the county, state and country's median age, this relatively high rate of growth in the median age should not significantly impact the Village's policy and investment decisions related to the transportation network. This data does indicate,

however, that the Village should pay particular attention to serving the mobility needs of children and families, in particular, in addition to middle-aged and mature residents.

Figure 2-2: Median Age

Geography	2000	2011	Percent Change
Carpentersville	28.1	29.6	5.3%
Kane County	32.2	34.4	6.8%
Illinois	34.7	36.4	4.9%
United States	35.3	37.0	4.8%

Source: 2000 United States Census and 2007-2011 American Community Survey

2.1.3 Ethnicity

In 2000, Carpentersville had a significantly larger proportion of Hispanic residents than the county, state and country, as shown in Figure 2-3. By 2011, nearly half of Carpentersville's population was Hispanic.

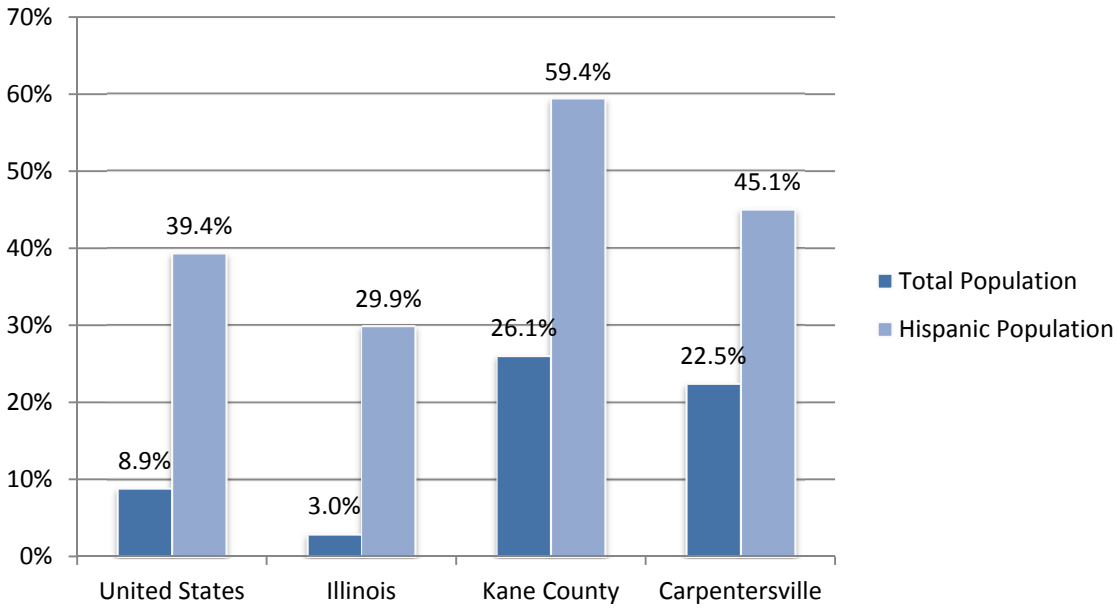
Figure 2-3: Total and Hispanic Population

Geography	2000			2011		
	Total Population	Hispanic Population	Percent Hispanic	Total Population	Hispanic Population	Percent Hispanic
Carpentersville	30,586	12,410	40.6%	37,480	18,012	48.1%
Kane County	404,119	95,924	23.7%	509,622	152,889	30.0%
Illinois	12,419,293	1,530,262	12.3%	12,790,182	1,987,211	15.5%
United States	281,421,906	35,305,818	12.5%	306,603,772	49,215,563	16.1%

Source: 2000 United States Census and 2007-2011 American Community Survey

Another critical element of Carpentersville's population growth trend is the percent growth in the Hispanic population, particularly as compared to the county, state and nation. As shown in Figure 2-4, Carpentersville's Hispanic population grew by 45.1 percent between 2000 and 2011, which exceeds the statewide and national growth rates, but is slightly lower than the county's Hispanic population growth rate.

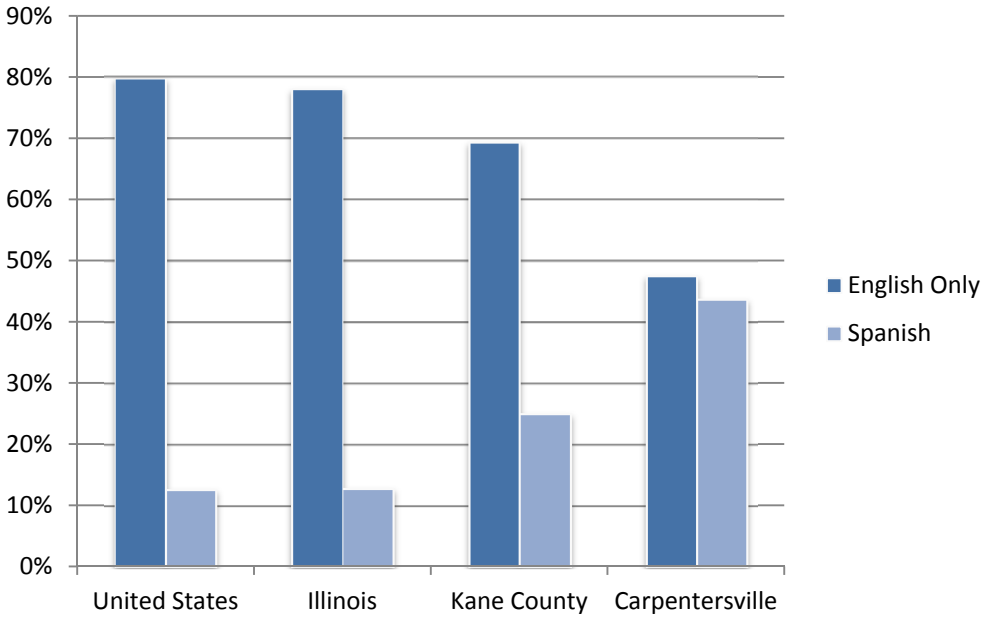
Figure 2-4: Total and Hispanic Population Percent Change, 2000 through 2011



Source: 2000 United States Census and 2007-2011 American Community Survey

As shown in Figure 2-5, 2011 data shows that a significantly lower proportion of Carpentersville's households speak only English, as compared to the county, state and nation, and a significantly higher proportion speak Spanish. Carpentersville's comparatively high rates of Spanish-speaking households may indicate that its Hispanic population includes a comparatively large number of recent immigrants, some of whom may feel more comfortable using transit than driving. Their use of the existing transit system may be hampered, however, by a language barrier.

Figure 2-5: Language Spoken in the Home, 2011



Source: 2007-2011 American Community Survey

2.1.4 *Educational Attainment*

As shown in Figure 2-6, residents of Carpentersville, Kane County, Illinois and the United States all reported slight declines or stagnation in the percent of population with a high school degree in 2000 and 2011. While a higher proportion of Carpentersville residents hold high school degrees than within Kane County as a whole, Village residents still fall slightly behind the nationwide percentage.

Figure 2-6: Percent of Population That Are High School Graduates and Percent Change, 2000 through 2011

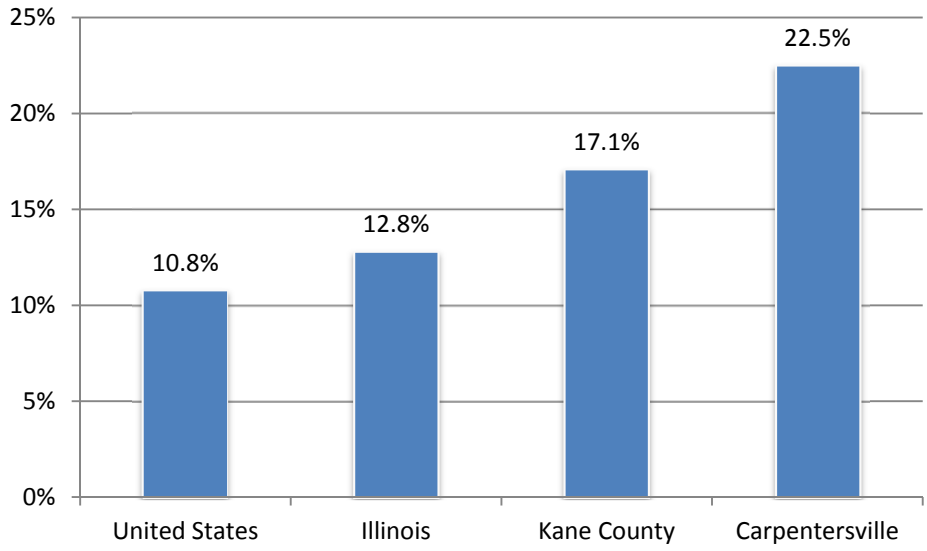
Geography	2000	2011	Percent Change
Carpentersville	28.2%	27.5%	***-2.5%***
Kane County	25.0%	24.1%	***-3.6%***
Illinois	27.7%	27.6%	***-0.4%***
United States	28.6%	28.6%	0.0%

Source: 2000 United States Census and 2007-2011 American Community Survey

2.1.5 *Major industry breakdown*

A shown in Figure 2-7, Carpentersville's employment base relies more heavily on manufacturing than the county, state or nation.

Figure 2-7: Manufacturing as a Percent of Total Employment (2011)



Source: 2007-2011 American Community Survey

Figure 2-8 demonstrates that while manufacturing as a percent of total employment has declined across the board for the Village, county, state and country, the rate of decline has been slowest within Carpentersville.

Figure 2-8: Manufacturing as a Percentage of Total Employment and Percent Change, 2000 through 2011

Geography	2000	2011	Percent Change
Carpentersville	25.0%	22.5%	***-10.0%***
Kane County	20.7%	17.1%	***-17.4%***
Illinois	15.9%	12.8%	***-19.5%***
United States	14.1%	10.8%	***-23.4%***

Source: 2000 United States Census and 2007-2011 American Community Survey, URS

Manufacturing employment tends to be organized in shifts that begin and/or end at non-peak travel times (typically very early in the morning, midday, or very late at night), which may impact an employee's ability to commute using transit. Infrequent headways during these off-peak travel times may result in transit schedules that gets manufacturing employees to their workplace either well ahead of their shift start time or after it begins. Transit service may also not operate at all when manufacturing employees need to commute.

2.1.6 Household Income

As shown in Figure 2-9, median household income has fallen across the Village, county, state, and country between 1999 and 2011, measured in constant 1999 dollars.

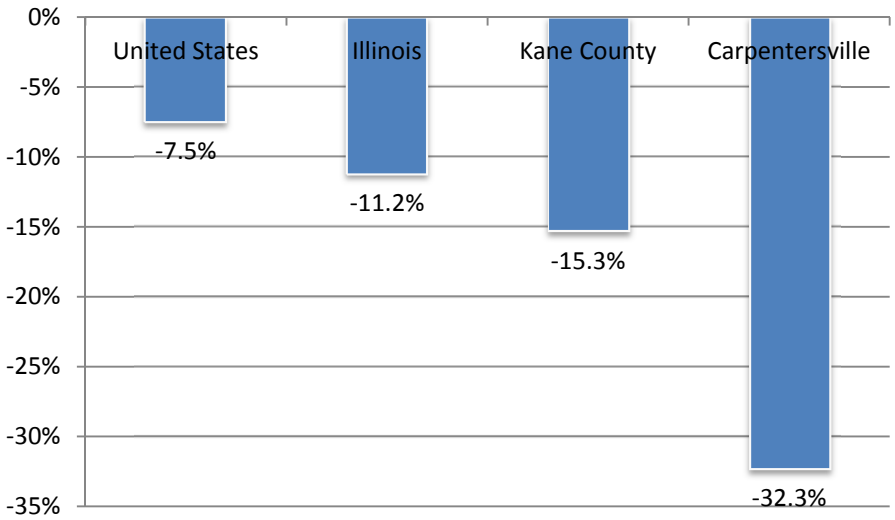
Figure 2-9: Median Household Income, Adjusted for Inflation

Geography	2000 (1999 data)	2011 (in 1999 $)
Carpentersville	$54,526	$41,219
Kane County	$59,351	$51,472
Illinois	$46,590	$41,903
United States	$41,994	$39,078

Source: 2000 United States Census and 2007-2011 American Community Survey, URS

Figure 2-10 shows, however, that this decline is median household income between 1999 and 2011 has been most severe in Carpentersville.

Figure 2-10: Percent Change in Median Household Income 2000 through 2011, Adjusted for Inflation



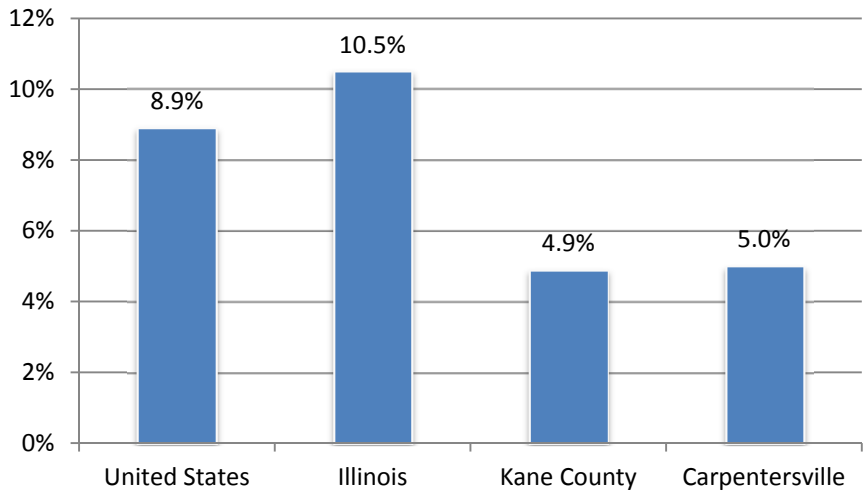
Source: 2000 Unites States Census and 2007-2011 American Community Survey, URS

As total household incomes decline, the share of discretionary household budget declines as housing, food and transportation costs remain relatively consistent. Increasing the number and type of transportation and mobility options (including increased investment in transit, bicycle and pedestrian facilities) may alleviate some pressure on these reduced household incomes by offering lower-cost alternatives to car ownership.

2.1.7 Zero Car Households

As shown in Figure 2-11, households in Carpentersville are more likely than those in Illinois and the United States to have at least one vehicle available. Because median household income in Carpentersville is comparable to median household income within the state and country, the higher incidence of vehicle ownership may reflect a disconnect between existing transit service and residents' origins and destinations.

Figure 2-11: Percent of Households with No Vehicle Available, 2011



Source: 2007-2011 American Community Survey

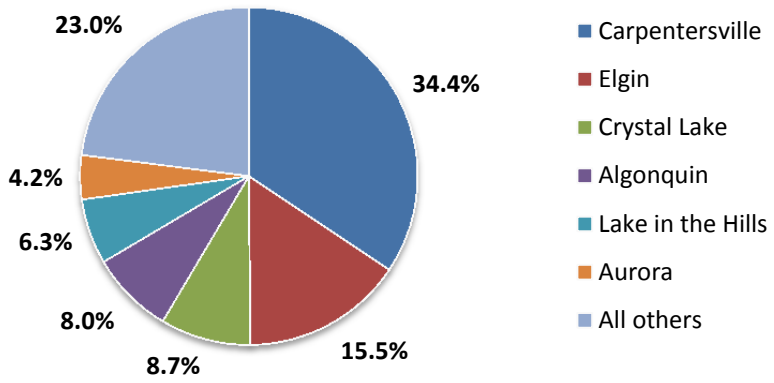
2.2 Commute Data

In addition to socio-economic and demographic trends, commuting patterns by residents of Carpentersville and non-resident employees within Carpentersville provide insight into a significant driver of transportation network demand.

2.2.1 Commute Flows

As shown in Figure 2-12 below, slightly more than one-third of Carpentersville's workforce lives in the Village; Elgin residents compose about 15 percent of the workforce, and the remaining 50 percent of the workforce is drawn from other neighboring communities.

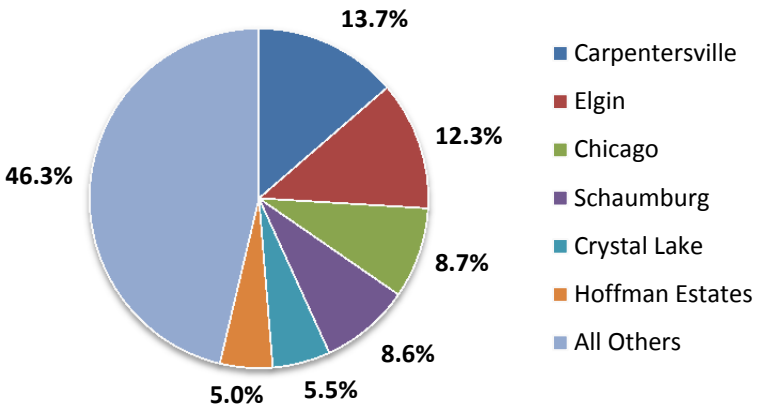
Figure 2-12: Place of Residence for Carpentersville's Workforce



Source: Census Transportation Planning Package, 2006-2008 American Community Survey data

Just over 13 percent of Carpentersville residents also work within the Village; slightly more than 12 percent work in neighboring Elgin, as shown in Figure 2-13. While employers within Carpentersville draw from comparatively few communities, Carpentersville residents travel to a comparatively broader number of communities for employment.

Figure 2-13: Places of Employment for Carpentersville Residents



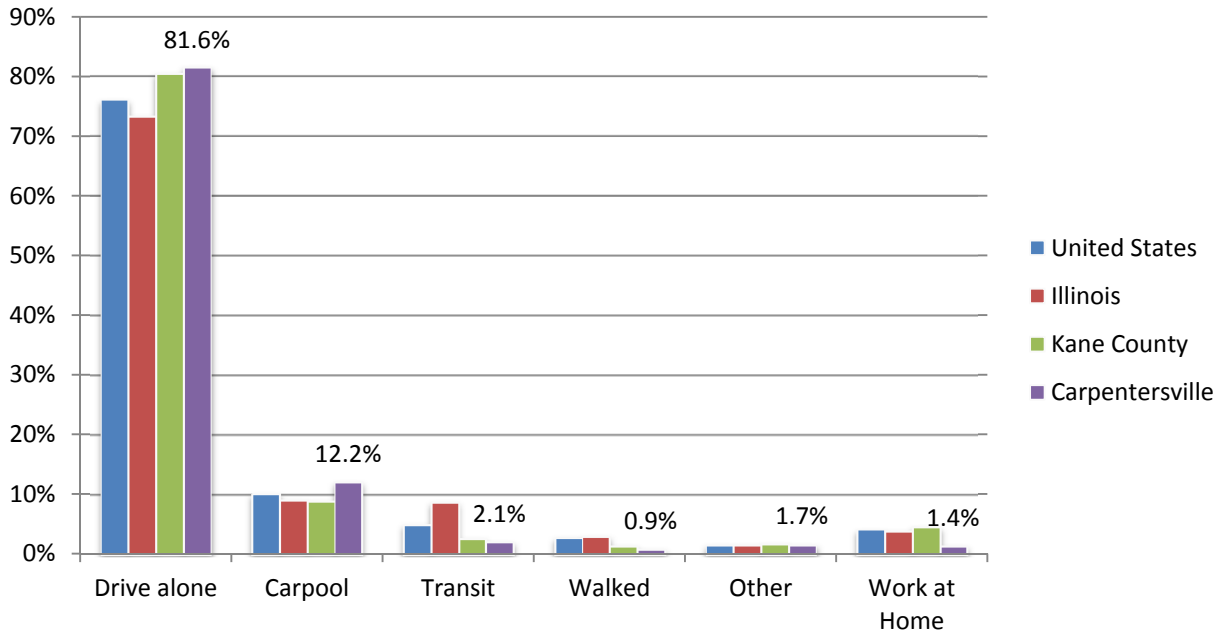
Source: Census Transportation Planning Package, 2006-2008 American Community Survey data

These commute flows indicate that there is a comparatively strong market for commuting within the Village (between a Carpentersville residence and place of employment), but that residents also need good regional transportation network access to travel to workplaces outside of the Village.

2.2.2 *Transit Use Patterns*

As shown below in Figure 2-14, the majority of Carpentersville's residents drive to work, either alone or as part of a carpool; only 2.1 percent take transit. Carpentersville's vehicular commute mode share is higher than the county, state or country's vehicular mode share.

Figure 2-14: Commuting Modes, 2011

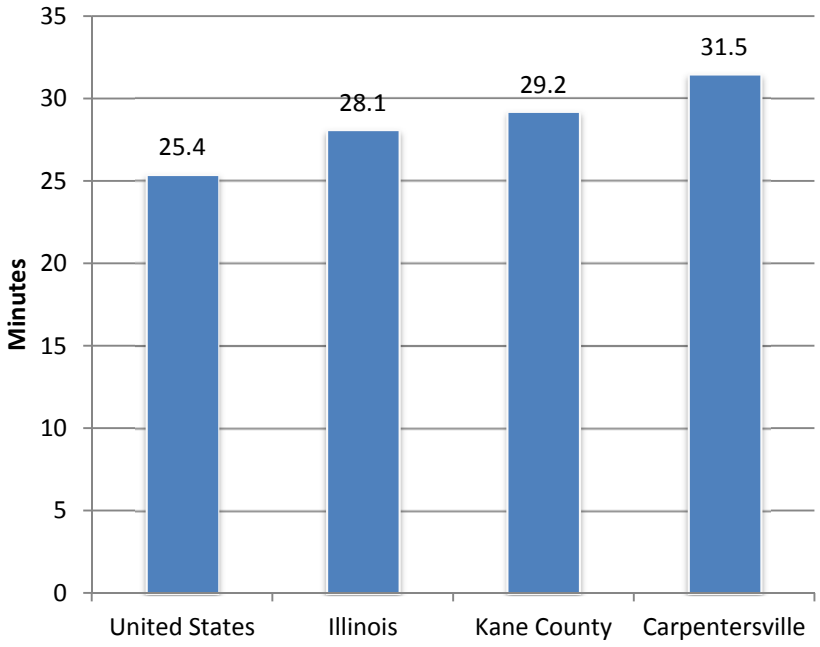


Source: 2007-2011 American Community Survey

The comparatively high rate of carpooling indicates that there is some commonality between points of residential origin and employment destination. The comparatively low rates of transit for commuting, despite these common origins and destinations, may reflect the fact that the existing transit network is not meeting the mobility needs of Carpentersville's residents. The sources and causes of this disconnect will inform the development of potential transit system improvements that will occur during the next phase of the project.

Carpentersville's comparatively high rate of auto commuting may result in increased congestion. As shown in Figure 2-15, Carpentersville residents spend more time commuting to work than their neighbors in Kane County, the state, and across the country. The average Carpentersville resident is spending just about 10 percent more time travelling to work than their Kane County neighbors and commuters across the state of Illinois, and about 19 percent more time than the national average.

Figure 2-15: Median Travel Time, 2011



Source: 2007-2011 American Community Survey

3.0 Land Use and Development

The Village of Carpentersville's land use, development and employment patterns are the physical environment within which its residents live, work, play and travel. There is a reciprocal relationship between these patterns and the transportation network: transportation network investments are made to serve existing and future land uses, while these investments can be used to focus development along targeted corridors. The Village's existing land use, development and employment patterns are described below.

3.1 Existing Land Use and Development Patterns

Carpentersville is primarily characterized by its residential, open space, and industrial land uses. The Village's current housing stock was first constructed on the east side of the Village in comparatively smaller single- family lot subdivisions. Newer residential development is typically found on the western side of the Village on larger-lot subdivisions. The highest density residential development is located just north of Bolz Road and west of Illinois Route 25.

Older industrial uses are clustered along both sides of the Fox River towards the Village's southern boundary, and are typically constructed as comparatively large single-lot developments. Newer industrial uses have been constructed in planned industrial parks along the eastern side of Illinois Route 31, just north of Raceway Woods.

The Meadowdale Shopping Center and a few smaller strip developments throughout the Village comprise the Village's older retail uses, while new retail and commercial uses line Randall Road and Illinois Routes 31 and 25. The Spring Hill Mall is on the southern border of the Village, just south of the Main Street Bridge.

The Village includes a number of open space amenities, including the Brunner Family Forest Preserve, Raceway Woods, and a variety of smaller municipal parks that are scattered through the Village. The Fox River Trail runs along the eastern edge of the river, and enables residents to access this multi-use path, which travels through a variety of neighboring communities.

The diversity of existing land uses makes it possible for Carpentersville residents to travel from their homes to education, retail, recreational and employment destinations all within the Village's boundaries.

3.2 Existing Employment Patterns

As described in Section 2.0, Carpentersville residents are employed in manufacturing at a rate that exceeds the county, state and country. This may be facilitated by the presence of industrial uses along the Fox River, and may be reflected by the fact that 34 percent of Carpentersville's workforce is drawn from Carpentersville residents.

Retail and service sector employment can be found in the larger-scale commercial corridors along Randall Road, as well as smaller scale commercial uses along Illinois Route 31, particularly around Main Street, and Illinois Route 25, particularly between L.W. Besinger Drive and Lake Marian Road.

The balance of Carpentersville's employers can be found throughout the Village, typically located along the Illinois State Routes or in the Old Town area.

4.0 Policy and Regulatory Environment

While Carpentersville's demographic profile and existing land use and development patterns drive demand on the transportation network, the Village's Comprehensive Plan, neighborhood plans, and the Zoning Code create the policy and regulatory environment in which the built transportation network investments are developed, evaluated, and implemented.

4.1 Comprehensive Plan

The Village's most recent Comprehensive Plan, which was adopted in January 2007, includes a number of transportation improvements in its vision for the "future," which was designated as 2016. Transportation improvements identified in this vision include:

- Completion of the Longmeadow Parkway and Bolz Road Bridge, which will be designed to accommodate pedestrian and bicycle traffic, as well as vehicles,
- Widening of Huntley Road and Maple Avenue, and
- Ongoing improvements to the Village's street and sidewalk network.

The land use plan that resulted from the 2007 planning process is included on the following page in Figure 4-1.

A series of policy goals and objectives were developed to help the Village realize this vision; those that are relevant to transportation network demand and utilization are identified below.

Housing and Residential Land Use Areas Objectives[1]

- "Monitor the number of new multi-family development within the Village and discourage 'large-scale' apartment and townhome developments."
- "Promote appropriate condominium development in the central core of the historic Old Town area as part of a new commercial/mixed-use area."

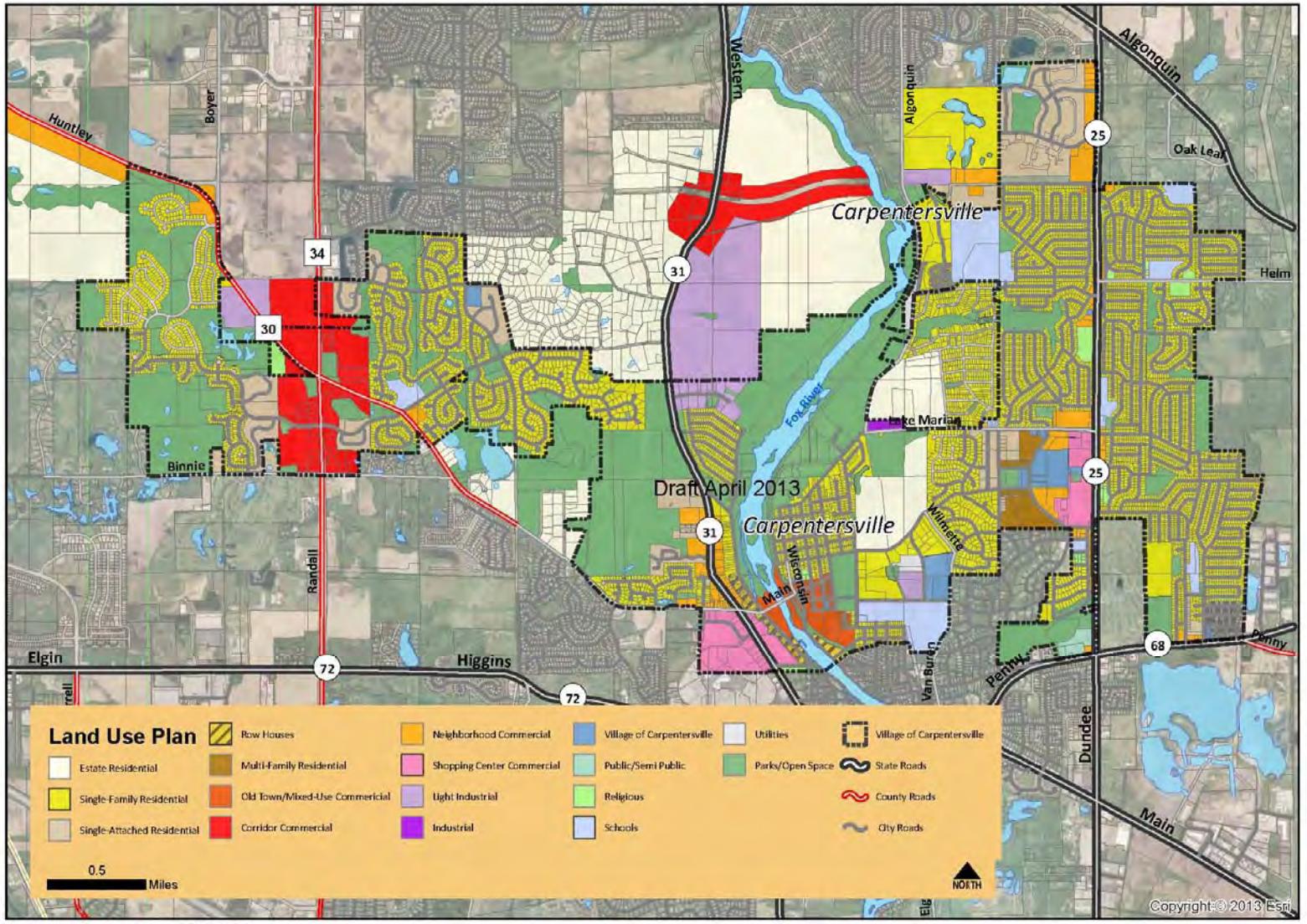
These objectives indicate that the Village of Carpentersville is interested in focusing on single-family lot development patterns, with complementary smaller-scale multi-family residential developments. Comparatively higher-density condo development is targeted for the Old Town area. This element of the vision is particularly relevant for this project because any transit network investments must be designed with this level of residential density and development pattern in mind.

Industrial Land Use Areas Objectives[2]

- "Expand upon the existing light industrial uses along IL Route 31 to capitalize on the proximity to Bolz Road/Longmeadow Parkway and maximize the use of the local labor force."
- "Encourage the development of light industrial parks in lieu of single site development."
- "Ensure that new or expanded industrial development is concentrated in areas of similar or compatible use."

[1] Village of Carpentersville Comprehensive Plan, January 16, 2007, p. 7
[2] Ibid, p. 8

Figure 4-1: 2007 Future Land Use Plan



Land Use Plan (2007)

Carpentersville Transit Improvement Plan June 2013

- "Minimize traffic from light industrial areas from cutting through adjacent residential neighborhoods."
- "Encourage and promote the relocation of inappropriately located existing industrial uses to planned industrial park locations."

This element of the growth vision calls for the clustering of industrial uses into more modern industrial office parks rather than continuing the pattern of single-lot industrial development. This development pattern may be comparatively more supportive of transit service, as industrial employment destinations will be adjacent to another and may support the growth of the employment-based transit market.

Transportation Goal: "Provide a balanced transportation system which ensures the safe and efficient movement of vehicles, pedestrians, and cyclists."[3]

Most Relevant Transportation Objective:

- "Work with PACE to further improve bus/shuttle service throughout the community, either through expanded PACE bus service or the addition of new shuttle/van service."[4]

The Comprehensive Plan's vision for the transportation network calls for a multi-modal network that supports safe, efficient mobility by all network users. The objective of improving/expanding Pace service directly complements the objective of this project.

4.1 Other Relevant Plans

The Village adopted the Old Town Plan in July 2012. The creation of this plan was undertaken in response to the concern, identified through the comprehensive planning process, that Old Town has lost its identity and character. It was subsequently identified as one of five key subareas within the Village, and a series of land use, infrastructure and transportation investments were developed to help retain and increase the unique attributes of this neighborhood.

During the Existing Conditions phase of the project, a number of relevant findings were identified:[5]

- High traffic volumes on Main Street and the street configuration result in congestion during peak hours.
- Old Town has a highly connected street grid that lends itself to walkability.
- Lack of transit servicing Old Town reduces the accessibility of the area.
- Household travel patterns of households in Old Town are similar to that of the rest of the Village and Kane County; households drive more than the regional average and spend one-fifth of their income on transportation costs.

The final plan recommended a series of investments to improve the transportation and parking facilities within Old Town, and supports the addition of transit in or near Old Town:[6]

[3] Ibid, p. 8
[4] Ibid, p. 8
[5] Village of Carpentersville Old Town Plan, Draft Existing Conditions Report, November 2011, p. 31
[6] Village of Carpentersville Old Town Plan, July 10, 2012, p. 42

- "Adding transit to this area will give employees a direct way to travel to work without having to use a car and add to the traffic congestion on Main Street. […]Employer-based programs that provide travel options, such as vanpools, can be effective at providing transportation choices to work when transit service is difficult to support. The Village should continue to support these efforts."

4.2 Zoning Code

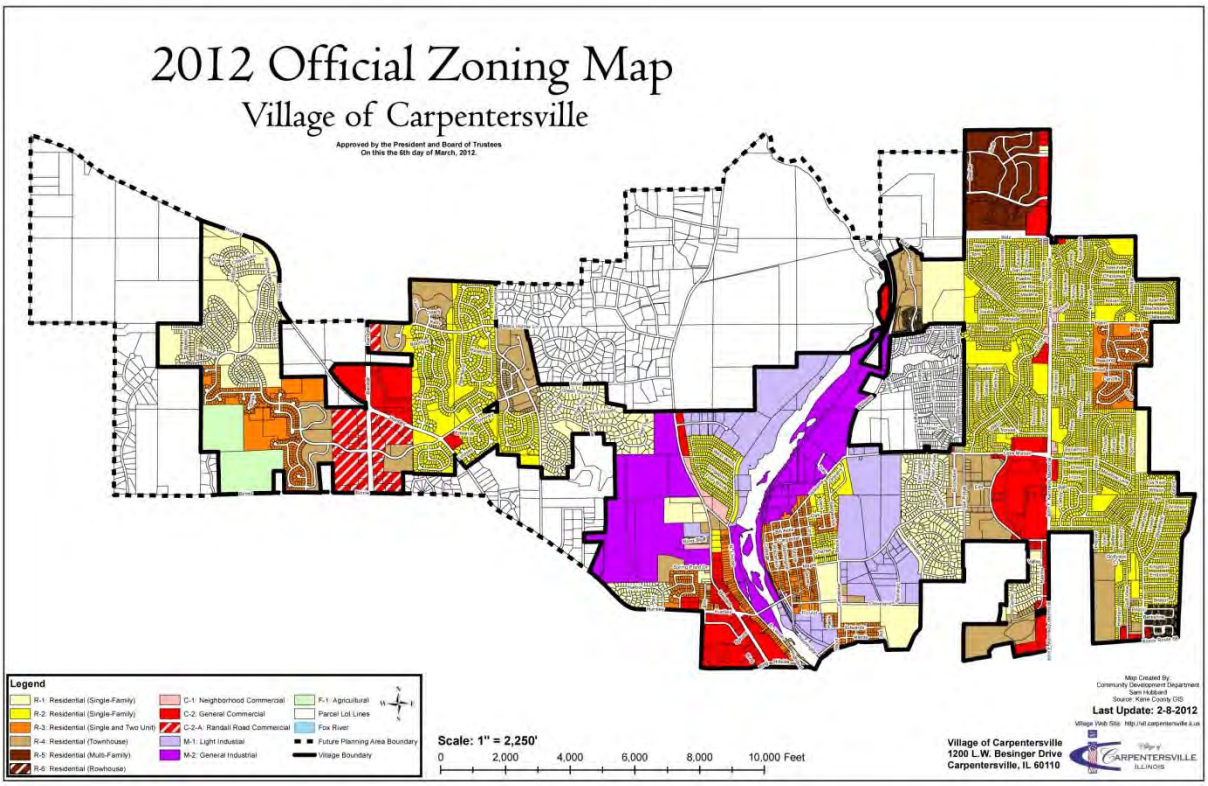
The zoning code provides the regulatory framework that supports implementation of the adopted vision for community growth that is outlined in the Comprehensive Plan.

As shown in Figure 4-2 below, the Village's zoning map matches the pattern of existing land uses: single-family lot residential uses clustered on the eastern and western edges of the Village complemented by isolated developments of multi-family residential uses, with industrial uses clustered along the Fox River and commercial development clustered along Randall Road and Illinois Routes 25 and 31.

The higher-density single-family residential is primarily found on the eastern side of the Village, which may explain why existing Pace routes serve this market, rather than the lower-density residential development on the western side of the Village. While there is a higher density residential subdivision that is east of Randall Road, its curvilinear and cul-de-sac-oriented street network is not particularly conducive to transit usage by its residents.

The greatest concentration of single, two-unit and townhouse zoning is found on either side of the Fox River in the downtown, while the highest density residential zone is north of Bolz Road.

Figure 4-2: 2012 Official Zoning Map of the Village of Carpentersville



Source: Village of Carpentersville

5.0 Transportation Network

Carpentersville's transportation network includes facilities for motor vehicles, transit riders, pedestrians, and bicyclists, as shown in Figure 5-1 on the following page. The Fox River runs north-south through the Village of Carpentersville, effectively cutting the Village into two halves. This natural feature has significantly impacted both the Village's development pattern and its transportation network, as described below.

5.1 Roadway

5.1.1 Types

Carpentersville's greatest concentration of roadways is on the eastern side of the Village; the western side of the village includes protected open space and larger-lot development patterns that require fewer roadways for access. The Village's roadway network includes a mixture of principal arterials, minor arterials, major collectors, and local streets. This roadway hierarchy, as defined by the Federal Highway Administration, describes the character of service that the roadway is intended to provide:[7]

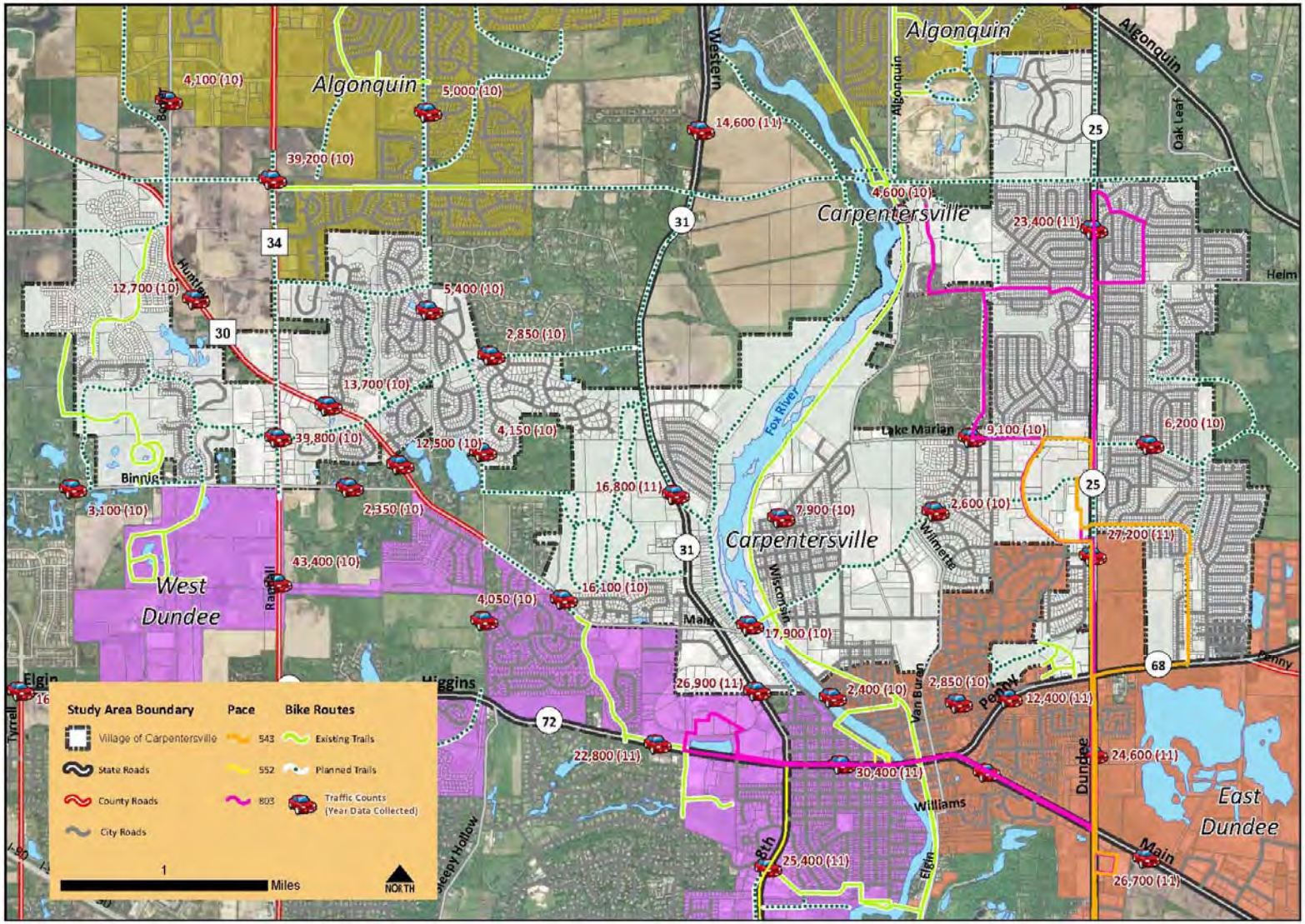
- Principal arterials should "serve the major centers of activity of a metropolitan area, the highest traffic volume corridors, and the longest trip desires; and should carry a high proportion of the total urban area travel on a minimum of mileage."
- Minor arterials should "interconnect with and augment the urban principal arterial system and provide service to trips of moderate length at a somewhat lower level of travel mobility than principal arterials."
- Urban collectors "provide both land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. It differs from the arterial system in that facilities on the collector system may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination."
- Local streets comprise "all facilities not on one of the higher systems. It services primarily to provide direct access to abutting land and access to the higher order systems…It offers the lowest level of mobility."

Three north-south principal arterials run along Carpentersville's eastern and western sides: Randall Road on the west, Illinois Route 31 in the center, and Illinois Route 25 on the east. Illinois Route 72 runs east-west just outside of Carpentersville's southern border, and branches to create Illinois Route 68 just east of the Fox River. Illinois Route 31 roughly parallels the Fox River, and is now being constructed as a four-lane limited-access freeway around Algonquin. Huntley Road, a minor arterial, branches off from Illinois Route 31 just inside the Village's southern boundary and continues in a northwestern direction.

There is not currently a parallel east-west principal arterial on the northern side of the Village, although the construction of the Longmeadow Parkway (discussed in Section 5.1.3) will improve east-west mobility and connectivity in this area.

[7] Federal Highway Administration, http://www.fhwa.dot.gov/planning/processes/statewide/related/functional_classification

Figure 5-1: Existing Transportation Facilities in Carpentersville



Existing Transportation Facilities

Carpentersville Transit Improvement Plan June 2013

A network of major collectors on the eastern side of Carpentersville forms a loose grid network that supports efficient mobility throughout the Village. The network of collectors includes Main Street, which is the only Fox River roadway crossing within the Village's boundaries.

Local roadways compose the balance of Carpentersville's roadway network. The majority of the local roadways serve planned subdivisions, including residential neighborhoods on the east side of the Village and the industrial development on the western border of the Fox River just off Illinois Route 31. With a few exceptions, local roadways are nodular, rather than grid, in orientation, which forces drivers to connect with collector and arterial roadways through a comparatively limited number of access points.

5.1.2 Traffic Volume

As shown in Figure 5-1, Illinois Routes 25, 31, and 72 and Randall Road have the highest average daily traffic counts. These roadways are all classified as principal or minor arterials. Main Street, which is classified as a major collector, supports a high volume of traffic as compared to other major collectors within the Village. Its volume of traffic likely reflects the fact that it is the only Fox River crossing in Carpentersville, and is one of the few in the region.

5.1.3 Planned Improvements

Longmeadow Parkway Corridor

The Village adopted the Longmeadow Parkway Corridor Study in June 2009 as an amendment to the 2007 Comprehensive Plan.[8] This study plans for land uses along the road once it is built by Kane County. The project will alleviate the traffic congestion over the limited number of existing Fox River bridges that has been driven by a tenfold increase in the population west of the Fox River since the 1980s.[9]

The Parkway will bisect the Brunner Family Forest Preserve, which is owned by the Kane County Forest District. The study recommended that the Forest Preserve be preserved as open space, and identified a 43-acre area that the County may lease to develop recreational amenities. Locations for three signalized intersections were identified (Illinois Route 31, Silverstone Drive/Bolz Road, and Illinois Route 25).

Kane County anticipates finalizing Phase I Engineering with design approval in early 2013 and, as of January 2013, about 60 percent of the required project right-of-way had been acquired.[10] The project has received 12 supporting resolutions (Kane and McHenry Counties and 10 municipalities, including Carpentersville).[11]

It is anticipated that the project, which will be funded through a unique combination of user tolls, municipal contributions (dedication of right-of-way), the counties, the state, and private developers, and will result in a variety of economic benefits, including:[12]

- More than $100 million annual increase in corridor property's equalized assessed value,
- More than 50,000 new jobs within a five-mile radius of the project by 2040,
- More than 4,000 corridor construction jobs,

[8] Village of Carpentersville, *Longmeadow Parkway Corridor Study*, June 2, 2009
[9] Kane County Division of Transportation, January 2013, http://kdot.countyofkane.org/Longmeadow%20Parkway/FINAL%20Longmeadow%20Pkwy%20Handout.pdf
[10] Ibid
[11] Ibid
[12] Ibid

- Support of more than 700 acres of Algonquin corporate campus, which may generate $500 million in business sales, more than 12,800 permanent jobs, and thousands of construction jobs,
- Improved safety and reduced congestion costs, and
- Improved accessibility to existing businesses.

Maple Avenue

The Village is working with IDOT to make significant upgrades along Maple Avenue from Washington Street to L.W. Besinger Drive. Improvements will include roadway reconstruction, curb and gutter installation/replacement, storm sewer, water main, and sanitary sewer repair, street lighting, and an asphalt bike path.

5.2 Transit

The Village of Carpentersville is directly served by two Pace bus routes (543 and 803). Route 543 provides connections to Metra service at the Elgin Station on the Milwaukee District West line. Route 543 is classified by Pace as intra-community service, which means that the service is contained within a community or has minor extensions beyond community boundaries. Route 803 is classified as suburban link service, which means that service does not provide connections to CTA service, but is also not exclusively an intra-community service. Suburban link routes are also not specifically geared to operate as a Metra feeders or express services.

As shown in Figure 5-1, both Pace routes exclusively serve the eastern side of the Village. There is no direct transit service on the western side of the Village. Route 543 primarily travels along Illinois Route 25 between the Elgin Transportation Center and Lake Marian Road, with two deviations into residential neighborhoods (one in Carpentersville and one in Elgin). Route 803 is slightly more circuitous, traveling along Illinois Routes 25, 68 and 72 between Spring Hill Mall and the Foxview neighborhood, with multiple deviations into residential neighborhoods in Carpentersville.

5.2.1 Pace

5.2.1.1 Span, frequency of service

Route 543 runs on weekdays between approximately 6:00 AM and 7:30 PM and on Saturdays between approximately 7:45 AM and 6:30 PM. Weekday service operates at 60 minute headways (with the exception of the second northbound run of the day, which departs the Elgin Transportation Center 30 minutes after the first run). Saturday service also operates at 60 minute headways. Route 543 service is scheduled to meet route 803 service at the Wal-Mart to enable connections to the Spring Hill Mall.

Route 803 operates on weekdays between approximately 5:30 AM and 9:00 PM and on Saturdays between approximately 7:00 AM and 6:00 PM. Weekday service operates at 30 to 60 minute headways (30 minutes between 12:39 PM and 5:39 PM). Saturday service also operates at 30 and 60 minute headways (only the first two runs of the day are at 60 minute headways).

5.2.1.2 Ticket Prices

One-way cash fares on routes 543 and 803 (which are defined by Pace as Regular Fare routes) are $1.75; 10-ride tickets are $17.50; 30-day passed are $60.

Two Pace/CTA passes are available: 30-day for $100 and 7-day for $33.

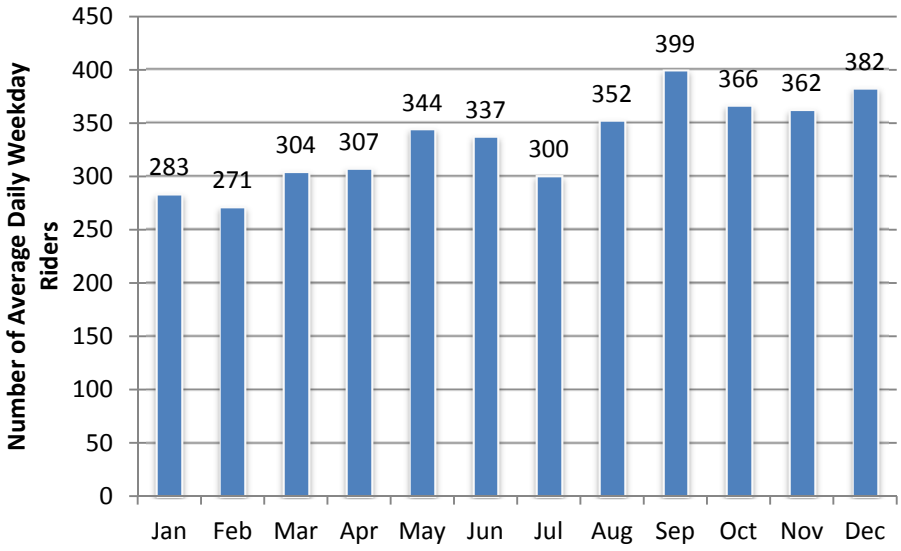
Two Metra monthly pass upgrades are also available:

- **Metra/Pace PlusBus Pass:** Monthly Metra Pass holders can purchase an unlimited ride pass to be used in conjunction with their monthly ticket good for travel on all Pace buses for $30.
- **Metra Link-Up Pass:** Monthly Metra Pass holders can purchase a Link-Up Pass to connect to Pace and CTA buses. CTA usage is restricted to the peak travel hours of 6:00 AM and 9:30 AM and 3:30 PM and 7 PM, Monday through Friday only.

5.2.1.3 Ridership

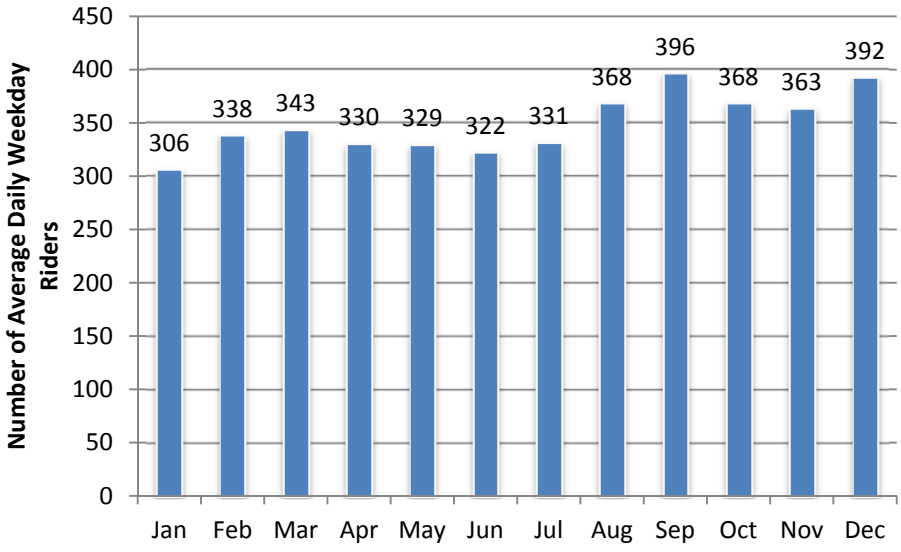
As shown in Figures 5-2 and 5-3, routes 543 and 803 have a similar number of average weekday riders.

Figure 5-2: Pace Route 543 2011 Ridership



Source: Pace

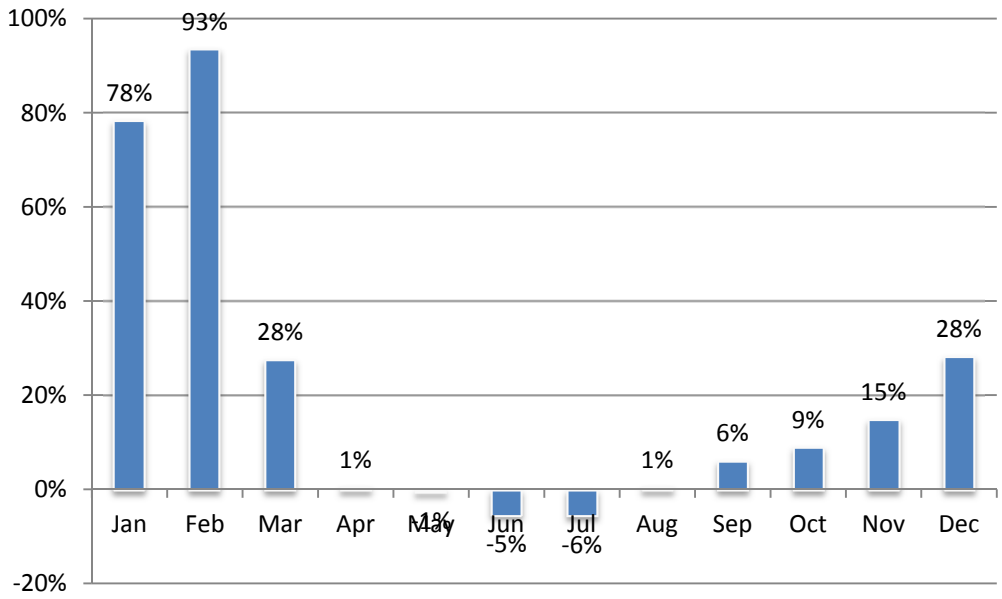
Figure 5-3: Pace Route 803 2011 Ridership



Source: Pace

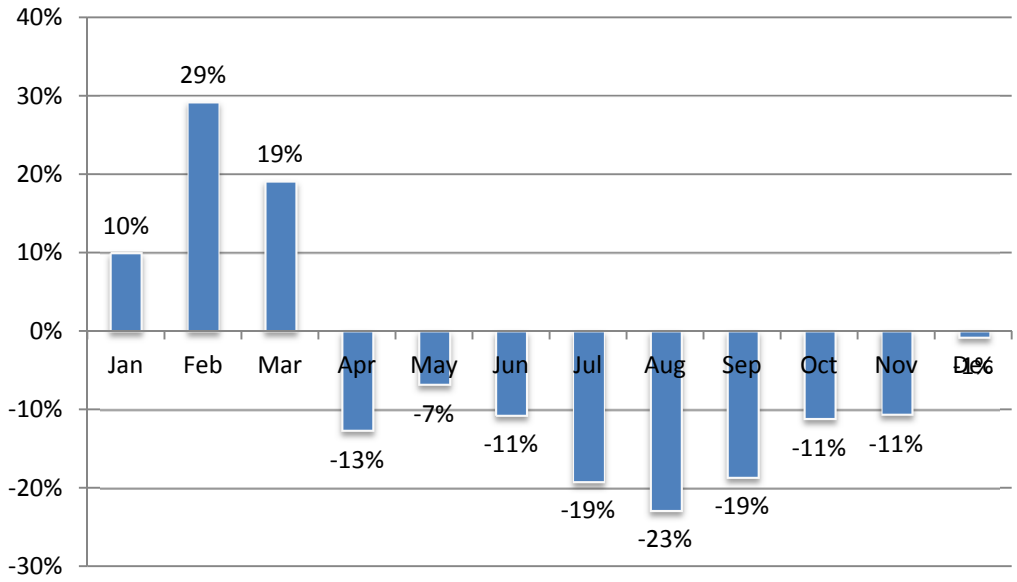
As shown in Figures 5-4 and 5-5, however, route 803 has lost a significant number of riders between 2006 and 2012, while route 543 has maintained or grown its ridership in every month except for slight declines in May, June and July.[13]

Figure 5-4: Percent Change in Route 543 Daily Average Ridership by Month, 2006 - 2012



Source: Pace, URS

Figure 5-5: Percent Change in Route 803 Daily Average Weekday Ridership by Month, 2006 - 2012



Source: Pace, URS

[13] Only 2006-2011 data is available for the months of October, November and December.

5.2.1.4 Existing facilities

Routes 543 and 803 are flag stop routes, meaning that, per Pace policy, riders can board or alight at any intersection along the route where the driver deems is safe to do so. Because these are flag stop routes that don't have designated stop locations, there is a comparatively low level of passenger amenities (including shelters, benches, trash receptacles, etc.) along the routes.

Route 543 does, however, originate/terminate in the Elgin Transportation Center, a Pace-owned transit station that offers connections to 10 Pace bus routes and the Metra Milwaukee District West line.

5.2.1.5 Planned Improvements

The Kane County 2040 Long Range Transit Plan, adopted on June 14, 2011, recommends the extension of fixed route service to the Old Town Area in Carpentersville. The strategy was defined as "medium term," or targeted for implementation within six to 15 years, and the financial and operational responsibility for the strategy was assigned to Pace.[14] Implementation planning for this service extension is not currently underway.

5.2.2 Metra

5.2.2.1 Span, frequency of service

While Metra service also operates on the Union Pacific Northwest line to the north of Carpentersville through Cary and Crystal Lake, most Carpentersville residents choose to access Metra service through the Elgin Station or Big Timber Station on the Milwaukee District West line. Both of these stations are located in Elgin. This line, which connects Chicago Union Station to Big Timber Road Station, operates seven days a week.

Weekday inbound trains from Elgin Station to Chicago Union Station operate at 10 to 40 minute headways between 4:17 AM and 7:48 AM. Headways then increase to 60 minutes through the last departure of the day at 10:16 PM. Service from the Big Timber Road Station is similar, although the first departure does not occur until 5:27 AM.

Weekday outbound trains service the Elgin Station at approximately 60 minute headways beginning at 6:55 AM until the evening rush starts at approximately 5:30 PM. Frequencies then increase to about seven to 20 minutes, before lengthening to 60 minutes at approximately 8:00 PM. Service to the Big Timber Station is similar, although three of the outbound trains terminate at the Elgin Station.

Saturday inbound service to the Elgin Station operates at 60 minute headways between 5:55 AM and 11:55 AM, and then increases to two hour headways between 1:55 PM and the last departure of the day at 10:10 PM. Saturday outbound service arrives in Elgin (which is the Saturday terminal station) at 60 minute to two hour headways between 8:45 AM and 1:55 AM (departing Chicago Union Station between 7:30 AM and 12:40 AM).

Sunday inbound service to Elgin Station operates at two hour headways between 5:55 AM and 10:10 PM; Sunday outbound service arrives in Elgin (which is the Sunday terminal station) at two hour headways between 9:45 AM and 1:55 AM (departing Chicago Union Station between 8:30 AM and 12:40 AM).

[14] Kane County 2040 Long Range Transit Plan, p. 49

5.2.2.2 Ticket Prices

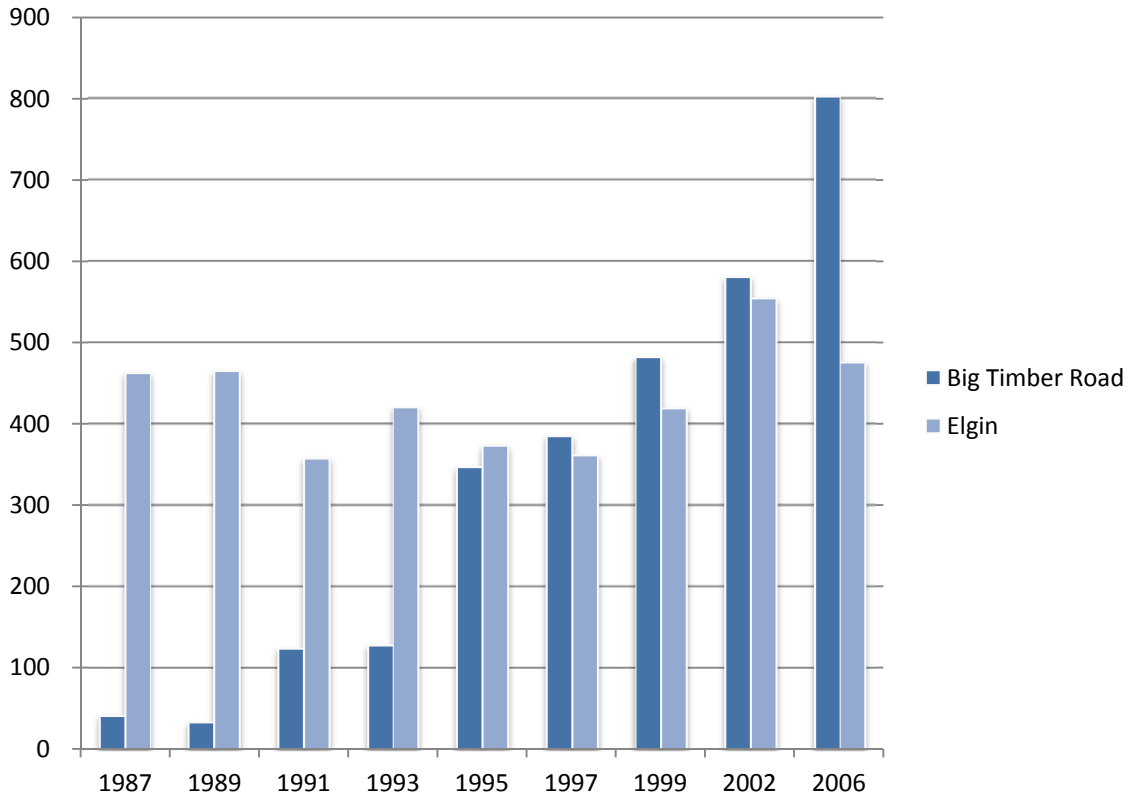
The Elgin and Big Timber Road Stations are in Zone H; ticket prices, which reflect travel to Chicago Union Station, are:

- One-Way: $6.75
- 10-Ride: $67.50
- Monthly: $192.25

5.2.2.3 Ridership

As shown in Figure 5-6, weekday boardings at the Big Timber Station have steadily risen between 1987 and 2006, with a particularly large jump in ridership occurring in the early 1990s. The weekday boardings at Elgin Station were slightly higher in 2006 than in 1987, with periods of ridership growth and loss occurring in the interim 19 years.

Figure 5-6: Weekday Metra Station Boardings



Source: Metra

5.2.2.4 Existing facilities

The Milwaukee District West Elgin Station is located next to the Elgin Transportation Center, a Pace-owned transit station that offers connections between 10 Pace bus routes. The Elgin Metra Station includes an enclosed station that is open between 4:00 AM and 7:00 PM, and a ticket agent that is on duty during the morning seven days a week. The station also includes two parking lots with a total of

147 parking spots. An October 2011 survey indicated a 99 percent utilization rate of these parking spaces. Parking at the station costs $1.50 per day.

The Big Timber Station, which is the terminal station on the Milwaukee District West line and is one more stop outbound from the Elgin Station, includes 694 parking spaces in four lots. An October 2011 survey found a 78 percent utilization rate of these parking spaces. Parking at the station costs $1.50 per day or $30.00 per month. A shelter is provided for waiting passengers; there is no ticket agent on duty.

5.2.3 Ride in Kane

The Ride in Kane Program was launched on February 15, 2008 to provide increased mobility for Kane County's many seniors, persons with disabilities, and low-income residents travelling for work-related purposes. The program contracts with Pace to manage the day-to-day operations of the centralized call center, which dispatches taxis, Pace vans, and Pace lift-equipped buses for demand response, curb-to-curb transportation.

Transportation services, which require a minimum of four hours' notice for reservations, are available 24 hours a day, seven days a week, 365 days a year, including holidays. Trips of 10 miles or less cost $3.00, and $1.50 per mile thereafter.

The program currently serves approximately 5,000 clients a month, which is a three-fold increase in patronage since the service started in 2008. Spring and summer see the highest levels of ridership.

5.3 Pedestrian

5.3.1.1 Existing Conditions

Carpentersville's existing pedestrian environment varies throughout the Village. The curvilinear nature of many of the residential neighborhoods, particularly on the western side of the Village, discourages easy pedestrian access to non-residential destinations. There are also gaps in sidewalks along many of the major collector roadways, including L.W. Besinger Road, Maple Avenue, Lake Marian Road, and Miller Road.

Walk Score® is a website that calculates a community's "walkability," or the ability of someone to live a car-light lifestyle. An algorithm awards points based on the distance to a variety of amenities, including restaurants and bars, grocery stores, outdoor places, schools, shopping, entertainment, health facilities and errand destinations. Amenities within a quarter-mile receive maximum points, and no points are awarded for amenities that are located further than one mile. Locations are scored between 0 and 100 and divided into the categories shown in the matrix below.[15]

[15] Walk Score, http://www.walkscore.com/

Figure 5-7: Walk Score® Matrix

Walk Score®	Description
90-100	**Walker's Paradise** Daily errands do not require a car.
70-89	**Very Walkable** Most errands can be accomplished on foot.
50-69	**Somewhat Walkable** Some amenities within walking distance.
25-49	**Car-Dependent** A few amenities within walking distance.
0-24	**Car-Dependent** Almost all errands require a car.

Source: www.walkscore.com

Walk Score uses a variety of data sources to feed the algorithm, including Google, Education.com, Open Street Map, and Localeze. Figure 5-8 shows Carpentersville's Village-wide average score relative to the municipal-wide average scores of its surrounding communities.

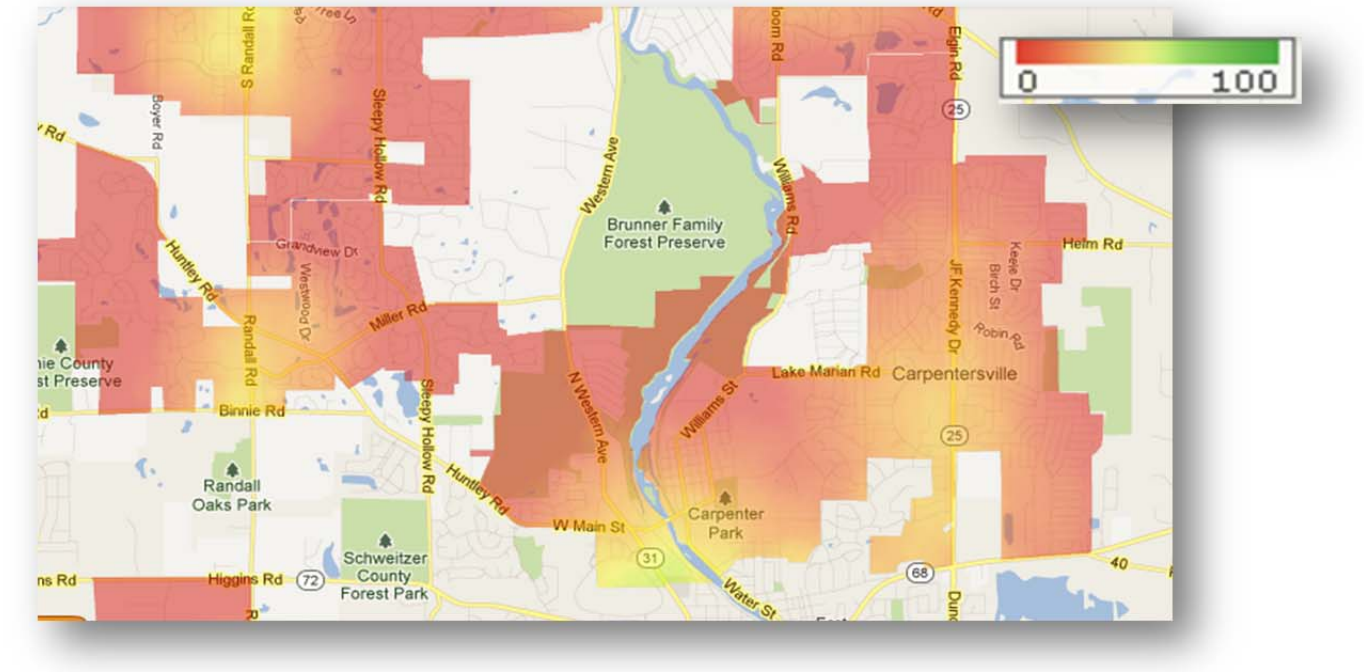
Figure 5-8: Walk Score® Results

Community	Walk Score®	Description
Carpentersville	35	Car-Dependent
Elgin	44	Car-Dependent
Algonquin	37	Car-Dependent
Lake in the Hills	26	Car-Dependent

Source: www.walkscore.com

Figure 5-9 shows how Carpentersville's Walk Score® varies throughout the Village. The areas with the highest scores (indicating better walkability) are clustered in mixed-use or higher residential density neighborhoods; the lower scores reflect larger-lot, auto-oriented, or single-use development patterns.

Figure 5-9: Walk Score Map®



Source: www.walkscore.com

5.3.1.2 Planned Improvements

As described in Section 5.1.3, improvements along Maple Avenue will include sidewalk facilities, which will improve east-west pedestrian linkages on the eastern side of the Village.

The Longmeadow Parkway Study recommends the inclusion of a pedestrian bridge from just north of East Cottage Avenue onto Brunner Family Forest Preserve Property, connecting the existing Fox River Trail with a recommended trail system within the Preserve.

5.4 Bicycle

5.4.1.1 Existing Conditions

The Village of Carpentersville's existing bicycle facilities are concentrated along the Fox River Trail. There are limited on-street bicycle facilities; bike riders must operate in mixed traffic with motorized vehicles.

5.4.1.2 Planned Improvements

As shown in Figure 5-1, a variety of bike facility investments is planned throughout the Village to complement and provide connectivity to the Fox River Trail.

As described in Section 5.1.3, improvements along Maple Avenue will include an asphalt bike path, which will improve bike connectivity to the Fox River Trail.

The Longmeadow Parkway Corridor Study identifies a series of multi-use trails for potential inclusion in the upgrades and investments made to the Brunner Family Forest Preserve as part of the construction.

In coordination with CAMBr (Chicago Area Mountain Bikers, Inc.), the Village is allowing a series of upgrades to Keith Andres Park that include the creation of a multi-use, natural surface recreational trail, recreational access trail, mountain bike trail system and bike skills area. The Trail is being built for public recreational use, for bicycling, running, hiking, walking, and other pedestrian use, and may eventually provide a connection to the Fox River Trail.

Raceway Woods is 122 acres of preserved open space on the site of what was formerly an automobile race track. This space, which is partially owned and managed by both the Dundee Park District and the Kane County Forest Preserve District, includes horseback riding trails, limestone screenings trails and asphalt bike trails, which are multi-use trails shared with runners, bicyclists, dog walkers, and other users.

6.0 Stakeholder Outreach

6.1 Key Stakeholder Interviews

Five key stakeholders were identified for targeted outreach by the consultant team in consultation with Village staff and the project Steering Committee. These key stakeholders were chosen because they, through their professional activities or affiliations, were identified as likely to have specific insight into the existing dynamics of Carpentersville and its transportation network. These key stakeholders are:

- Jose Ares, Centro de Informacion
- Don Burroway, Village of Carpentersville Board of Trustees
- Maggie Rivera, League of United Latin American Citizens; Carpentersville business owner
- John Svalenka, Village of Carpentersville
- Gerald Wille, Carpentersville Business Development Committee

These stakeholders were asked a standardized series of questions in December 2012 and January 2013 to identify the major transportation issues in Carpentersville and the major activity generators within the Village; discuss the ease of travel between these generators; identify the major employers within the Village and common commuting methods for Carpentersville residents; discuss how Village demographics affect resident mobility; and identify improvements to increase connectivity between places of residence and employment within the Village.

Roadway congestion, poor east-west connectivity, limited non-motorized transportation facilities, and the perception of limited transit service were the major transportation issues that were identified by multiple key stakeholders.

These issues sometimes make it difficult for residents to access the key activity generators within the Village, as identified by the key stakeholders: major employers (including Otto Engineering, the industrial park on Commerce Parkway, schools through the Village, and retail uses along Route 25). In particular, traffic congestion, the limited frequency of fixed route transit service, and the alignments of existing fixed route transit service all contributed to lengthened travel times and increased travel expense.

Major employers within the Village include the school district (Community Unit School District 300), Village Food Market, Wal-Mart, Spring Hill Mall, Meadowdale Shopping Center, the businesses located within the industrial park on Commerce Parkway, and Revcor. Most of the key stakeholders believe that employees either drive alone or commute to work because the existing non-motorized facilities and transit service are too limited to ensure a consistent, smooth commute.

The stakeholders commented that demographics will continue to affect the mobility of Village residents: Carpentersville is a youthful and strongly Hispanic community that will benefit from a robust non-motorized transportation network. Lower-income households, in particular, tend to rely heavily on public transportation to access employment and services.

The key stakeholders identified some consistent ideas for improvements to Carpentersville's existing transportation network, including improved fixed route transit frequency and span of service, improved non-motorized transportation facilities (complete the sidewalk network and increase the number of bike paths), and improved east-west connectivity through the Village.

6.2 Employer Outreach

An Employer Outreach Plan (available under separate cover) was developed to identify up to five major employers within the Village and guide outreach to these employers to garner employer-based input on the existing conditions of the Village's transportation network, how it affects their business, and suggestions for improvements to the transportation network.

These employers included:

- Otto Engineering
- Revcor
- Trim-Rite Food Corp.
- Village Fresh Market
- Wal-Mart

These employers were chosen because of they are large, employ a large number of Carpentersville residents, employ a large number of Hispanic Carpentersville residents, or a combination of the three. Despite repeated attempts, Wal-Mart chose to not participate in an interview for this project; the other four employers were responsive.

Through phone interviews in March 2013, these employers expressed that the vast majority of their employees either drive to work alone or as part of a carpool; some will walk from the surrounding neighborhoods. Because these employers typically schedule their workers in shifts, several commented that the existing fixed route transit service may not be a viable commuting option for their employees because the transit schedule may not align with shift start/end times. The demographic profile of many of these employees (lower-income, Hispanic) suggests that additional lower-cost transportation options would improve their mobility.

While these employers did not identify any major roadway congestion issues, several commented that existing fixed route transit service did not include transit stops near their business and that existing non-motorized transportation facilities (sidewalks and bike paths, in particular)were incomplete.

Several years ago, Otto Engineering explored the possibility of running an employee shuttle between the Elgin Metra station, several fixed locations through the Village and surrounding communities, and their facility as a means to attract skilled workers. At the time, the demand for skilled workers was high, and Otto believed that this amenity would favorably set it apart from its competitors. While the company ultimately decided not to pursue this strategy, it does indicate employer recognition that a variety of commuting options are attractive to existing and potential employees, particularly in a competitive recruiting environment.

These employers were also asked to help distribute the Community Input Survey to their employees; the intent, contents, and results of these surveys are described below in Section 6.3.

6.3 Community Survey Results

A community survey was developed to gather demographic information and garner input on respondents':

- Employment and commuting patterns,
- Travel patterns and mode choices,
- Opinions on transportation network conditions within the Village, and
- Suggestions for improvements to the transportation network.

The survey, which was written in both English and Spanish, was distributed to 15 sites around Carpentersville (including Village Hall, major employers, retail outlets, and the Dundee Township Public Library), and links to an electronic version of the surveys (in English and Spanish) were posted to the Village website.

Paper surveys were returned to Village Hall for processing; the online surveys were available between March 18 and April 25, 2013.

55 surveys (electronic and hard copy) were completed and processed; 36 English language surveys and 19 Spanish language surveys. Select findings from the surveys are discussed below.

The majority of survey respondents were younger than 51 years old.

Figure 6-1: English Survey Question: Age

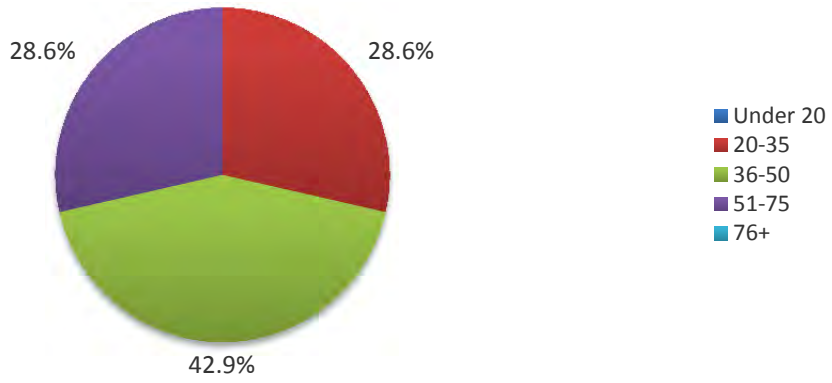
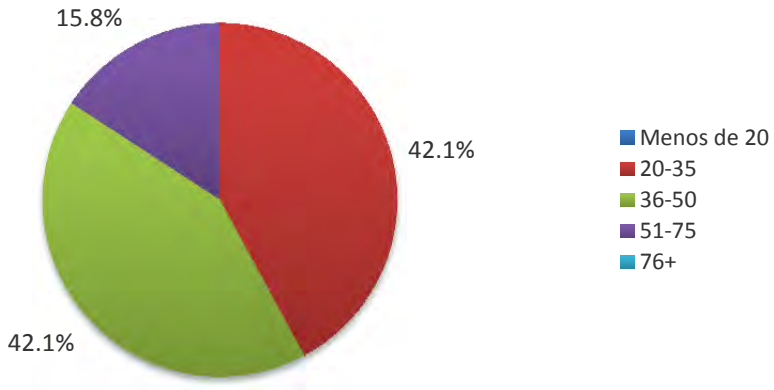


Figure 6-2: Spanish Survey Question: Age



The vast majority of English-language survey respondents had three or less household members, while the nearly 90 percent of Spanish-language survey respondents report four or five people living in their households.

Figure 6-3: English Survey Question: Number of People in Your Household

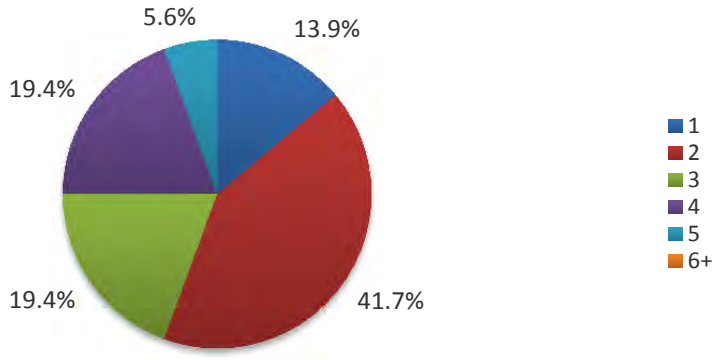
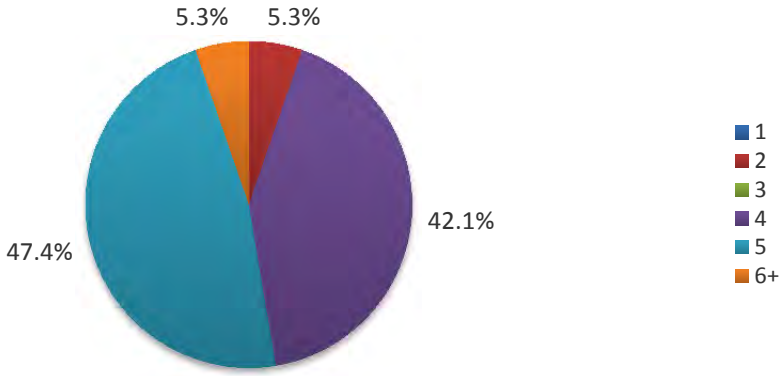
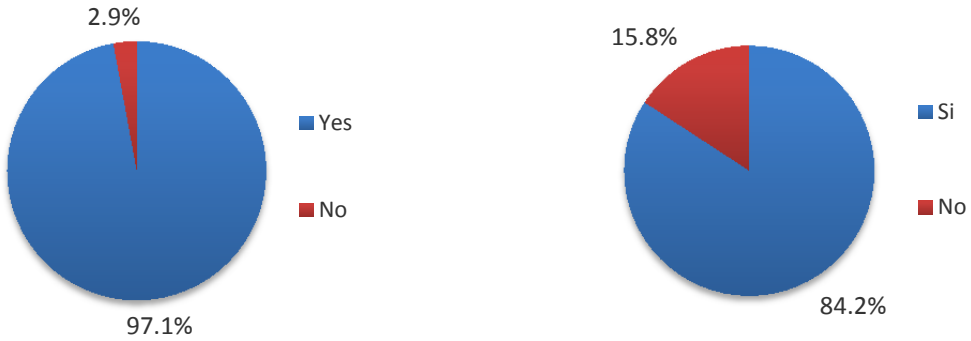


Figure 6-4: Spanish Survey Question: Number of People in Your Household



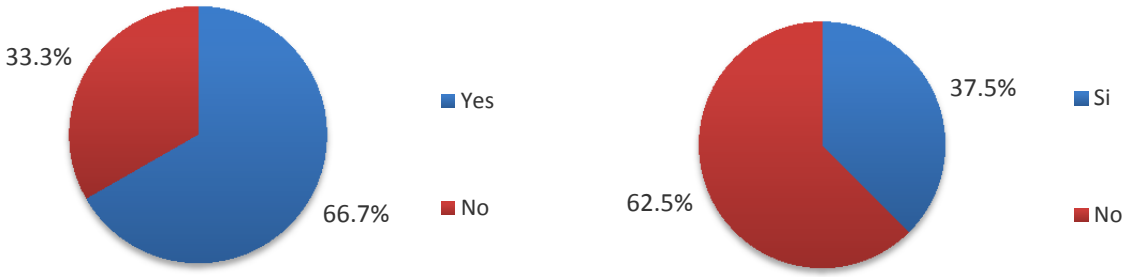
English language survey respondents reported comparatively low levels of unemployment, while the unemployment rate of Spanish language survey respondents exceeded 15 percent.

Figure 6-5: English and Spanish Survey Question: Are You Currently Employed?



More English language survey respondents (66.7 percent) reported working within Carpentersville than Spanish language survey respondents (37.5 percent).

Figure 6-6: English and Spanish Survey Question: Is Your Place of Employment in Carpentersville?



While the majority of all survey respondents classified their Carpentersville-based commute to work as either easy or tolerable, 33 percent of Spanish language survey respondents classified their commute as "Difficult – Almost every day there are problems or delays."

Figure 6-7: English Survey Question: If you live AND work in Carpentersville, how would you rate the ease or difficulty of your commute?

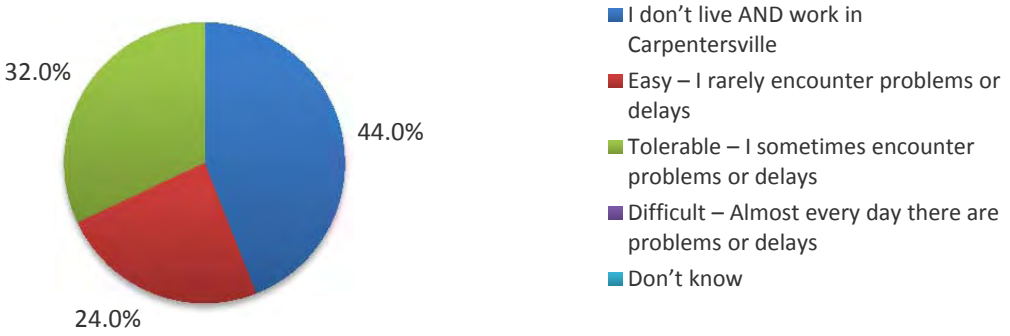
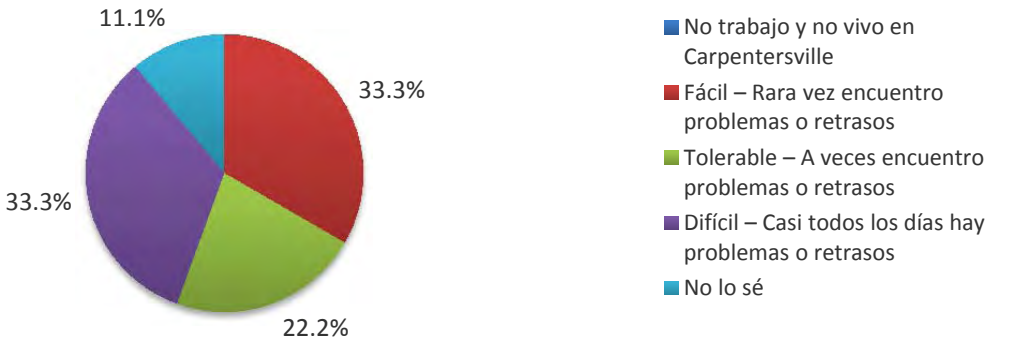


Figure 6-8: Spanish Survey Question: If you live AND work in Carpentersville, how would you rate the ease or difficulty of your commute?



While the majority of all respondents drive alone to work, Spanish language survey respondents reported greater use of carpools and Pace service.

Figure 6-9: English Survey Question: How do you typically commute to work? (If you take the bus to the train, please check both boxes)

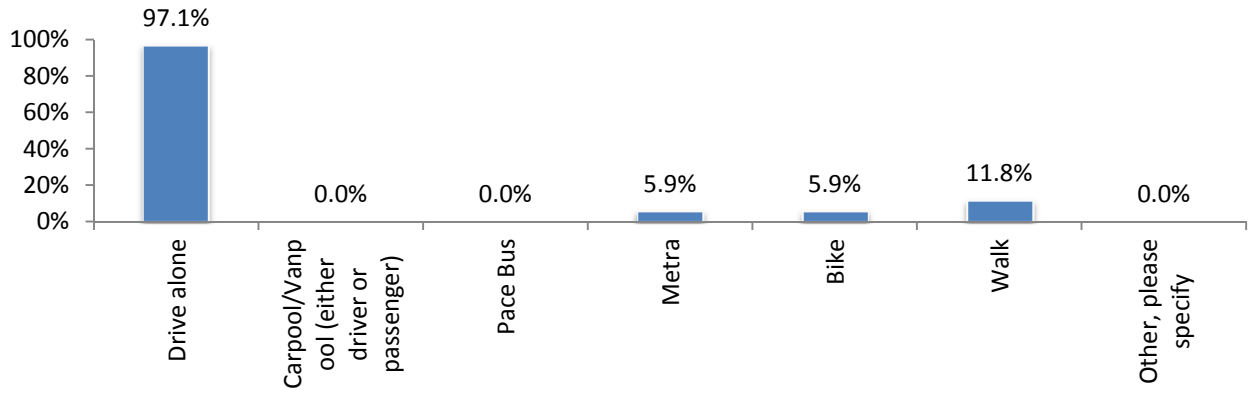
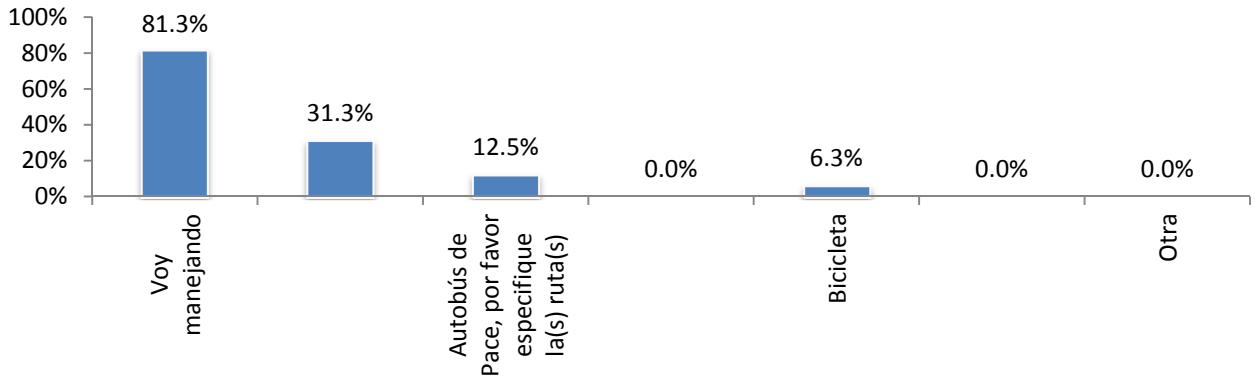
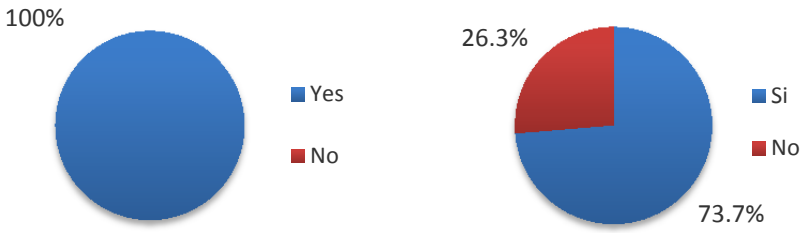


Figure 6-10: Spanish Survey Question: How do you typically commute to work? (If you take the bus to the train, please check both boxes)



While 100 percent of English language survey respondents have access to a car, only 73.7 percent of Spanish language survey respondents do.

Figure 6-11: English and Spanish Survey Question: Do you access to a car?



While no Spanish language survey respondents report using transit every day (and some English language survey respondents do), Spanish language survey respondents report using transit much more frequently than English language survey respondents.

Figure 6-12: English Survey Question: How often do you use transit? (any type of transit service)

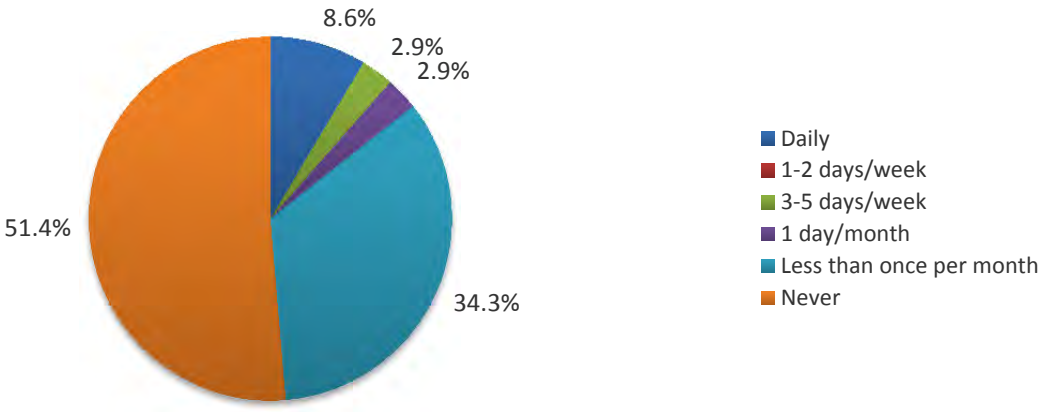
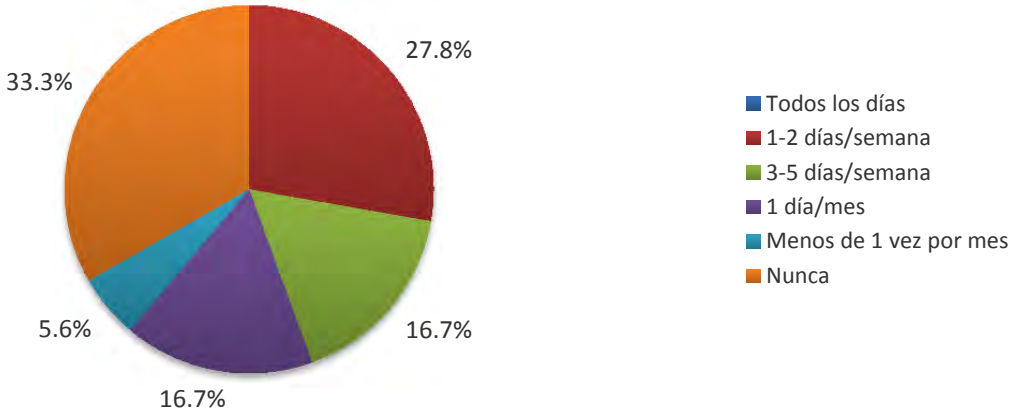


Figure 6-13: Spanish Survey Question: How often do you use transit? (any type of transit service)



English language survey respondents were much more likely to report either not using transit, or using Metra service, than Spanish language service respondents, who reported much high usage of Pace service.

Figure 6-14: English Survey Question: If you use transit, which provider do you use? Choose more than one, if necessary.

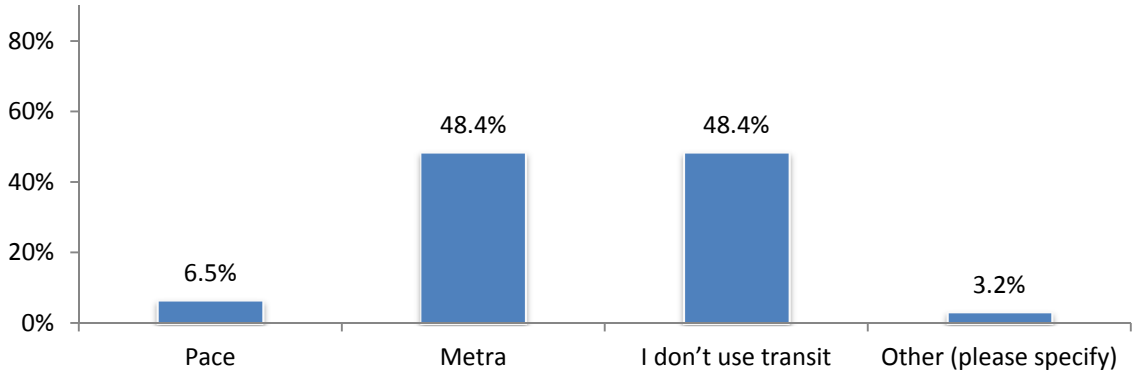
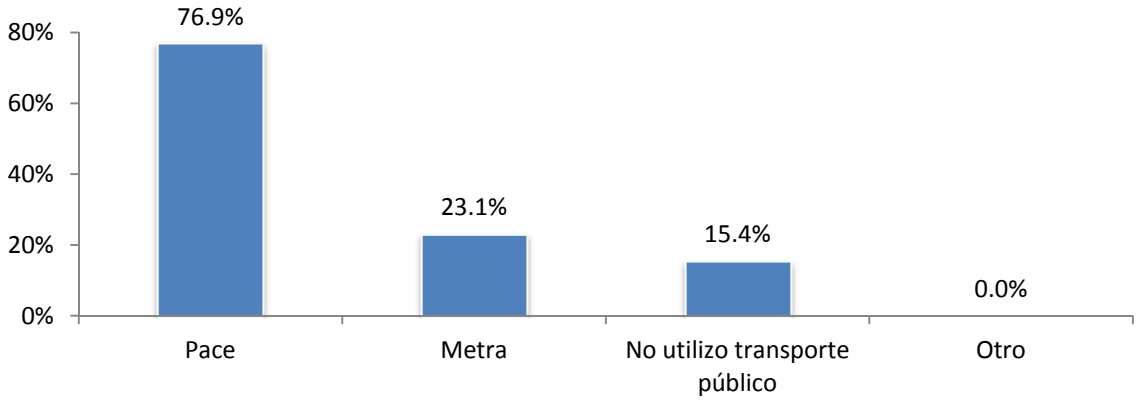


Figure 6-15: Spanish Survey Question: If you use transit, which provider do you use? Choose more than one, if necessary



When asked about features that could be added to improve their transit, popular responses from all respondents included expanded routes to more destinations and more transit stops/stations (near home and/or work).

Figure 6-16: English Survey Question: Please tell us the most important feature to improve your transit trip. You may also add reasons in the "other" field.

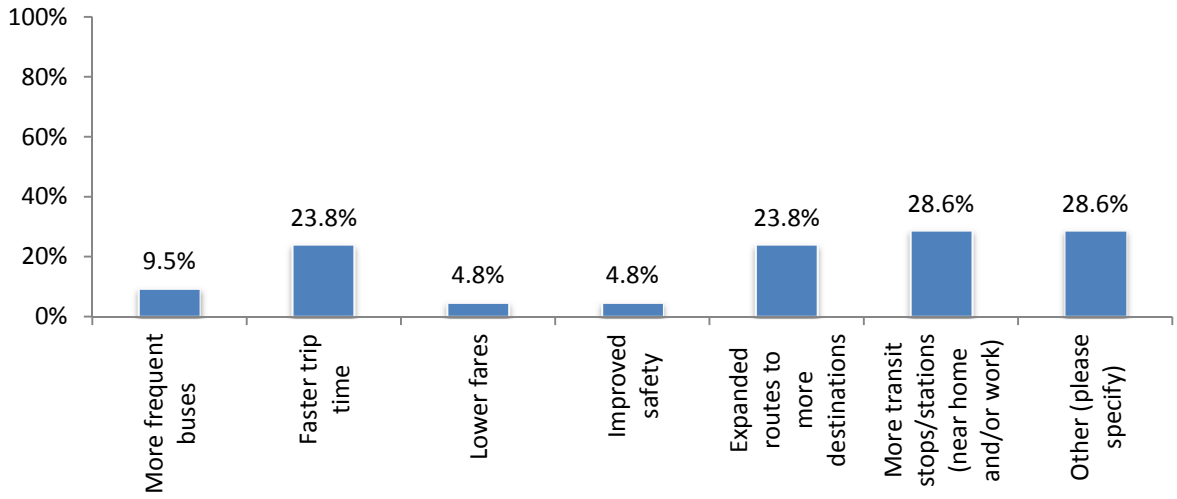
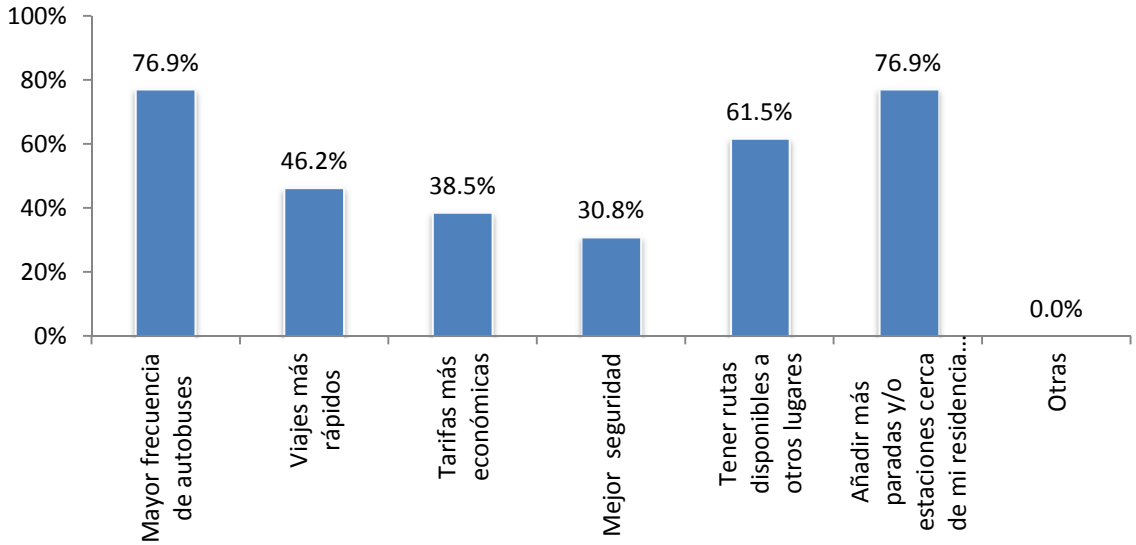


Figure 6-17: Spanish Survey Question: Please tell us the most important feature to improve your transit trip. You may also add reasons in the "other" field.



When traveling within Carpentersville, the majority of English language survey respondents reported driving alone, while Spanish language survey respondents reports using a broader range of modes.

Figure 6-18: English Survey Question: When you travel WITHIN Carpentersville, how do you typically get around?

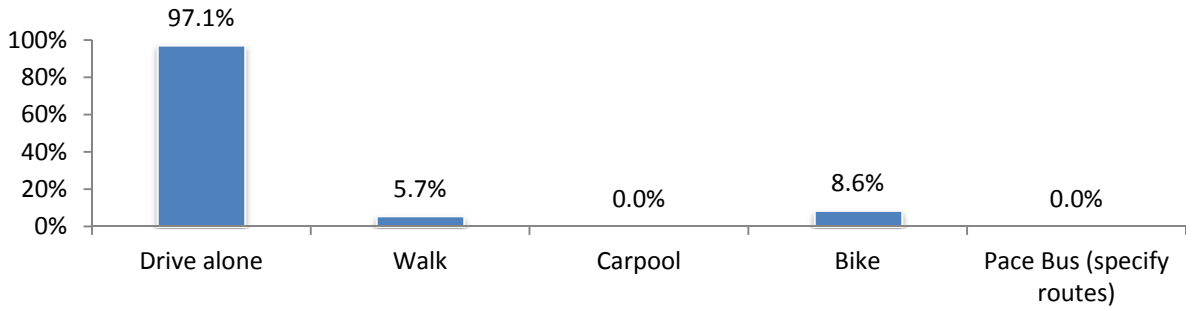
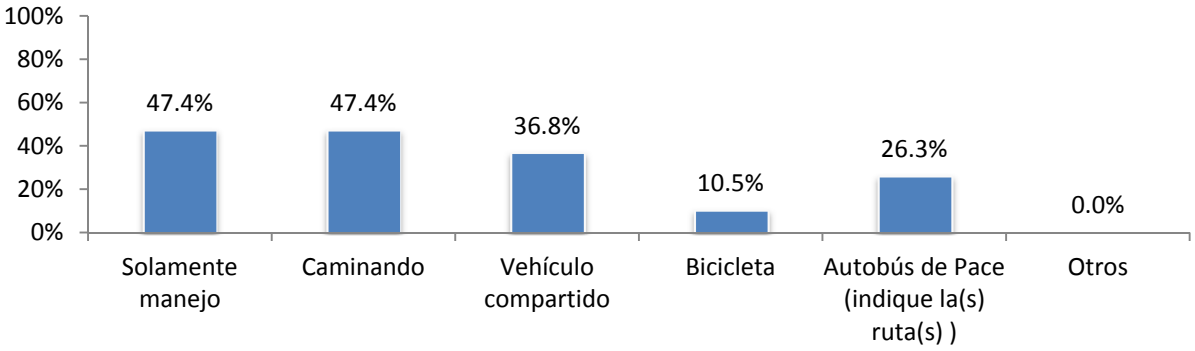
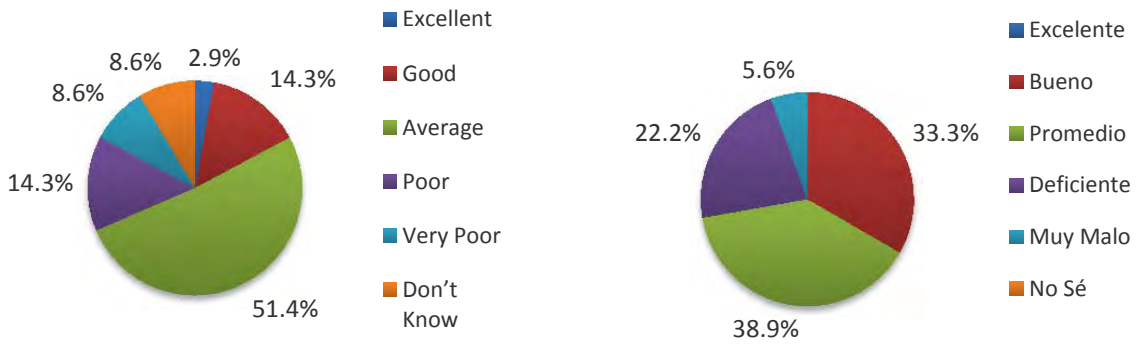


Figure 6-19: Spanish Survey Question: When you travel WITHIN Carpentersville, how do you typically get around?



The majority of survey respondents reported that Carpentersville's existing transportation network as either good or average.

Figure 6-20: English and Spanish Survey Question: How would you rate Carpentersville's overall existing transportation network? (ability to safely and efficiently move residents, employees, and visitors by car, transit, foot or bike)



When asked to identify their top three concerns about Carpentesville's transportation network, English language survey respondents were most concerned about traffic congestion and poor maintenance of streets, while Spanish language survey respondents were concerned about transit service (difficulty in getting to a transit station/stop, lack of transit service to their destination, and infrequent transit service), in addition to traffic congestion and poor maintenance of streets.

Figure 6-21: English Survey Question: Please identify your top three concerns about Carpentersville's transportation network.

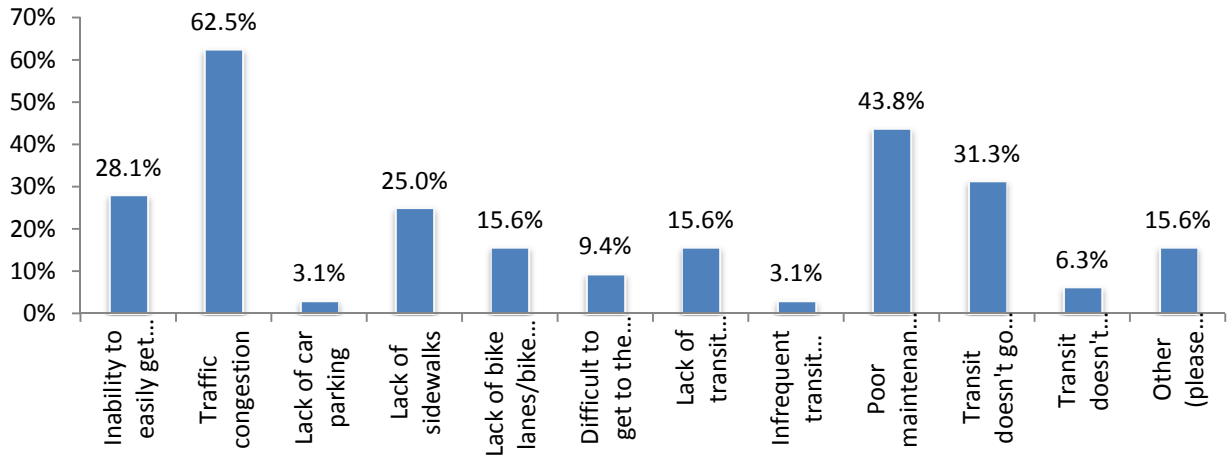
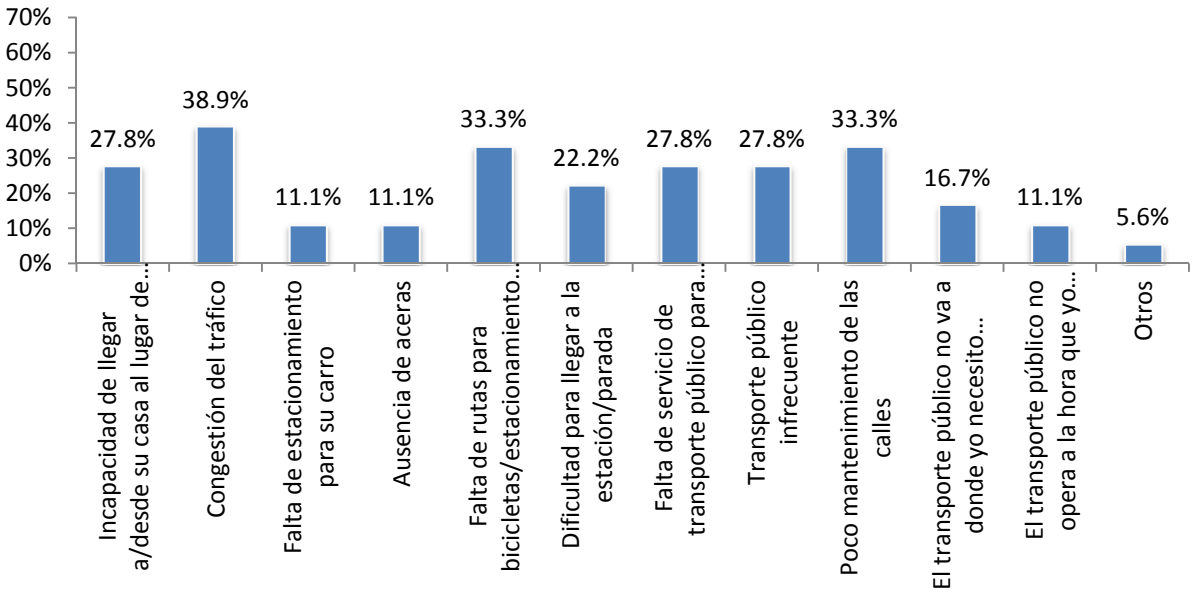


Figure 6-22: Spanish Survey Question: Please identify your top three concerns about Carpentersville's transportation network.



When asked for suggestions to improvements to Carpentersville's transportation network, the most common responses requested increased east-west connectivity, expanded transit service, and improvements to non-motorized transportation facilities. A selection of responses that reflects these trends is included below.

- "there is no means of public transportation through old town..- cannot walk to Spring Hill Mall up Main st hill. no cross walks to cross 31 if you do. no sidewalks leading to the east side of town - cannot walk to route 25 businesses without walking on road from old town."
- "Expand to the west side, transportation to the train"
- "Roadways across the Fox River need to be improved. The intersections at Huntley and Washington needs to be improved. I also would like a bike path up and down route 31."
- "Need to improve bike accessibility on western side of carpentersville and safe crossing of Randall road at miller - and bike accessibility to Randall oaks park and recreation center. From our neighborhood we can't really safely bike to anywhere in carpentersville."
- "Metra stop in Carpentersville?"
- "Pace should run a route past Carpenter Park and OTTO Engineering."

7.0 Conclusions

Carpentersville is an established, vibrant community who's shifting demographic trends and development patterns are impacting demand on the existing transportation network and affecting the mobility of Carpentersville residents and employees. As shown in Figure 7-1 and discussed below, these changing dynamics present an opportunity to improve connectivity and the quality of life for Carpentersville's residents and employers.

- Carpentersville is a comparatively youthful community that has experienced strong rates of population growth, particularly of Hispanic residents in Spanish-speaking households, over the past decade.
    - **These trends indicate the potential to increase transit mode share in the future: transit service is often more attractive than driving to young and immigrant populations.**
- Carpentersville households have experienced a decline in household income over the past decade, which impacts transportation choices (ability to own a car and/or increased reliance on transit service), which then impacts employment choices (ability to access place of employment).
    - **A lower-cost transportation option that is viable as a commuting mode will support the sustainable economic health of Carpentersville families.**
- A comparatively high percentage of Carpentersville residents work in the manufacturing sector, which is typically scheduled in shifts.
    - **Improvements to the existing transit service should be sensitive to the schedules of major employers within the Village.**
- Carpentersville's highest density existing residential uses are clustered on the east side of the Village, but the newest residential and commercial developments are located on the west side of the Village.
    - **The growing residential and commercial areas on the west side of the Village will benefit from improved connectivity to the existing concentration of residential, institutional and commercial uses on the east side of the Village.**
- Circulation within the Village is constrained by limited Fox River crossings; the planned Longmeadow Corridor Extension will help to improve east-west traffic flow.
    - **This infrastructure investment will support improved connectivity between existing and future residential and employment centers.**
- Major employers within the Village are clustered along the Fox River near Old Town and to the east of Illinois Route 31 north of Raceway Woods.
    - **Existing fixed route transit service does not serve these areas.**
- Existing fixed route transit service is limited to the east side of the Village and oriented in a north-south pattern.
    - **Current transit network doesn't support existing mobility patterns.**

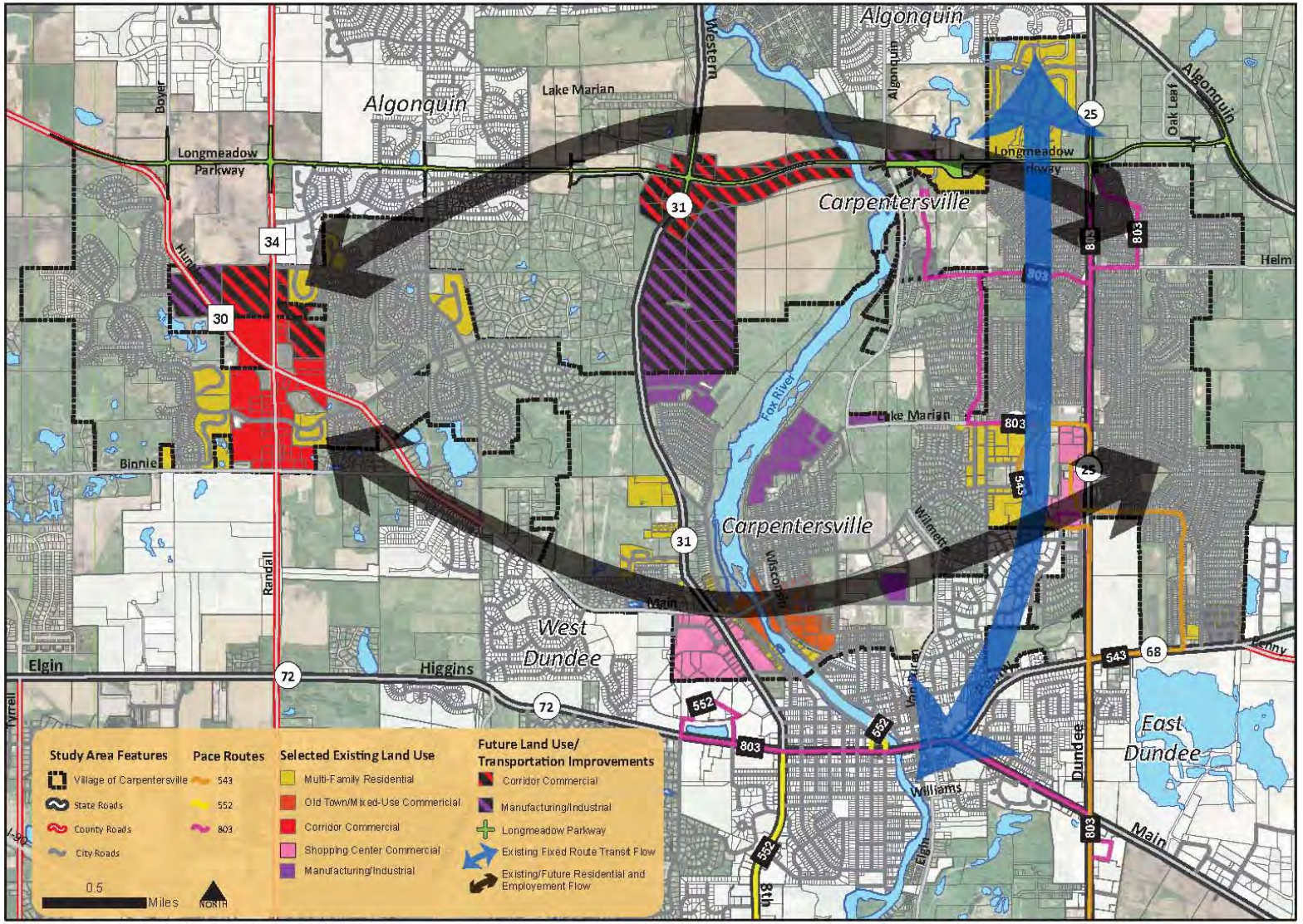
- A comparatively high percentage of Carpentersville residents own cars, and they experience comparatively high commuting times to work.
    - **Carpentersville residents are spending long commutes in their car rather than taking transit, which may indicate that transit is not a viable alternative to driving, or that the characteristics of existing transit make it less attractive than driving.**
- A comparatively small percentage of Carpentersville residents take transit to work, but a comparatively high percentage choose to carpool.
    - **While the high rates of carpooling indicate common residential origins and employment destinations (which is typically supportive of transit use), Carpentersville residents typically do not take transit to work. This suggests that residents are not averse to modes other than single passenger vehicle, but choose carpooling over transit.**
- A comparatively high percentage of Carpentersville residents work at an employer within the Village, but access to employers within the surrounding region is also important.
    - **Transit service should provide connections between residential and employment centers within the Village, as well as provide access to the broader transit network, including Metra commuter rail service.**

Despite socio-economic characteristics and development patterns that are typically conducive of transit usage, the low rates of transit-riding commuters indicates that there is a disconnect between travel demand and existing fixed route transit service.

7.1 Next Steps

This Existing Conditions Report will serve as the basis for the next phase of this project, which will include the development and evaluation of a series of transit investment strategies that will narrow the gap between existing and future mobility needs and existing transit service.

Figure 7-1: Carpentersville Transit Improvement Plan Framework for Opportunity



Framework for Opportunity

Carpentersville Transit Improvement Plan June 2013

Appendix B

Village of Carpentersville

Transit Improvement Plan

Market Analysis

October 2013

Prepared for

Regional Transportation Authority

Village of Carpentersville Illinois

Building a Better Tomorrow . . . Today

Prepared by

URS

MKC Associates

ftg fish transportation group

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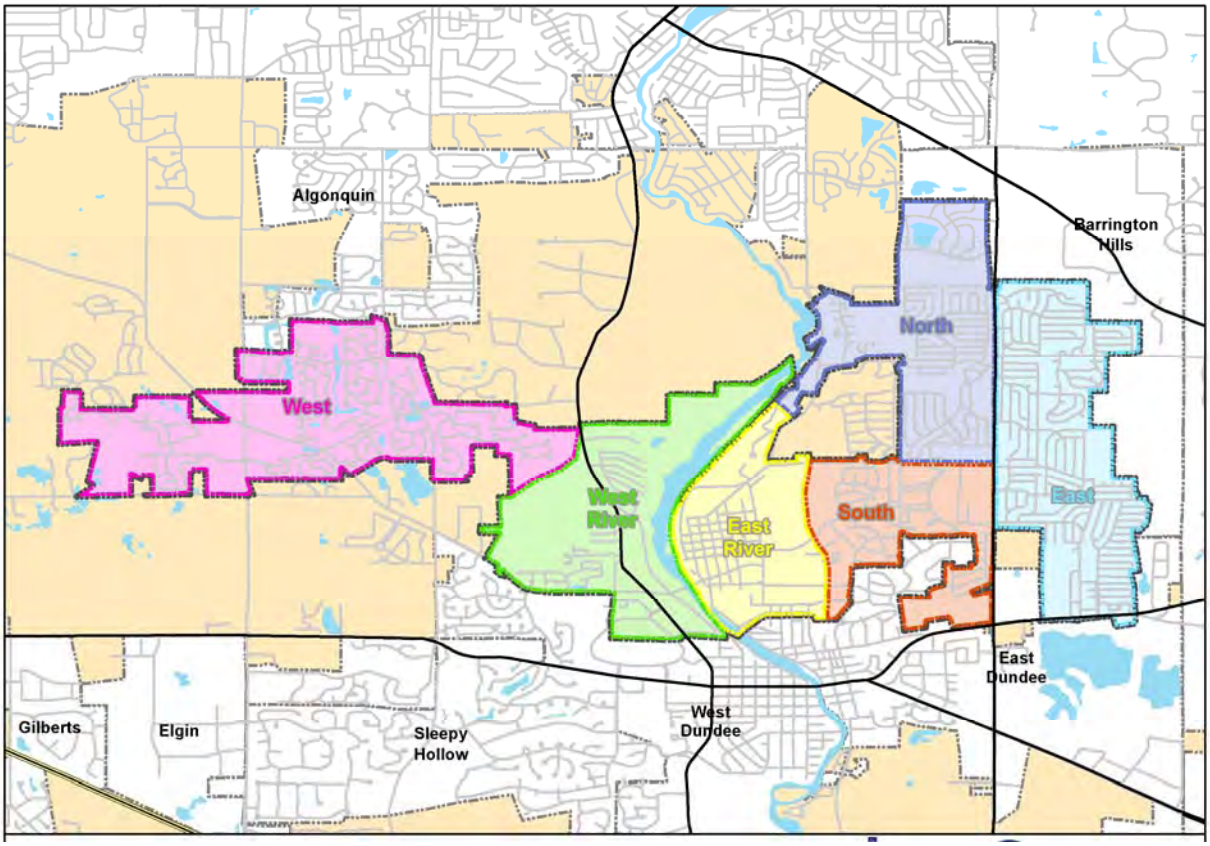
1.0 Introduction

When developing a transit plan, it is important to understand the underlying travel patterns that would be served by the transit service. This report documents a travel market analysis, which identifies the existing commute patterns within Carpentersville. This analysis is a multi-step process that looks at where people live and within Carpentersville. It utilizes 2010 Longitudinal Employment-Household Dynamics (LEHD) data, which taps into state unemployment data to determine actual commute travel patterns.

The data provides a good representation of those individuals who are workers but who are not self-employed - those Carpentersville residents who would most likely be users of transit service. This analysis focuses on the travel between residences and places of employment within the Village of Carpentersville. The Village of Carpentersville was divided into six areas for purposes of this analysis, as shown in Figure 1; beige areas are unincorporated.

Figure 1: Analysis Areas



2.0 Location of Housing and Employment

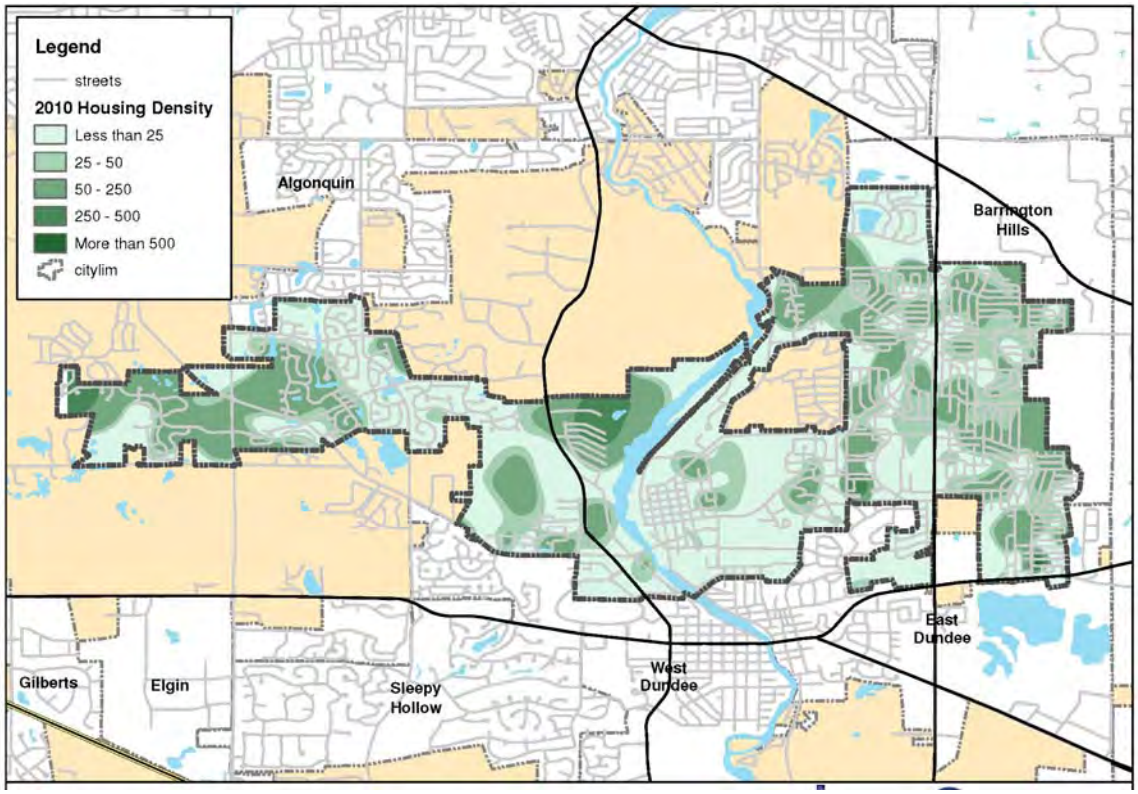
As shown in Table 1, the largest concentrations of worker residences occur within the East section of the village, followed by the North and West sections, while employment is concentrated within the East River and South sections. Although this spatial separation of housing and employment is very common throughout the U.S., it indicates that most Carpentersville residents are dependent upon and automobile or transit service for their daily commute. Figures 2 and 3 illustrate the relative population and employment densities within different portions of Carpentersville as of 2010.

Table 1: Geographic Location of where Workers (live) and Employment (work) within Carpentersville

	Workers	Employment
East	4,900	50
North	1,975	225
South	975	1,625
East River	725	2,400
West River	975	850
West	1,975	300
Total	**11,525**	**5,450**

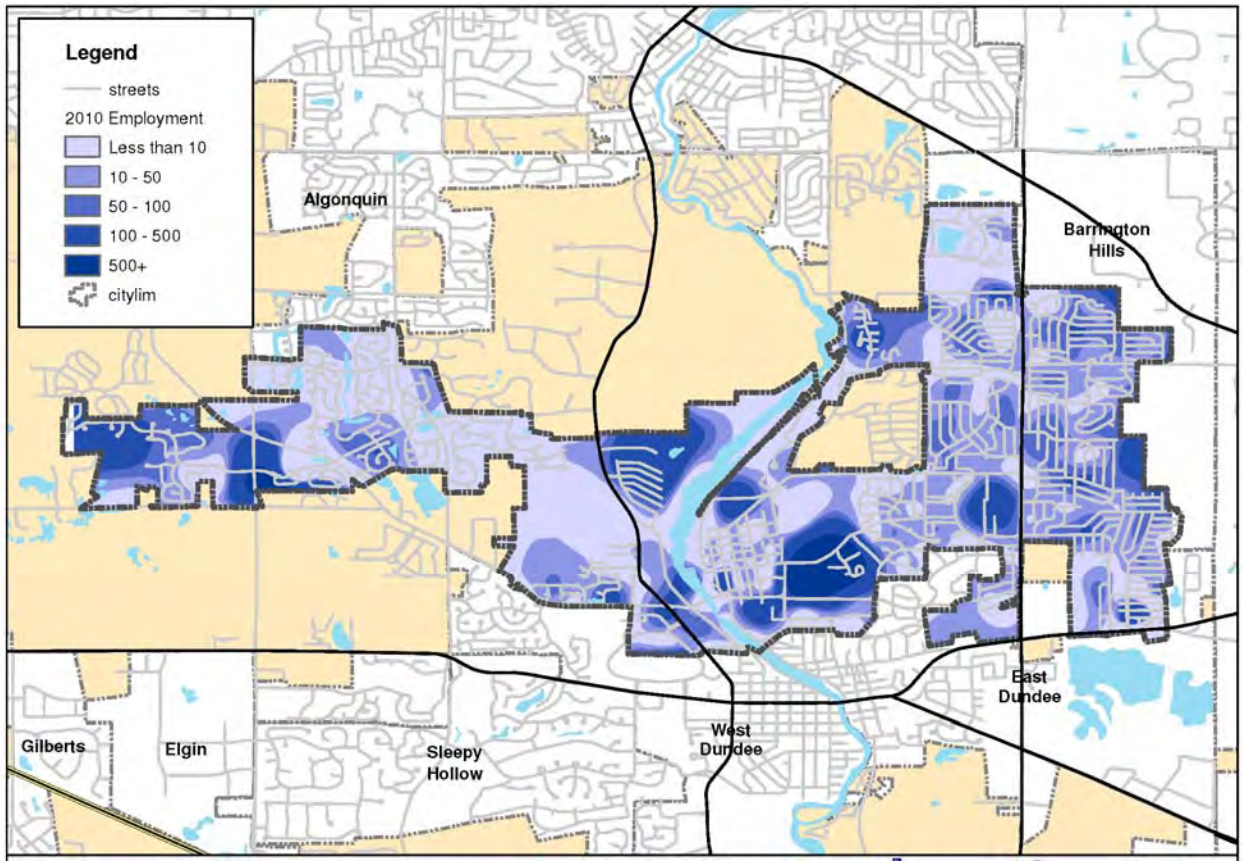
Source: US Census, 2010 LEHD

Figure 2: Population Density within Carpentersville



Source: US Census, 2010 LEHD

Figure 3: Employment Density within Carpentersville



Source: US Census, 2010 LEHD

3.0 Commute Flows

As discussed in Section 2, population and employment within Carpentersville is generally geographically separated. However, developing a successful transit system is not as simple as linking areas of Carpentersville where people live to areas of Carpentersville where people work for the simple reason that most people don't work at the job closest to their home.

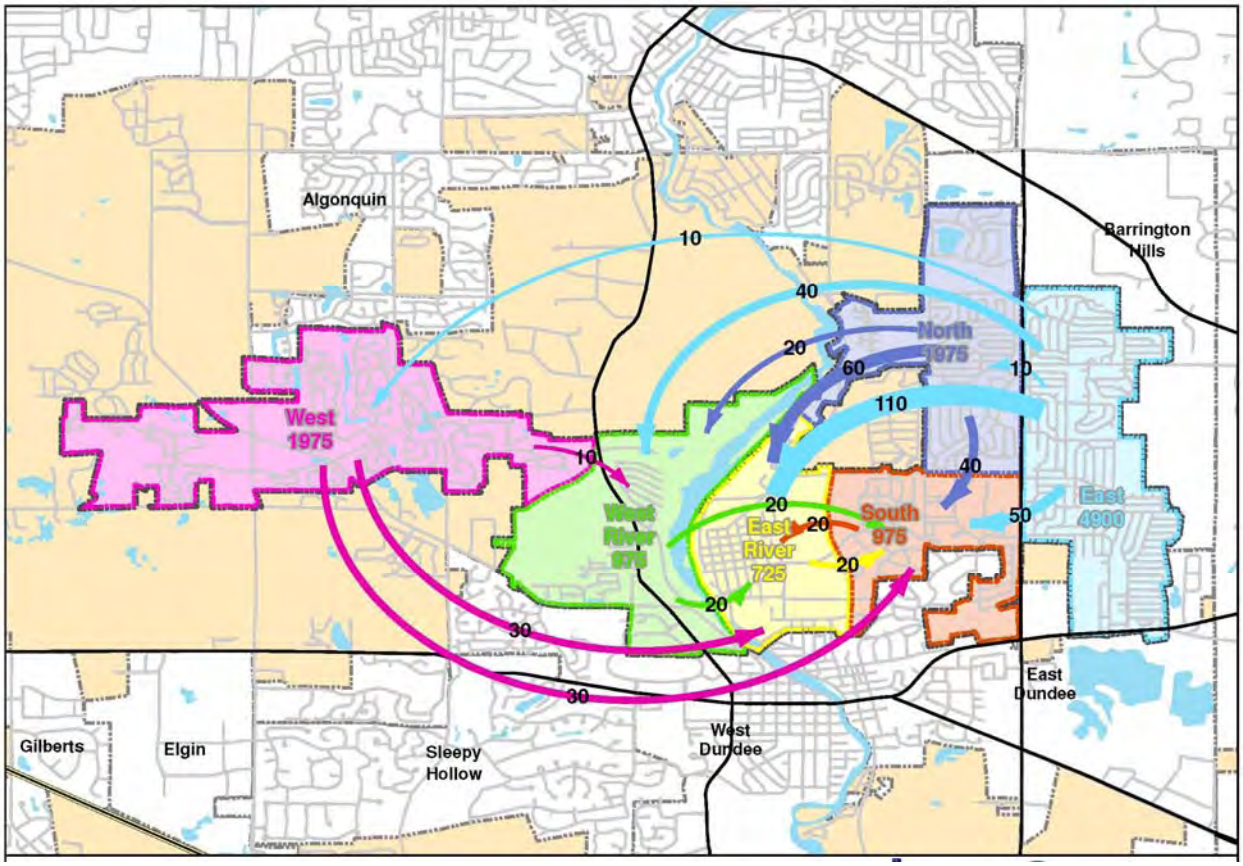
Similar to the overall population numbers most of the Carpentersville, residents who also work in Carpentersville live in the East and North area of the village, while most of the people who live and work in Carpentersville work in East River and South area. The West area of Carpentersville is a predominantly residential area; however, very few of the workers who live in West Carpentersville work in Carpentersville, as shown in Table 2 and Figure 4.

Table 2: Geographic Location of Population and Employment within Carpentersville

Residence	Employment						
	East	North	South	East River	West River	West	Total
East	10	10	50	110	40	10	**230**
North	0	10	40	60	20	0	**130**
South	0	0	20	20	0	0	**40**
East River	0	0	20	30	0	0	**50**
West River	0	0	20	20	10	0	**50**
West	0	0	30	30	10	10	**80**
Total	**10**	**20**	**180**	**270**	**80**	**20**	**580**

Source: US Census, 2010 LEHD

Figure 4: Commute Flows within Carpentersville*



Source: US Census, 2010 LEHD

**Colored numbers represent population, black number represent commute flows within Carpentersville.*

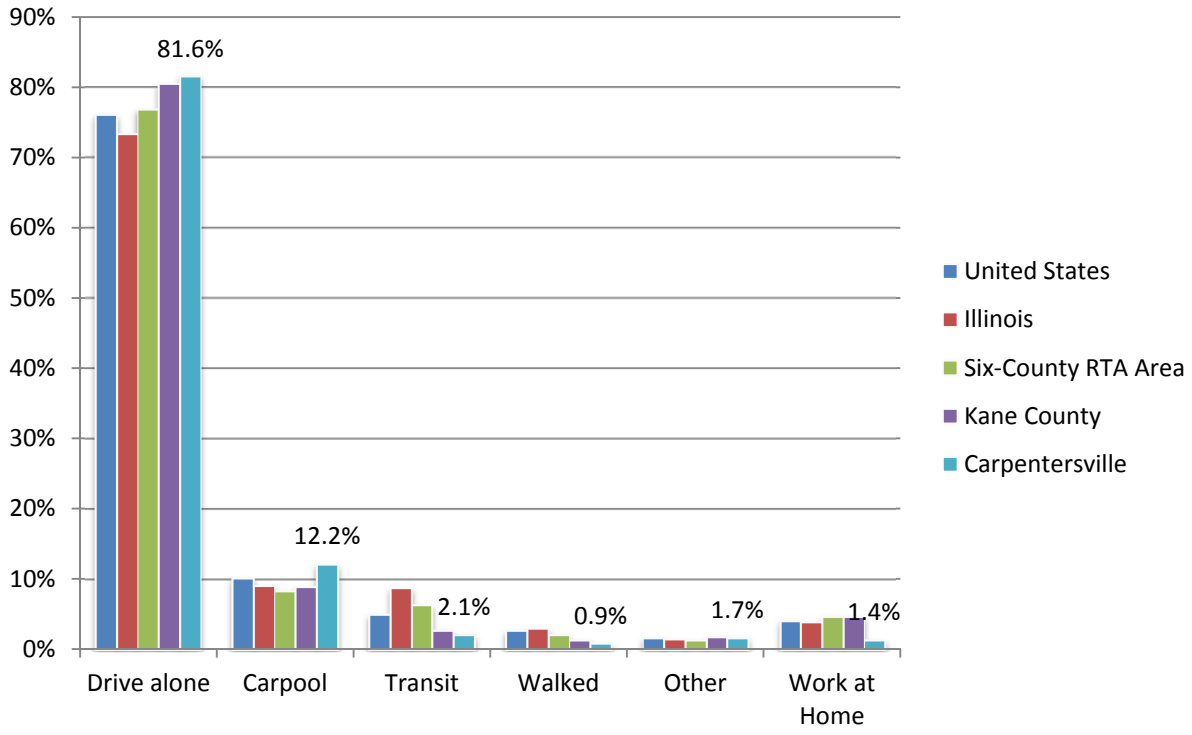
4.0 Mode Share

As shown in Figure 5, the majority of Carpentersville residents drive to work (81.6 percent), while only about two percent of the residents use transit. The comparatively high rate of carpooling indicates that there is some commonality between points of residential origin and employment destination.

Based on the commute flows discussed in Section 3 (Figure 4), it appears as though there may be limited demand for expanded fixed route transit service within Carpentersville because no single movement between areas in Carpentersville (as shown in Table 2) is much larger than 100 people, and most are significantly smaller. So, with a two percent transit mode share, it is not likely that more than two persons will be making any one movement between areas (100 persons * 2.1% mode share).

However, the high rate of carpooling may indicate that there is latent demand for vanpool service or other services which take advantage of those common origins and destinations, but are designed to serve groups of between five and 15 individuals.

Figure 5: Commuting by Modes, 2007-2011



Source: US Census, American Community Survey

5.0 Transit Ridership

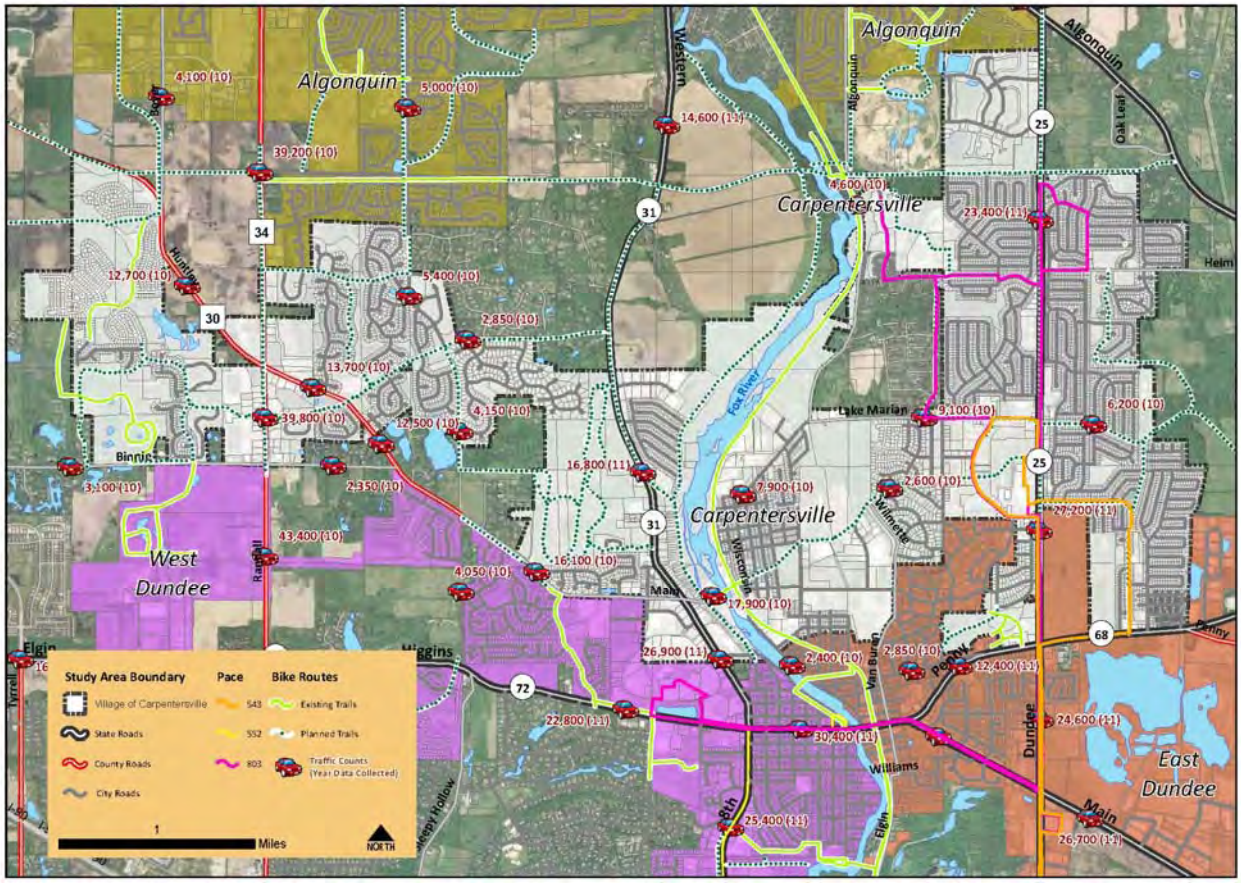
The Village of Carpentersville is directly served by two Pace bus routes (543 and 803). Route 543 provides connections to Metra service at the Elgin Station on the Milwaukee District West line. Route 543 is classified by Pace as intra-community service, which means that the service is contained within a community or has minor extensions beyond community boundaries. Route 803 is classified as suburban link service, which means that service does not provide connections to CTA service, but is also not exclusively an intra-community service. Suburban link routes are also not specifically geared to operate as a Metra feeders or express services.

Currently neither of the fixed route bus services that operate within Carpentersville serves the East River section of the Village, which is where the largest number of Carpentersville's jobs is located. The lack of fixed route connections between the residential concentrations in the East and North areas of the Village to the employment concentrations in the East River and South areas of the Village may be a contributing factor to the comparatively low current transit commute mode share.

Even if Carpentersville's transit commute mode share approached the statewide transit mode share (8.8 percent), it would still only represent approximately 10 persons per day based on current commute patterns, which makes the financial and operational feasibility of expanding fixed route transit service difficult.

While the American Community Survey (ACS) data does not provide information identifying the transit services that each rider is using, it is very likely that a significant proportion of Carpentersville's transit commuters ride Metra's Milwaukee West line into Chicago or intermediate suburban locations rather than Pace routes 543 or 803.

Figure 6: Existing Transportation Facilities in Carpentersville



6.0 Conclusion

The commute flows (discussed in Section 3) are unlikely to be efficiently served by modifications to existing Pace bus service because the Village's low transit mode share, when applied to existing ridership levels, is not sufficient to generate the ridership necessary to support the route expansion/modification that would be necessary to serve even the largest inter-Village commute flows. There is the potential that ridership could be increased by working with local employers to encourage higher levels of transit ridership by offering pre-tax transit passes or employer-based options to subsidize employee transit usage, and by reviewing Village parking requirements.

As discussed in Section 4, Carpentersville's high percentage of carpooling may indicate that there is latent demand for vanpool service or other services which take advantage of Village residents' common origins and destinations, but are designed to serve groups of between five and 15 individuals.

Appendix C

Village of Carpentersville

Transit Improvement Plan

Interim Deliverable: Transit Investment Options

December 2013

FINAL

Prepared for

Regional Transportation Authority

Village of Carpentersville Illinois

Building a Better Tomorrow . . . Today

Prepared by

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MKC Associates

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Table of Contents

1.0 Introduction

1.1 Task 3 Purpose

The purpose of Task 3 is to develop a series of transit improvement options for further refinement and consideration. Options include a variety of scenarios, ranging from minor modifications of the existing transit network to more efficiently serve the needs of existing riders to the creation of employer-supported transportation options that link specific employment centers with Village residential neighborhoods. The goal is to include transit alternatives that were innovative and specific to Carpentersville, but also operationally feasible. Transit infrastructure elements, including transit stop locations, sidewalks, and bike paths are also addressed. Staff from Pace have been consulted when considering modifications to the existing transit system, and the consultant team has leveraged the employer outreach conducted in Task 2 and conducted additional employer outreach to develop employer-based service concepts.

The options that are summarized in this report include:

- Demand response service
- Pace Vanpool Program
- Modifications to existing Pace fixed route bus service
- Infrastructure investments to support improved access to transit

It is recommended that the Community Vehicles Program and company-based vanpools and shuttle options be carried forwarded into further refinement through Task 3, along with a series of suggested infrastructure improvements to support access to transit service.

1.2 Background/Previous Work

Previous work related to transit options includes the Village's *Comprehensive Plan* and *Old Town Plan*, along with the Kane County *Long Range Transit Plan*.

The Village's most recent *Comprehensive Plan*, which was adopted in January 2007, includes a number of transportation improvements in its vision for the "future," which was designated as 2016. Transportation improvements identified in this vision include:

- Completion of the Longmeadow Parkway and Bolz Road Bridge, which will be designed to accommodate pedestrian and bicycle traffic, as well as vehicles. The Village adopted the *Longmeadow Parkway Corridor Study* in June 2009 as an amendment to the 2007 *Comprehensive Plan*. Kane County anticipates finalizing Phase I Engineering with design approval in early 2013 and, as of January 2013, about 60 percent of the required project right-of-way had been acquired.
- Widening of Huntley Road and Maple Avenue. Currently, the Village is working with IDOT to make significant upgrades along Maple Avenue from Washington Street to L.W. Besinger Drive. Improvements will include roadway reconstruction, curb and gutter installation/replacement, storm sewer, water main, and sanitary sewer repair, street lighting, and an asphalt bike path.
- Ongoing improvements to the Village's street and sidewalk network.

The Village adopted the *Old Town Plan* in July 2012. The creation of this plan was undertaken in response to the concern, identified through the comprehensive planning process, that Old Town has lost

its identity and character. It was subsequently identified as one of five key subareas within the Village, and a series of land use, infrastructure and transportation investments were developed to help retain and increase the unique attributes of this neighborhood. During the Existing Conditions phase of the project, a number of relevant findings were identified:

- High traffic volumes on Main Street and the street configuration result in congestion during peak hours.
- Old Town has a highly connected street grid that lends itself to walkability.
- Lack of transit servicing Old Town reduces the accessibility of the area.
- Household travel patterns of households in Old Town are similar to that of the rest of the Village and Kane County; households drive more than the regional average and spend one-fifth of their income on transportation costs.

The final plan recommended a series of investments to improve the transportation and parking facilities within Old Town, and supports the addition of transit in or near Old Town.

The Kane County *2040 Long Range Transit Plan*, adopted on June 14, 2011, recommends the extension of fixed route service to the Old Town area in Carpentersville. The strategy was defined as "medium term," or targeted for implementation within six to 15 years, and the financial and operational responsibility for the strategy was assigned to Pace.

2.0 Identification of Transit Options

2.1 Community Characteristics

The Existing Conditions report characterized Carpentersville as an established, vibrant community with shifting demographic trends and a development pattern that challenges the existing transportation network. Although household income is declining, a high percentage of Carpentersville residents own automobiles, and relatively few residents take transit to work.

The existing fixed route bus service is limited to the east side of the Village and is oriented in the north-south direction. The east side of the Village has the highest residential density and so provision of transit service in this area makes sense. However, the west side of the Village continues to grow with new residential, industrial and commercial developments. Connecting both sides of the Village with east-west transit service is desired.

The Existing Conditions report also noted that a comparatively high percentage of Carpentersville residents work at an employer within the Village, and that a relatively high percentage of residents choose to carpool to work. Stakeholders, as well as visual surveys of the community, indicate a relatively high degree of bicycle use in the Village, and there are several plans in the works to provide new bicycle or multi-use trails in Carpentersville.

2.2 Demand Response Options

Demand response transit systems are characterized by flexible routing and scheduling of relatively small vehicles to provide door-to-door, curb-to-curb, or point-to-point transportation at the user's demand. Demand response systems are generally offered in areas with relatively low population densities where fixed route service is not available.

Demand response services can take many forms from reservation-based dial-a-ride programs to employer vanpools. Demand response service can be used to fill gaps in the fixed-route system, or to target particular employers or customers based on geographic area, as well as time-of-day or day-of-

week trip needs. This section of the report outlines demand response options that may be suitable for application in Carpentersville.

2.2.1 Pace Call-n-Ride Program

Pace operates six Call-n-Ride services in the following areas; West Joliet, Round Lake Area, Wheaton-Winfield, St. Charles-Geneva, Vernon Hills-Mundelein, and Arlington Heights-Rolling Meadows. Boundaries are established for each Call-n-Ride zone to encompass primary traffic generators in the community. Call-n-Ride is a shared ride service and the vehicles are cutaway buses as shown in Figure 1.

Figure 1: Call-n-Ride Vehicle

The driver determines the most expeditious route between destinations and may pick-up new customers before dropping off passengers already in the vehicle. The origin and destination of each trip must be within the boundaries of the Call-n-Ride zone. Experience has shown that the most successful and efficient Call-n-Ride zones are less than ten square miles in size.

Service hours for each Call-n-Ride are determined by community need. The current services operate at least 12 hours every weekday and one, the St. Charles-Geneva Call-n-Ride, also operates on Saturday. To use Call-n-Ride, customers call at least one hour prior to their desired departure time to reserve a trip. Reservations are accepted on a first come, first served basis up to 24 hours in advance. Trips that occur on the same day and at the same time on a recurring basis may be scheduled as a subscription trip if the desired time slot is available. Customers may also board at any of the scheduled service stops. The fare is $1.75 per one-way ride, which is the same as the current Pace fixed-route service. Exact fare is required as the driver does not make change. Cash and Ventra cards are accepted. Transfers between the Call-n-Ride and Pace fixed-route services are available; however after December 15, 2013 transfers will only be available to customers paying with a Ventra card.

Pace has received many requests for Call-n-Ride service in various communities and is responding to those requests as resources become available. Given the current backlog of Call-n-Ride requests, it is unlikely that Pace would be in a position to implement Call-n-Ride service in Carpentersville in the near future. However, Carpentersville could initiate their own program by taking advantage of the Community Vehicles Program described below.

2.2.2 Community Vehicle Program

Pace offers the Community Vehicle Program to municipalities, local governments, or to government funded programs or agencies located in the Pace six-county region. Under this program Pace provides vehicles to municipalities so that they may implement their own community-based transportation programs. To apply for the program, municipalities develop a description of the type of service that they would like to provide, including the intended market, the projected trip purposes, and the proposed hours of service. Pace staff are available to assist municipalities apply for the program.[1] Currently there

[1] Pace Community Vehicle Program website: http://pacebus.com/sub/vanpool/community_vanpool_program.asp

are 90 Community Vehicle Programs in operation. Each program is different because the individual municipalities determine their own needs and design their own transportation program.

Pace divides the program into two options based on the type of vehicle that the municipality requires. The **Locally-Based Program** offers a Champion bus, while the **Municipal Vehicle Program** provides a conversion van. Maintenance costs for the Champion bus are borne by the municipality, while Pace covers the conversion van's maintenance costs. Municipalities may choose the Champion bus due to its larger capacity and the relative of ease of passengers to get into and out of the vehicle. Figures 2 and 3 illustrate the two types of vehicles.

Figure 2: Locally-Based Program Vehicle

Figure 3: Municipal Vehicle Program Vehicle

Both programs have the same requirements for insurance, provision of drivers, drug and alcohol testing, monthly fees, and other program obligations. These requirements are listed at the end of this section. Table 1 illustrates the differences between the Locally-Based Program and the Municipal Vehicle Program.

Table 1: Differences between Community Vehicle Programs

Program Elements	Locally-Based Program	Municipal Vehicle Program
Type of Vehicle	Champion Bus	Conversion Van
Responsibility for Maintenance Cost	Municipality	Pace

Carpentersville could take advantage of either the Locally-Based Program or the Municipal Vehicle Program to provide transit service to Village residents. The proposed service could connect residents to village destinations, fill gaps in the current transit system, and reduce congestion in Old Town and other neighborhoods. Initially it is recommended that Carpentersville begin with the Municipal Vehicle Program with a conversion van. In the event additional capacity is required, application can be made for a second van or the Champion bus.

The intended market for a municipal transit service is Carpentersville residents and employees making shopping, personal business, work, or school trips within Carpentersville. Certain destinations outside the borders of Carpentersville could be included as stops for the van service such as Walmart and Spring Hill Mall. The municipal van service would provide transit connections to neighborhoods within Carpentersville that are not well served by transit, and connect with Pace bus routes at the Meadowdale Shopping Center providing access to attractions outside of Carpentersville.

A fare could be charged for the service to offset any operating costs and to prevent the service from becoming over-run with existing Ride-in-Kane and ADA Paratransit trips. The current ADA Paratransit

fare is $3 per trip. To remove the burden of fare collection from the driver, Carpentersville could consider selling prepaid tickets at select locations and through the mail.

The municipal transit service could be structured in one of the following three examples:

1. The van service could operate as a **demand response service** with riders calling in advance to arrange for their trips. If desired, a return trip would be scheduled at the same time as the originating trip and riders would have the option of scheduling subscription trips for those journeys made on a regular basis such as work trips. This scenario provides the highest level of flexibility but does incur the additional operating costs associated with a reservation system.
2. The second option is to operate the van as a **circulator making scheduled stops at designated locations** throughout Carpentersville, but not operating on a fixed path. By not operating on a fixed path, drivers would have the flexibility to take the most expeditious route given the time of day and would also allow riders boarding at a designated stop the option of alighting at a non-designated stop. Scheduled stops would be located at major destinations such as Meadowdale Shopping Center, Spring Hill Mall, major employers, Woodman's Food Market, and Walmart where connections can be made to Pace. To serve each residential development, stops would be designated at locations central to the residences, preferably along the main arterials. This scenario avoids the costs of reservationists but requires riders to catch the van at a limited number of locations.
3. The third option builds on option 2 but adds the opportunity for **reservations** by giving the driver a cell phone. At least one hour advance notice would be required for a reservation. Subscription trips could also be accommodated.

Initially the service is envisioned as operating with one van between the hours of 6:30 a.m. and 6:30 p.m. with part-time drivers. It is estimated that this service will cost approximately $60,000 annually which includes the cost of part-time drivers, a part-time clerk, gas, and van lease costs.

A comparison of the three examples of municipal transit service described above is provided in Table 1. Note that all three examples assume participation in the Municipal Vehicle Program, which utilizes a conversion van.

Table 2: Municipal Vehicles Program Examples Comparison

Service Elements	Demand Response (Example 1)	Circulator (Example 2)	Combination (Example 3)
Advance Reservation	Yes	No	Yes
Subscription Reservations	Yes	No	Yes
Scheduled Stops	Yes	Yes	Yes
Hours of Service	Weekday 6:30a-6:30p	Weekday 6:30a-6:30p	Weekday 6:30a-6:30p
Fares Charged	Optional	Optional	Optional

The Community Vehicles Program requires the municipality to agree to accept certain responsibilities, which are not inconsequential. The following list summarizes Carpentersville's responsibilities to participate in either the Locally-Based Service or the Municipal Vehicle Program:

- Provision of drivers (subject to Pace requirements) and a transportation coordinator
- A monthly fee to Pace of $100 per vehicle
- A security deposit of $1,000 per vehicle (refundable upon vehicle return in reasonable condition; security deposit may be waived at Pace's discretion)
- Adherence to maintenance guidelines provided in the Pace Municipal Vehicle Program Operations Manual
- All fuel costs
- Vehicle washes and detailing
- Secure off-street parking of Pace vehicles
- Insurance coverage for Commercial General Liability, Auto Liability, Auto Physical Damage, and Worker's Compensation at levels specified by Pace
- Preparation of monthly reports
- Compliance with all drug and alcohol policy requirements

These requirements entail a financial commitment that many municipalities are reluctant to make, especially when the future success of the program is unknown. To support the program, Carpentersville could consider a partnership arrangement with local businesses. Based on preliminary conversations with select companies, businesses may be interested in financially supporting such a program if it fits the needs of their employees and work shift schedules.

2.3 Pace Vanpool Program

Pace started their vanpool program in 1991 and it is the second largest publicly funded vanpool program in the United States. Pace offers several types of vanpools including:

- Traditional Vanpool,
- Employer Shuttles, and
- Metra Feeders.

The Existing Conditions report reviewed commuting patterns of Carpentersville residents and non-residents working in Carpentersville. Employees working in Carpentersville come from many communities. Approximately 14 percent of workers in Carpentersville also live in Carpentersville, while 12.3 percent of workers live in Elgin and 8.6 percent live in Chicago. The 14 percent of Carpentersville workers who also live in the village represent 34 percent of Carpentersville's workforce. A relatively high percentage of residents, 12.2 percent, carpool to work. These statistics indicate that vanpools or shuttles could be very successful in Carpentersville.

2.3.1 Traditional Vanpool Program

A traditional vanpool is a group of four of more individuals who commute to work using a Pace vehicle. The monthly vanpool fare is paid directly to Pace by each rider and is based on round trip miles and number of vanpool participants. The vanpool fare includes the costs of fuel, maintenance, tolls, insurance, emergency roadside assistance and car washes. The primary driver does not pay a fare if there are five or more vanpool participants. Each vanpool can designate up to four backup drivers who

each receive a fare discount of $10 per month. Drivers must have a good driving record, pass a physical and drug test, and attend a half day training class at Pace.

2.3.2 Employer Shuttle Program

The Employer Shuttle Program provides vans to employers within Pace's service area for work-related passenger trips. Employers pay $750 per month for each van and, with prior approval from Pace, may charge riders a fee for the service. All driver requirements related to the traditional vanpool apply to drivers operating the employer shuttle.

2.3.3 Metra Feeder Program

The Metra Feeder Program is designed for vanpool participants who travel to work on the Metra rail service but need a ride from the Metra station to their place of employment. In order to qualify for this program, at least half of the vanpool participants must purchase a Metra monthly pass or 10-ride ticket. Each vanpool participant pays $58 per month. Any parking fees at the Metra station are not included in the monthly fee and are the responsibility of the vanpool participants. A maximum amount of 600 miles per month are allowed to accumulate on the van. All driver requirements related to the traditional vanpool apply to drivers operating the employer shuttle.

2.3.4 Potential Vanpool Programs in Carpentersville

The Existing Conditions report showed that 14 percent of workers in Carpentersville also live in Carpentersville. This locally available workforce is a resource for employers in Carpentersville and participation in any of the three types of Pace vanpool programs described above could assist Carpentersville businesses recruit new employees. Examples of how these services might operate are illustrated below.

Example #1: The Market Analysis report showed that the greatest commuting activity occurs between the residential area east of Route 25 and the businesses located in the East River area which includes Old Town, the industrial area along E. Cottage Avenue, and businesses west of Tamarac Drive. Approximately 110 daily commutes are made between these two areas. By utilizing the Employer Shuttle Program, a large employer in the downtown area could provide transportation for its employees living east of Route 25. Stops could also be made to pick up employees that may live along the route between this area and the place of employment. The participating business could survey its existing workforce to determine if such a program would be beneficial. Then the company would work with Pace staff to set up a suitable route based on the survey results. The Pace van would be driven by a company employee who would pick up other employees on their way to work and drop them off on the way home. During the day the van could be used for lunch trips or to take individual employees home in the event of sickness or an emergency.

Example #2: The Commerce Parkway industrial area is located west of the Fox River and east of Route 31. Access to the site is provided by Route 31, a north-south street, but east-west access is limited by the fact that few bridges cross the river. Employers in this industrial park could band together to encourage their employees to join vanpools to commute to work. Traditional vanpools are usually based with one employer, but companies located in close proximity to each other can participate in multi-company vanpools. According to the Market Analysis report, Carpentersville residents who work in the area west of Fox River, which includes Commerce Parkway, live in the far west, north and east areas of the village. Since the origins of residents working in Commerce Parkway are so diverse, it is unlikely that a vanpool program at just one of the businesses would be

successful. However, if several of the businesses with common schedules combined their employees into one vanpool outreach effort, then a number of vanpools could be formed. Pace routinely works with businesses to promote vanpools and assist in vanpool matching.

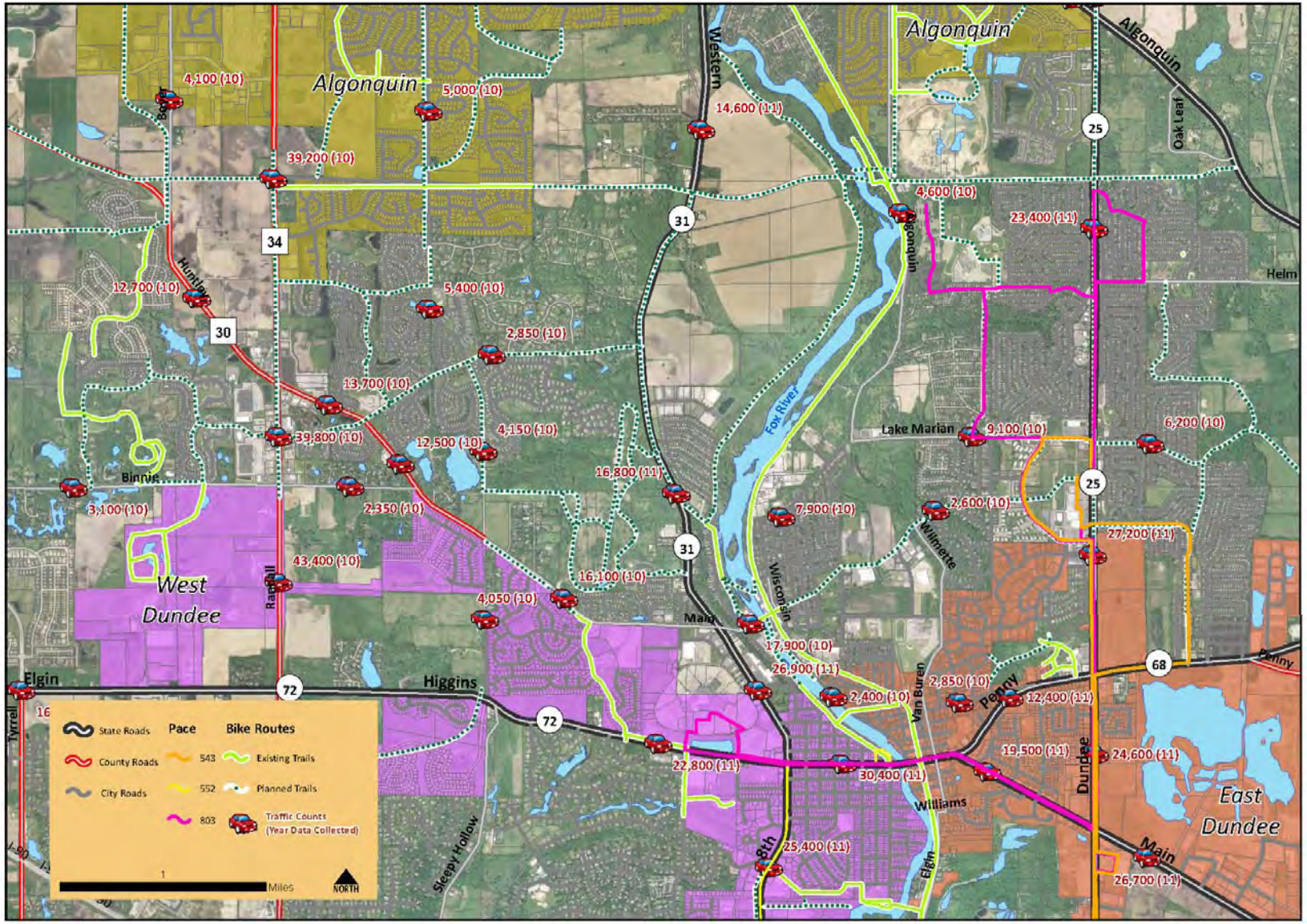
Employers typically benefit from employee vanpool programs through the outcomes shown below. It is in an employer's best interest to consider providing or supporting vanpool programs for these reasons.

- Improved on time performance of employees
- Lower absenteeism rates
- Reduction in the number of parking spaces needed
- Expansion of the labor pool
- Provision of tax deductions for every employee dollar spent in pre-tax payroll deductions for transit

2.4 Modifications to Existing Fixed Route Service

As presented in the Existing Conditions Report, the Village of Carpentersville is directly served by two Pace bus routes – 543 and 803. As shown in Figure 4, both Pace routes exclusively serve the eastern side of the Village and there is no direct transit service connecting to the western side of the Village. Routes 543 and 803 are flag stop routes which means that riders can board or alight at any location along the route where the driver deems it safe to do so. Because these are flag stop routes that don't have designated stop locations, there is a comparatively low level of passenger amenities (including shelters, benches, trash receptacles, etc.) along the routes.

Figure 4: Existing Transportation Facilities in Carpentersville



Route 543 provides connections to Metra service at the Elgin Station on the Milwaukee District West line and the Pace Elgin Transportation Center, which offers connections to 10 Pace bus routes. Route 543 primarily travels along Illinois Route 25 between the Elgin Transportation Center and Lake Marian Road, with two deviations into residential neighborhoods (one in Carpentersville and one in Elgin). This route runs on weekdays between approximately 6:00 AM and 7:30 PM and on Saturdays between approximately 7:45 AM and 6:30 PM. Weekday service operates at 60 minute headways (with the exception of the second northbound run of the day, which departs the Elgin Transportation Center 30 minutes after the first run). Saturday service also operates at 60 minute headways. Service is scheduled to meet route 803 at the Walmart to enable connections to the Spring Hill Mall.

From the late 1990's to the early 2000's Route 543 was routed to downtown Carpentersville via Maple Avenue from L. W. Besinger Drive. By 2006 the route was restructured to its current configuration due to low ridership on the Maple Avenue segment.

Route 803 is slightly more circuitous than Route 543, traveling along Illinois Routes 25, 68 and 72 between Spring Hill Mall and the Foxview neighborhood, with multiple deviations into residential neighborhoods in Carpentersville. Route 803 operates on weekdays between approximately 5:30 AM and 9:00 PM and on Saturdays between approximately 7:00 AM and 6:00 PM. Weekday service operates at 30 to 60 minute headways (30 minutes between 12:39 PM and 5:39 PM). Saturday service also operates at 30 and 60 minute headways (only the first two runs of the day are at 60 minute headways).

The *Old Town Plan* adopted in July 2012 notes that there are currently no transit options to access Old Town. A plan recommendation was to support the addition of transit in or near Old Town. The recommendation specifically mentions employer-based transit modes such as vanpools as an effective transit option. Vanpools serving Old Town may be a better transit improvement choice than rerouting a 30 foot bus into this congested area. Employer-based vanpools or municipally-operated van service would alleviate some of the congestion caused by single-occupant autos, and vans would more aesthetically suit the neighborhood – much of which is residential.

Routes 543 and 803 were examined to determine if either route could be extended to serve Old Town. A possible restructure of each route is described below. Neither route change is recommended due to the added operating costs required, the loss of service to residents north and east of Meadowdale Shopping Center (for route 543), and the operation on narrow residential streets with a 30-foot bus.

2.4.1 Route 543 Restructure

In order to serve the Old Town area and attempt to limit increased operating expenses, Route 543 could be restructured but some neighborhoods currently served by the route would no longer receive service. In the following reroute example the neighborhoods surrounding the Golfview Elementary School and the Lake Marian Road shopping district would no longer be served. Under this reroute example, Route 543 would operate northbound via Illinois 25 to the Meadowdale Shopping Center; exiting the shopping center onto L.W. Besinger Drive to Maple; continuing west on Maple to Washington Street; and Washington south to Main Street. The route could terminate by circling Triangle Park. The buses would take their recovery time on the street adjacent to the park, standing for ten minutes or more until the bus was scheduled to return southbound. As an alternative, the bus could continue to Spring Hill Mall. Even when abandoning portions of the existing route, a reroute to Old Town increases route miles by approximately 1.6 miles per trip. Continuing on to Spring Hill Mall would increase route miles by approximately three miles per trip.

2.4.2 Route 803 Restructure

Route 803 could be extended to Old Town with minimal impact on existing riders but with a similar impact on operating costs as the Route 543 concept above. Under this reroute the bus would terminate in Old Town rather than at the mall. The 803 bus would stop at the mall before continuing on to Old Town to avoid inconveniencing existing riders. However, this may create passenger confusion if both northbound and southbound buses stop at the current mall bus stop. Passengers could get on a bus expecting it to head to Walmart and end up in Old Town instead. To avoid this confusion, two separate bus stops could be designated at the mall, or the driver could be instructed to confirm with each boarding passenger their destination. From the current mall stop, Route 803 would travel the mall drives and exit the mall property at Spruce Drive, turning left on Western Avenue and making a right turn on Main Street. Similar to the operation in Old Town for Route 543 described above, Route 803 could terminate in Old Town by circling Triangle Park. Extending Route 803 to Old Town adds approximately 1.5 miles round trip.

As previously stated, neither of these reroutes is recommended. Although cost is a major factor, the physical implications of operating a large urban bus on narrow streets is also a factor. Demand response service with a smaller vehicle is much more conducive to the population density and current infrastructure. In addition, the Market Analysis report found that current transit mode share and ridership is insufficient to support expansion of fixed-route service.

Operating cost is a major factor in service provision and Pace does not have the resources to add service miles to any of its fixed-route bus services. Additionally, extending fixed route service into Old Town would expand the service area for ADA complementary paratransit service, making residents living north of Main Street and in portions of the Lincolnwood Manor development west of the river eligible for paratransit service. This expansion of the ADA paratransit service area would significantly increase Pace operating costs and could have a greater cost impact than that associated with extending the fixed route.

Figure 5: Possible Extension of Route 543 to Old Town

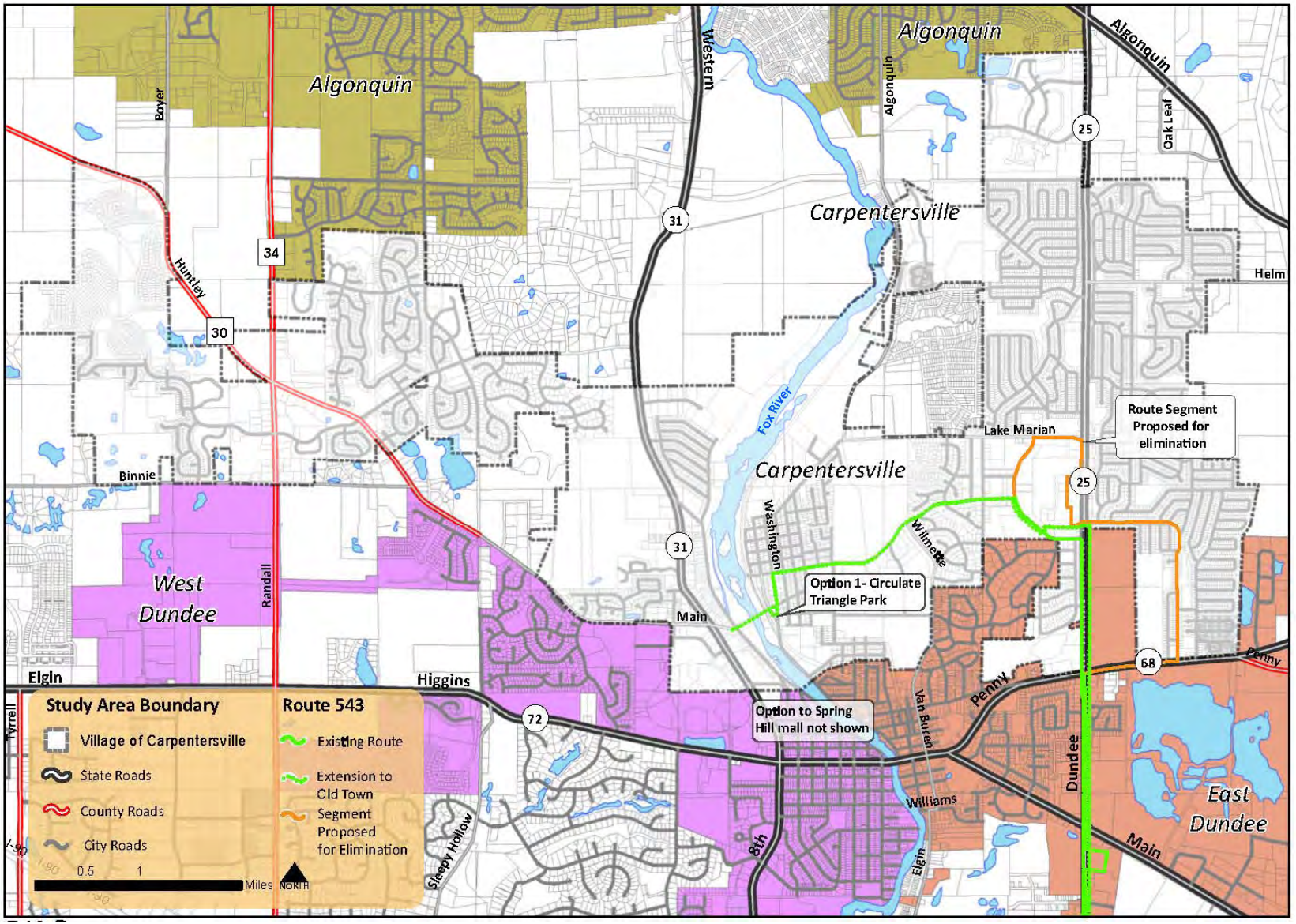
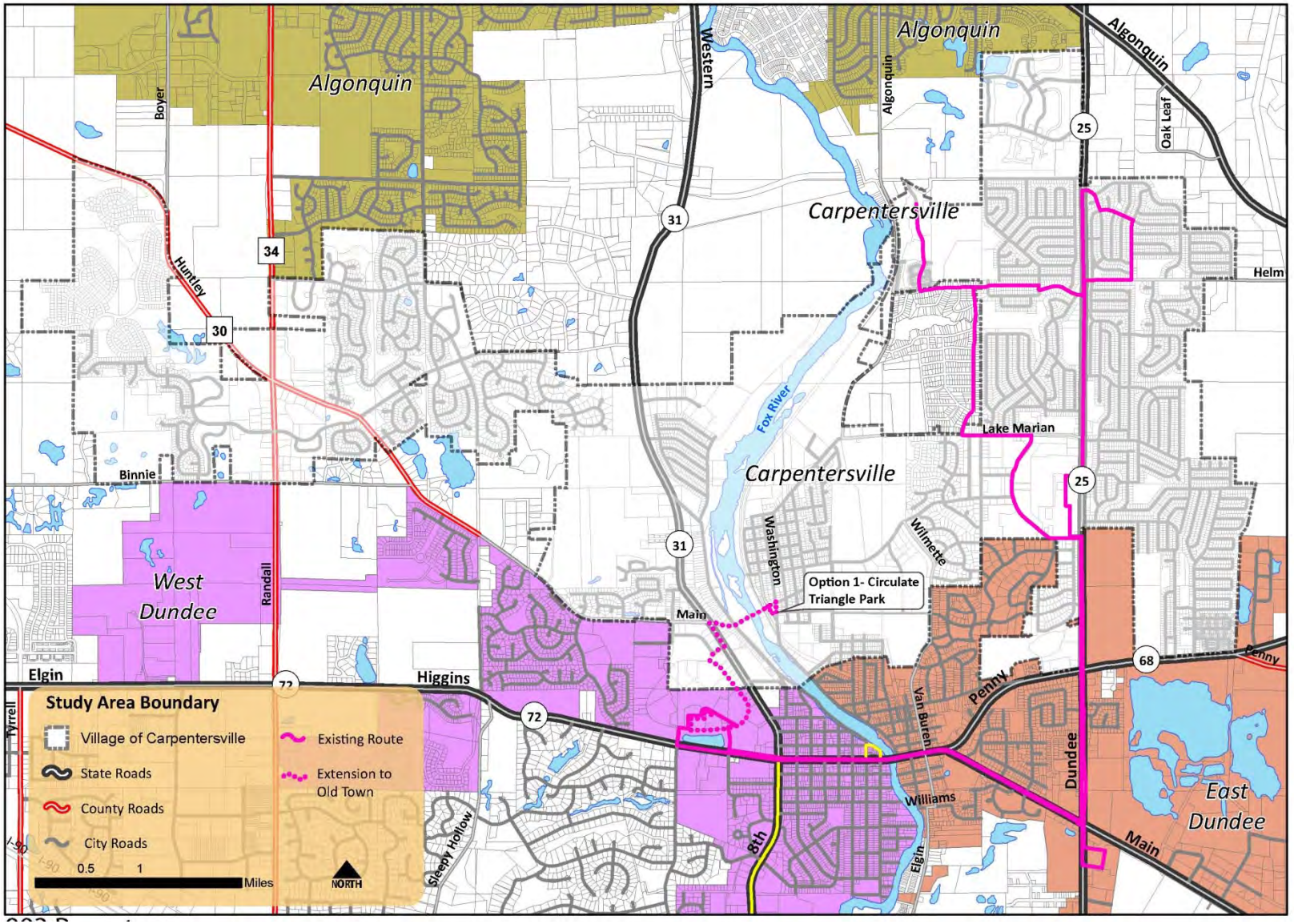


Figure 6: Possible Extension of Route 803 to Old Town



2.5 Improving Access to transit (Transit-Friendly Supportive Infrastructure)

Every transit rider begins and ends their trip as a pedestrian or bicyclist. To enhance access to transit, the Village should consider projects to support both pedestrians and bicyclists, and as a result, will support the transit customer. These projects include pedestrian friendly treatments which allow a pedestrian or bicyclist to have a more comfortable experience getting to the transit stop and waiting for the bus.

The pedestrian system in the village includes sidewalks, street crossings, pedestrian signals, and multi-use trails. Improving the connectivity of these elements with transit services and the varying land uses within the Village is critical to improving overall mobility and ease of travel, while decreasing auto dependency.

On-street bike lanes or off-street bike paths would allow a bicyclist safer access to get to the transit stop. As land uses become more developed transit-oriented development principals (TOD) should be used so that walkability is enhanced and the land use and transit is integrated. These principals allow for diversity of land uses, traditionally designed, and with greater densities. Buildings should be built up to the sidewalk with parking lots located behind the building to make the walk more appealing and safer.

2.5.1 Existing Conditions

Pedestrian facilities vary throughout the Village. The curvilinear nature of many of the residential neighborhoods, particularly on the western side of the Village, discourages easy pedestrian access to both residential and non-residential destinations. There are also gaps in sidewalks along many of the major collector roadways, including L.W. Besinger Drive, Maple Avenue, Lake Marian Road, and Miller Road. Bicycle facilities are concentrated primarily along the Fox River Trail. There are limited on-street bicycle facilities, forcing bicyclists to ride in mixed traffic with motorized vehicles.

2.5.2 Planned/Proposed Improvements

Improvements along Maple Avenue are proposed to include sidewalk facilities, improving east-west pedestrian linkages on the eastern side of the Village and an asphalt bike path to improve bike connectivity to the Fox River Trail. The *Longmeadow Parkway Corridor Study* recommends the inclusion of a pedestrian bridge from just north of East Cottage Avenue onto Brunner Family Forest Preserve Property, connecting the existing Fox River Trail with a recommended trail system within the Preserve, as well as multi-use trails for potential inclusion in the upgrades and investments made to the Brunner Family Forest Preserve as part of the construction.

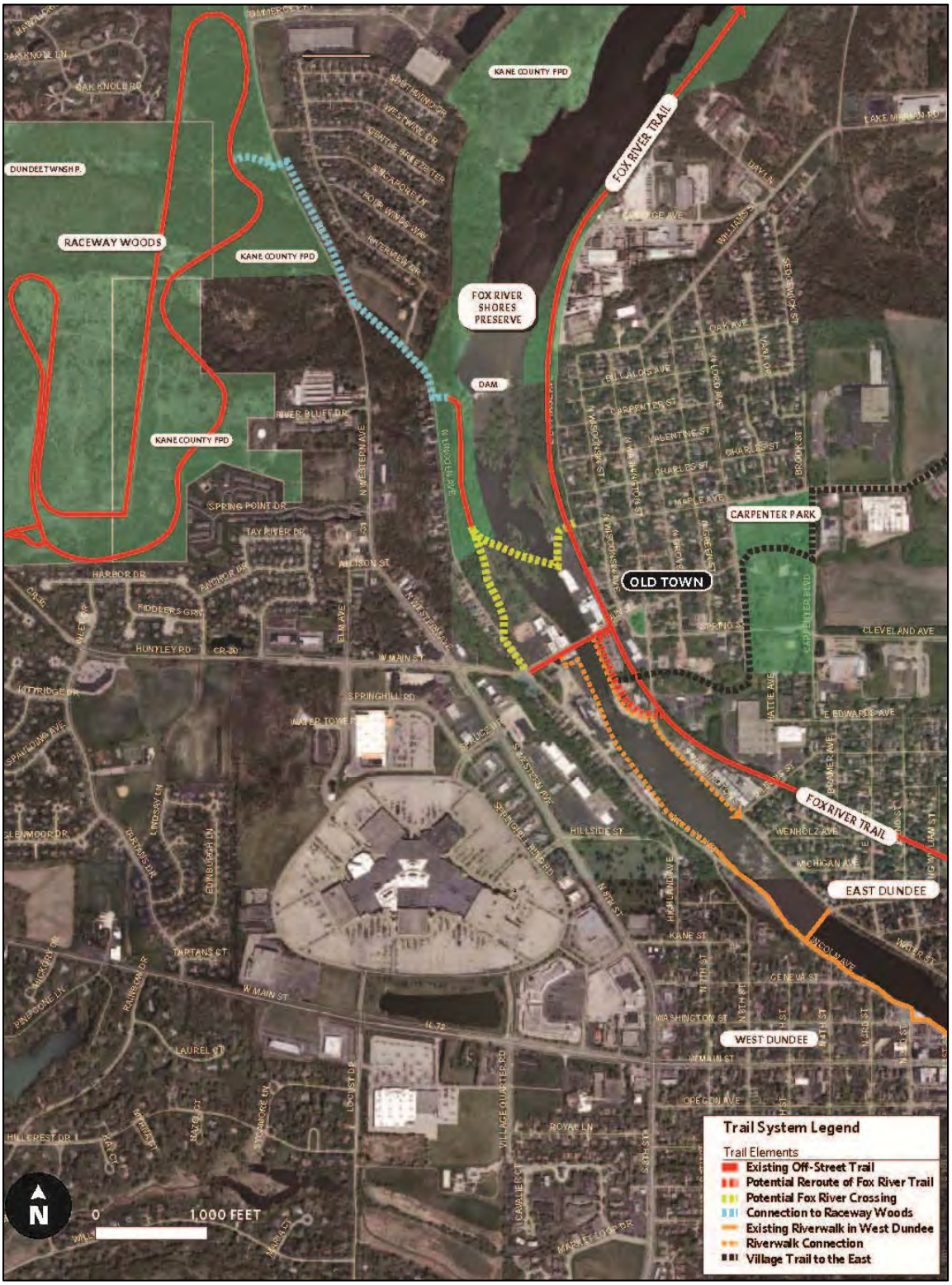
The Village is also allowing a series of upgrades to Keith Andres Park that includes the creation of a multi-use, natural surface recreational trail, recreational access trail, mountain bike trail system and bike skills area. The trail is being built for public recreational use, for bicycling, running, hiking, walking, and other pedestrian use, and may eventually provide a connection to the Fox River Trail.

The *Old Town Plan*, completed by CMAP in 2012, proposes improvements for Carpentersville's Old Town area that could be accomplished within the next 10 to 15 years. The *Old Town Plan*'s recommendations for parks and open space included the creation of new parks and improved access to the Fox River. New greenway and trail facilities are recommended in several areas, including providing trail connections to other nearby open space assets. Transportation recommendations included in the plan addressed traffic circulation issues and improving alternative transportation options.

Specific improvements for bicycle facilities, shown in Figure 7, include:

- A new greenway connecting Carpenter Park to the new Riverfront Park to provide a direct route for residents on the east side of Carpentersville to access the downtown through a recreational path. This new trail running the length of the creek will connect pedestrians and bicyclists in Carpenter Park to the riverfront.
- Create a new trail that extends from the Fox River Trail to the west side of the Village, connecting Raceway Woods to Old Town. Creating an additional trail route will open up access for trail users to hundreds of acres of forest preserves, including access to Raceway Woods and the Brunner Family Forest Preserves. Providing a link from the Fox River Trail to the west side of the river will allow the trail to connect with an existing bike path north on Lincoln Avenue. The trail should continue north and connect with Fox River Shores and even further north to the existing Raceway Woods Forest Preserve. Two routes for the extension are possible. One option would be for the Trail to continue across the old train bridge just north of Old Town. A second option is to extend the Fox River Trail from the Main Street bridge to the north using an easement on privately-owned open space, owned by Otto Engineering, Inc. This may be a more feasible option in the short-term, while the more ambitious but more complex reuse of the train bridge is being investigated.
- Establish a riverwalk on both sides of the river south of Main Street for pedestrians and bicyclists. The Village could create a riverwalk extending south from the Main Street Bridge. The riverwalk on the east side would primarily travel on land which is already publicly owned, and connects Old Town to existing open space assets. On the east side, the riverwalk would run through McNamee Park and the new Riverfront Park (currently occupied by M&M Exposed Aggregate). The recommended riverwalk on the west side could start with the already existing pedestrian path in John Jack Hill Park, connect to the existing riverwalk in West Dundee and then run north along the Otto Engineering industrial and commercial buildings before jogging west around the Otto.

Figure 7: Trail Recommendations in the *Old Town Plan* (2012)



2.5.3 *Pedestrian Network*

There are currently large gaps in the pedestrian network along many roadways within the Village. Some roadways such as IL 25, Bolz Road, and Williams have sidewalks on only one side of the street. Sidewalks do not provide continuity to the building entrances leaving pedestrians to travel along unmarked or unprotected parking areas and drive aisles. The presence of continuous sidewalks leading passengers from their origins (i.e. their residence) to their destination (i.e. place of employment, commercial area, recreational area, etc.) is imperative. Safe crossings to get to the transit stop including marked crosswalks and pedestrian signals should also be installed. Other infrastructure improvements could include crosswalk bump-outs which shorten the length of travel for the pedestrian crossing the street.

The Regional Transportation Authority (RTA) recently released *Making Way: A Guide for Communities to Promote Pedestrian Mobility and Increase Access to Existing Transit* to encourage municipalities to implement small-scale capital access improvements such as the installation of sidewalks and crosswalks near existing transit facilities. Such improvements promote pedestrian mobility and provide added access to transit. Three common pedestrian improvements presented include:

2.5.3.1 Pedestrian Walkways / Sidewalks

Clear, uninterrupted sidewalks can provide direct access to transit. Sidewalks should be separated from the roadway and provide a buffer between the pedestrian and traffic and other pedestrian amenities such as benches, trees and landscaping. Sidewalks typically have widths of five feet or more and should have accessible features such as curb cuts and markings.

2.5.3.2 Transit Friendly Amenities

Access to bus service can be increased by clearly marking and efficiently locating bus stops and installing accessible bus stop pads and shelters.

2.5.3.3 Designated Street Crosswalks with Street Crossing Devices

Crosswalks and crosswalk devices aid pedestrians to safely cross the street. They establish the right of way for pedestrians to enter into the roadway and alert motorists to the presence of pedestrians. Crosswalks can be located at signalized or unsignalized intersections. A variety of crosswalks and devices can be utilized, and their appropriateness is best determined by factors such as traffic volumes, roadway size, and budget constraints. Common crosswalk types include high visibility markings, which include white markings demarked on the pavement, using zebra or ladder designs. These markings can be used at intersections or mid-block. As budget allows, high visibility markings can be enhanced by adding permanent or portable traffic signs that state "IT IS STATE LAW TO STOP FOR PEDESTRIANS WITHIN

CROSSWALK", electronic flashing yellow beacons, and at intersections, traffic signals and pedestrian countdown signals. Raised crosswalks can also be used for pedestrian crossings. Raised crosswalks are flat-topped speed humps with added crosswalk markings and signage. By raising the level of the crossing, vehicles slow down through the crosswalk while pedestrians are more visible to approaching motorists.

2.5.4 Bicycle Facilities

2.5.4.1 Roadway Suitability for Bicycles

Determining the suitability of a roadway as a bicycle facility and determine the "bicycle friendliness" of a roadway for the casual bike rider is an important decision-making tool. The following variables are typically used for determining the bicycle friendliness of a roadway:

- Number of through lanes per direction of travel
- Width of outside travel lane
- Width of additional spaces such as paved shoulder or bike lane
- Average Daily Traffic (ADT) volumes
- Posted speed limit
- Percentage of trucks
- Federal Highway Administration's (FHWA) pavement condition rating
- Parking conditions

Typical industry analysis develops "rating" of a roadway's bicycle friendliness using these variables. Roadways with a better Level of Service (LOS) rating have a higher level of comfort and compatibility for bicyclists while a roadway with a lower rating would indicate that this roadway is not suitable for an on-street bicycle facility.

2.5.4.2 Design of Bicycle Facilities

The Guide for the Development of Bicycle Facilities, prepared by the American Association of State Highway and Transportation Officials (AASHTO), 1999, is the predominant reference guide for the design of bicycle and pedestrian facilities. According to the AASHTO guide, the design of new facilities should be consistent with the community's overall goals for bicycle travel and should consider the type of riders, physical characteristics of the roadway, and the volume and speed of traffic.

The design of bicycle facilities must take into consideration the physical space available and the type of bicycle rider. Typically, bicycle facilities are designed for a basic bicycle user. A basic bicycle user is one who is less confident riding anywhere and prefers to use roadways with a more comfortable amount of operating space, perhaps space designated for bicycles or shared use paths away from motor vehicle traffic. This could also include children who are still developing their bike handling skills. Bicycle facilities can include any type of road, marked routes, shared lanes or off-road paths. There are different classifications of facilities, including:

On-street bicycle facilities	Off-street bicycle facilities
Shared roadways (wide curb lane, paved shoulders)	Shared use paths
Signed shared roadways	Bike trails
Bike lanes	Other designations

2.5.4.3 Shared Roadways

Roadway width is the most critical variable affecting the ability of a roadway to accommodate bicycles. Improvements such as paved shoulders (on more rural roadways) or wide curb lanes can be used to accommodate bicycles. Paved shoulders are recommended to be five feet, but at a minimum should be at least four feet wide (excluding gutter pan or any area with rumble strips). Any shoulder less than four feet is better than none at all, but should not be signed or marked as a bicycle facility. Wide curb lanes can be used where shoulders are not provided. An outside, or curb lane, is recommended to be 14 to 15 feet between the lane stripe to the gutter pan.

2.5.4.4 Bike Lanes

Bike lanes are a portion of the roadway that is dedicated for the preferential use of bicycles, separated by striping, pavement markings, or signing. On-street bike lanes are typically provided in the direction of travel. The preferred width of a bike lane is five feet, although four feet can be used along roadways with no curb or gutter. A greater width is preferred when there are higher truck volumes or travel speeds exceed 50 miles per hour.

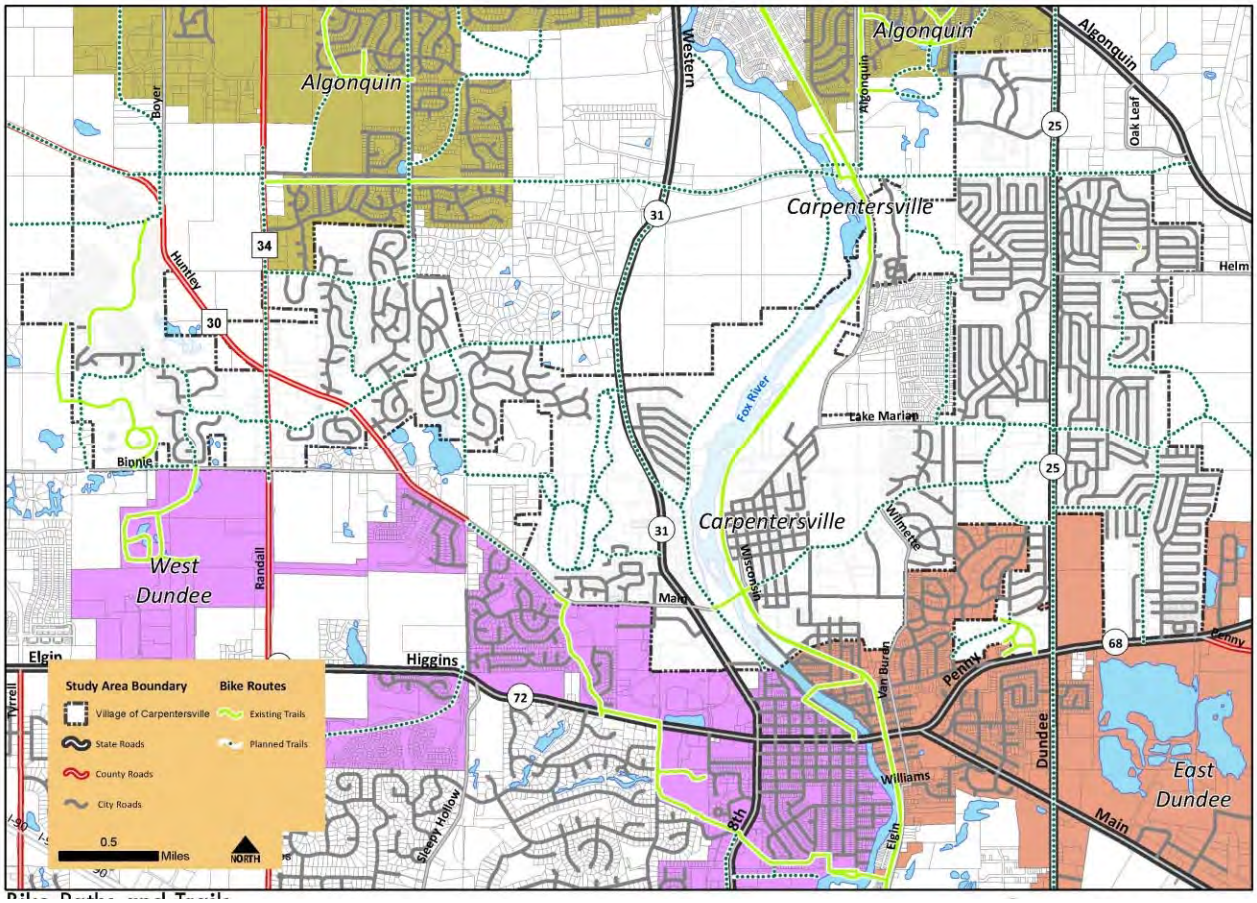
2.5.4.5 Shared Use Paths

Shared use paths are facilities physically separated from motorized vehicular traffic by an open space or barrier, either within a highway right-of-way or within an independent right-of-way. These paths are commonly designed for two-way travel by pedestrians, bicycles, skaters, and runners. The typical recommended width of a shared use path is 10 feet, although can range from eight to 12 feet. A one-direction path should be six feet wide. The AASHTO Guide notes that when two-way shared use paths are located immediately adjacent to a roadway, some operational problems are likely to occur. This can include at intersection locations where motorists entering or crossing the roadway may not notice path users coming from the direction opposite of vehicular traffic, or at driveways where motor vehicles may be stopped and block the path. Great care has to be taken in managing the operation of trail/roadway intersections to ensure safety, convenience and comfort are balanced. Trail users don't want to have to stop every few hundred yards at every driveway and intersection, especially where crossing traffic volumes are very small. Nor do designers want to set up dangerous conflicts between motor vehicle traffic and trail users by providing inadequate information and traffic control at intersections.

Appropriate signage in accordance with the *Manual on Uniform Traffic Control Devices* (MUTCD) should be placed at these locations. A separation between the path and the roadway of at least five feet is recommended. In the case that this width is not available, then a physical barrier should be used. A two-foot clearance along both sides of the path should be maintained.

Several recent studies have proposed bicycle facilities within the Village. Carpentersville's *Comprehensive Plan* recommends a future bicycle network. This network includes a north-south route along IL 25 as well as an additional north-south route between the Fox River Trail and IL 25 using Village collector streets. East-west routes include Maple Avenue on the east side of the Village and Miller Road on the west side. The *Longmeadow Parkway Corridor Study* included several pedestrian/bicycle projects including Longmeadow Parkway as a multi-modal corridor, a multi-use path as part of any future improvements to IL 31, and a multi-use trail along the west side of the Fox River to connect to Brunner Farm property. Additionally, the *Old Town Plan*, completed by CMAP, included a new bike trail and bridge along the Fox River with connections to Carpenter Park. These proposals, as shown in Figure 8, should all be part of the future bicycle network for Carpentersville, along with the designation of on-street bike routes.

Figure 8: Carpentersville Bike Paths and Trails



2.5.5 Bus Stop Location and Design

2.5.5.1 Transit Development Guidelines

Two resources are available for determining the location and the design of transit stops: Pace Development Guidelines and IDOT Bureau of Design and Environment Manual (BDE). Pace Development Guidelines (2013) presents design elements necessary for the development of safe and efficient provision of transit service. Specific guidelines are presented for bus turnouts, bus stop spacing and location, and passenger waiting areas. The IDOT Bureau of Design and Environment Manual include design guidelines on bus stop locations and bus turnouts.

2.5.5.2 Bus Stop Location and Design

Bus stop spacing is based on land use and population densities. Typically bus stops are located every 660 feet (standard city block). In areas of more medium employment and population densities, bus stops should be placed about every 1,320 feet (1/4 mile). Both Pace and IDOT prefer far-side stops where possible. Mid-block stops could be considered in locations where far-side stops are not practical. Also, mid-block stops can be considered in conjunction with major traffic generators.

Paved waiting areas should extend 25 feet back from the corner tangent point, being completely between the curb and sidewalk. Standard shelter size is 13.5 feet by 6.5 feet and should be set back five feet from the street. An on-street far-side bus stop needs about 90 feet in length (40 feet for vehicle and 50 feet for taper). An on-street mid-block stop would require 150 feet. The following overall considerations should be used in guiding the selection of potential bus stop locations in the Village:

- Per Pace Development Guidelines, a minimum bus stop spacing of 1,320 feet between stops.
- Provide stops in both directions, based up transit service operations.
- Provide far side stops as possible. This allows for easier bus re-entry into traffic due to gaps created by intersection traffic signals.
- Provide stops in locations with higher densities to generate higher passenger volumes.
- Provide stops in location that appear to have adequate space for the signage, concrete pads, and shelters.
- Provide stops at locations where potential exists to link transit service to pedestrian and bicycle facilities.
- Passenger waiting areas would include a physical shelter, bench, and sidewalk connections to adjacent land uses and other pedestrian facilities.
- Located near an existing or proposed signalized intersection to provide safe pedestrian linkages to the bus stop from either side of the roadway.
- Curb ramps and marked crosswalks must be provided at the intersection to expedite pedestrian movements. Pedestrian refuge areas at intersections along IL 25 and IL 31 may also be needed.

The community and Pace should work together on passenger amenities, including installing bus stop signs with a concrete path connecting the sidewalk to the bus stop. Benches and passenger shelters should be installed at high level boarding stops as appropriate.

2.5.6 Recommendations

For the Village of Carpentersville, specific recommendations for targeted employment locations and key roadways are aimed at increasing the ability to make multi-modal trips within the Village. Overall, the roadways should accommodate users of all modes of transportation, including autos, transit, bicycles and walking. Facilities for bicyclists and pedestrians must be a priority on par with any other infrastructure improvements. This will provide safe and efficient access to transit services. Additionally, all facilities should comply with the Americans with Disabilities Act (ADA) to create a fully accessible mobility network.

2.5.6.1 Pedestrian Improvements in Targeted Employment Locations

Three specific areas with high employment are candidates for employer-based shuttle service. To support shuttle service, pedestrian improvements will be required. Specific pedestrian related improvements for these three areas are presented below.

Otto Engineering / Downtown Carpentersville

Otto Engineering has facilities located on both the east and west side of the Fox River and on both the north and south side of Main Street. Main Street is the only river crossing in Carpentersville and of only a few crossings altogether. While there are bike and pedestrian crossings marked, this area is difficult due to the high traffic volumes, particularly during peak traffic times and when shifts change at Otto Engineering. Potential improvements highlighted in the *Old Town Plan* included:

- Reduced number of driveways on Main Street.
- Shared driveway designs.
- Revisit 2009 circulation study; this study analyzed the need for a traffic signal and turn lanes at Main and Washington Streets.
- Enhance intersections for pedestrian safety at key intersections (including Main Street, Wisconsin Street, Washington Street, and Spring Street). Suggested improvements include narrowing travel lanes, corner bulb-outs, and textured crosswalks.

- Encourage shared parking and ways to reduce the number of employees driving to work. While all of these activities should be pursued, there are some site-specific improvements targeted to workers who might access a shuttle service as listed below.
- Improve the intersection of Main Street and Lincoln Avenue. This intersection is difficult from all modes due to the high level of traffic on Main Street and geometrics of eastbound Main Street. Vehicles are traveling downhill and at a curve as they approach Lincoln Avenue. Improved streetscape elements such as signage along with geometric changes such as tightening the turning radii or adding corner bump-outs could help to slow down traffic and provide an indication that they are approaching a pedestrian zone.
- Improve mid-block crossing on west side of the Fox River to include curb extensions and an activated crosswalk device.
- Improve pedestrian/bicycle crossing of Fox River Trail on east side of the Fox River. This location currently has high visibility signage and a portable roadway sign. Additional improvements could include curb extensions and flashing lights. Additionally, driveway access to the south parking lot should be reduced to one access drive.
- "Front door" shuttle service is typically the most effective in attracting riders, although generally only provided if the company is financially sponsoring the shuttle. Should front door service be provided, the shuttle should access Otto's eastern campus building via Wisconsin Street. The shuttle would access the western campus building via the circulating through the south parking lot. Some employees would have to cross at the improved mid-block crossing.

Maple Avenue

Maple Avenue is a two-lane major connecter, traveling from L.W. Besinger to the downtown. Maple Avenue terminates at the Fox River Trail (west of Wisconsin) and the access drive to Otto Engineering. The Village received an Illinois Jobs Now grant to reconstruct Maple Avenue from Washington Street to

L.W. Besinger Drive. The work, currently underway, will include full depth pavement reconstruction, storm sewer, water main, sanitary sewer, structure replacement, street lighting, a pedestrian path and other work. This project will help to improve east-west pedestrian linkages on the eastern side of the Village and improve bicycle connectivity to the Fox River Trail.

While the roadway improvement project will include continuous sidewalks as well a bike path, site-specific improvements are needed that will be targeted to the workers who might access a shuttle service, as described below.

- New sidewalks directly accessing each individual company that will connect to the new sidewalks along Maple Avenue.
- A new sidewalk along Tamarac Drive connecting to the new Public Works Building. This facility has a large room for public meetings, so pedestrian access to the building is important.
- Streetscaping elements to indicate a special employment area, such as signage, lighting, and street furniture.
- As previously mentioned, "front door" shuttle service is typically the most effective in attracting riders, although generally only provided if the company is financially sponsoring the shuttle. Should front door service be provided, the shuttle should travel as close to the front door as possible. For larger companies such as Stanley Tools or Carlithe Printing, this could be possible by circulating through the company parking lot entrance and exit driveways. For the smaller companies along Tamarac Drive, the van/shuttle would stop on-street in front of the business.

Commerce Parkway / Spring Hill Center

The Spring Hill Center along Commerce Parkway is located west of the Fox River and east of IL 31 north of the downtown. Several large businesses are located in this center, including Dana Molded Products, Terminix, and Trim-Rite Food Corp. Site-specific improvements targeted to workers who might access a shuttle service as listed below.

- Improve intersection of IL 31 and Commerce Parkway to improve safety for vehicles and pedestrians. Currently there is a sidewalk on the north side that ends at IL 31. While this access road was designed to accommodate trucks and has turn lanes, it could be improved by striping crosswalks across Commerce Parkway, signage, and increased street lighting.
- Add a sidewalk along the south side of Commerce Parkway from IL 31 east to end of roadway. Sidewalks connecting to the front door of each business should also be added.
- As previously mentioned, "front door" shuttle service is typically the most effective in attracting riders, although generally only provided if the company is financially sponsoring the shuttle. Should front door service be provided, the shuttle should travel as close to the front door as possible possibly by circulating through the company parking lot entrance and exit driveways.

Should front door service not be provided, the van/shuttle would stop on-street in front of the business.

2.5.6.2 Illinois Route 25

Illinois Route 25 (IL 25) is a north-south major arterial serving the east side of Carpentersville. Per the *Longmeadow Parkway Corridor Study*, it has a five-lane cross-section with two travel lanes in each direction and a center turn lane/painted median. It has a posted speed limit of 45 miles per hour. The roadway is about 65 feet wide. It carries 27,200 average daily traffic (ADT) south of Lake Marian Road and 23,400 ADT north of Lake Marian Road. Signalized intersections are located at Helm, Kings Road, Robin Road, Lake Marian Road, Golfview Lane, L.W. Besinger, and IL 68. Pace Route 803 travels along almost the full length of IL 25 through the Village, stopping just north of the Village's northern boundary. Pace Route 543 travels through the Village along IL 25 from Lake Marian Road to IL 68.

The *Longmeadow Parkway Corridor Study* recommends that IL 25 be designed to accommodate bicycles and pedestrians. The roadway right-of-way (ROW) is noted to be wide enough to consider improvements for bikes and pedestrians. Existing pedestrian facilities include a sidewalk along the west side of IL 25 with some gaps, particularly north of L.W. Besinger. The east side for the most part does not have a sidewalk. Two bus shelters are located on IL 25. A mid-block painted crosswalk is located north of IL68 by the golf course.

Improvements to be considered:

- Continuous 10- to 12-foot multi-use path along both sides.
- Marked crosswalks on all approaches of signalized intersections.
- Pedestrian countdown signals.
- Narrowing of driveway width of commercial/business uses.
- Improve intersection with Lake Marian to include pedestrian refuge areas.
- Posted bus stops at signalized intersections and major activity locations with concrete pad and connecting sidewalks.

2.5.6.3 Bolz Road

Bolz Road is a two-lane east-west street extending from IL 25 to Williams Rd. Both of these intersections are under stop sign control. This road will be impacted by the future Longmeadow Parkway, which will include signalized intersections. A sidewalk is located on the south side of the roadway, although does not extend to IL 25 and ends at Amarillo Drive.

Potential improvements:

- Continuous sidewalk on south of road.
- Multi-use trail on north side of road to connect with the Fox River Trail.
- Improve intersection with IL 25 to protect pedestrians and bicyclists. While the intersection is proposed to be signalized as part of the Longmeadow Parkway, a short-term improvement is needed. This could be HAWK-type signal with flashing beacons and improved signage.

2.5.6.4 Helm Road/Kings Road

Helm Road /Kings Road are east-west collector streets with signalized intersection at IL 25. Helm Road and Kings Road are offset at IL 25 by about 350 feet. Kings Road provides access to Dundee Crown High School. Pace Route 803 travels along both Helm and Kings Roads. Helm Road has sidewalks along both sides. Kings Road has sidewalks between IL 25 and Amarillo, after which the sidewalks are discontinuous. This segment is particularly important as it provides access to Dundee Crown High School. There are marked crosswalks at three intersections near the high school. Kings Road continues to Williams Road. Access to Fox River Trail can be made from Williams, north of Kings Road.

Potential improvements:

- Kings Road to access IL 25.
- Continuous sidewalk along Kings Road from Amarillo to Williams Road.
- Marked shared lane along Kings Road from IL 25 to Amarillo.
- Bike lanes on Kings Road from Amarillo to Williams Road.
- Marked shared lane along Helms Road.
- Improve intersection with IL 25 to protect pedestrians and bicyclists. Improvements could include pedestrian refuge and curb bump-outs on Kings Road.

2.5.6.5 Lake Marian

Lake Marian is a two-lane collector roadway, traveling from IL 25 to Williams Street. This roadway provides important access in the Village, providing connections to commercial uses near IL 25, residential and commercial uses along L.W. Besinger, and several businesses near Williams Street. Traffic signals are located at Tulsa Avenue and IL 25. The intersection at IL 25 is large, due to being slightly skewed. It is approximately 125 feet across. A proposed bike trail along the segment between IL 25 and Skyline is included in the *Comprehensive Plan*. Both Paces Routes 543 and 803 travel along portions of Lake Marian Road. Sidewalks are located on the north side from IL 25 to Skyline. No sidewalks are located on south side. No sidewalks are provided on either side west of Skyline.

Potential improvements:

- Complete sidewalks on north and south side of road from Skyline to Williams.
- Add bike lanes/trail as per Comprehensive Plan.
- Improve intersection with IL 25 to protect pedestrians and bicyclists. Improvements could include pedestrian refuge and reduced turning radii.
- Install bus pads and shelters.
- Connect adjacent land uses to the sidewalks.

2.5.6.6 Williams Road

Williams Road is a two-lane major connector and is the only continuous north-south roadway between the Fox River and IL 25. North of Bolz Road it becomes Sandbloom Road. It generally has gravel shoulders and no sidewalks. No transit service is operated on Williams Road. It provides access to many businesses, the downtown, and the Fox River Trail. The access point to the Fox River Trail is north of Kings Road and is more of an informal access point with a gravel parking area. Given its close proximity to the Fox River Trail, no bicycle improvements have been proposed for this roadway.

2.5.6.7 L.W. Besinger

L.W. Besinger is a two-lane collector that provides key access to residential, the Village Hall, retail uses, and commercial businesses. It has access with IL 25 at its southern end which is signalized. The intersection at Lake Marian is not signalized. Route 803 travels along this roadway. Sidewalks are located in some portions on the outer side of the roadway, but not continuous. A bike trail/lane is proposed for L.W. Besinger in the *Comprehensive Plan*.

Potential improvements:

- Complete sidewalk on both sides of the roadway.
- Add bike lanes/trail as per Comprehensive Plan.
- Improve intersection with IL 25 to protect pedestrians and bicyclists. Improvements could include pedestrian refuge and reduced turning radii.
- Install bus pads and shelters.
- Connect adjacent land uses to the sidewalks.

Appendix D

Village of Carpentersville

Transit Improvement Plan

Evaluation of Transit Alternatives

December 2014

Prepared for

Regional Transportation Authority

Village of Carpentersville Illinois

Building a Better Tomorrow . . . Today

Prepared by

URS

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Think. See. Be Purple.

1.0 Introduction

The purpose of this report is to further define and evaluate the alternatives that were recommended for further investigation as part of the project Transit Investment Options Report and to recommend a strategy that will improve transit linkages between Carpentersville's residents and employers. The process to define and evaluate alternatives, as well as the recommended investment strategy that resulted from this process, is summarized in Sections 1.1 and 1.2 below. The recommended strategy is described in more detail in Section 5.0: Recommended Alternatives.

1.1 Definition and Analysis of Initial Alternatives

The Transit Investment Options Report conceptually defined a series of transit improvement options for further refinement and consideration by the Village of Carpentersville. Options under consideration included a variety of scenarios, ranging from minor modifications of the existing transit network to more efficiently serve the needs of existing riders to the creation of employer-supported transportation options that link specific employment centers with Village residential neighborhoods. The goal was to include transit alternatives that were innovative and specific to Carpentersville, but also operationally feasible. Transit infrastructure elements, including transit stop locations, sidewalks, and bike paths were also addressed.

Based on the outcomes of the analysis, and in consultation with Village and Regional Transportation Authority (RTA) staff, a series of four transit investment options were recommended for further refinement and comparison (Table 1). These options include:

- Pace Traditional Vanpool Program
- Pace Municipal Vehicle Program
- Pace Employer Shuttle Program
- Improved access to transit (suggested infrastructure improvements to support access to transit service)

Table 1 – Summary of Evaluation of Initial Alternatives to Further Investigate

Alternatives	Carry Forward?	Rationale
Demand Response Programs		
Pace Call-n-Ride	*No*	*Not a priority of Pace due to comparatively low estimated ridership*
Community Vehicle Program		
Locally-Based Program	*No*	*Village responsible for vehicle maintenance costs*
Municipal Vehicle Program	Yes	Pace responsible for vehicle maintenance costs
Pace Vanpool Programs		
Traditional Vanpool Program	Yes	Complements travel demand; costs borne by vanpool participants
Employer Shuttle Program	Yes	Complements travel demand; costs borne by employers
Metra Feeder Program	*No*	*Travel demand for this service does not originate at Metra stations*

Alternatives	Carry Forward?	Rationale
Modifications to Fixed Route Service		
Route 543 Restructure	*No*	*Additional operating costs required; loss of service to residents north and east of Meadowdale Shopping Center; operates on narrow residential streets*
Route 803 Restructure	*No*	*Additional operating costs required; operation on narrow residential streets*
Improved Access to Transit		
Transit-Friendly Infrastructure	Yes	Enhances access to transit; supports ridership

This report documents the refined definition and evaluation of each of the three vehicle-based transit investment options. The definition of these transit investment options includes vehicle type, general service plans, staffing requirements, ridership, the number of vehicles required, capital and operating and maintenance costs, and potential sources of funding.

1.2 Summary of Project Recommendations

Based on this definition and evaluation of alternatives, it is recommended that the Village support implementation of the Pace Traditional Vanpool Program in the near-term. The Traditional Vanpool program will increase awareness of commuting options by employees and build a rider base while the Village identifies funding sources and pursues Municipal Vehicle Program implementation. It is recommended that the Village work toward implementation of the Municipal Vehicle Program in the mid-term. Due to the heavy administrative burden and costs that would be the responsibility of local employers, the Employer Shuttle Program is not recommended at this time. It is also recommended that complementary infrastructure investments that improve access to transit are pursued in the mid- and long- terms. More detail about the recommendations can be found in Section 5.0.

2.0 Costs of Transit Alternatives

This section provides a brief description of the annual costs associated with each of the three transit alternatives. A summary of the programs is shown in Table 2; details are provided in the sections below.

Table 2 – Description of Transit Alternatives

	Pace Traditional Vanpool Program	Pace Municipal Vehicle Program	Pace Employer Shuttle Program
Vehicles owned by…	Pace	Pace	Pace
Driver provided by…	Vanpool participant	Village of Carpentersville	Employer or shuttle participant
Annual costs per van	Monthly; varies based on number of riders $250 deposit made by the primary driver $75 deposit per passenger	~$60,000 annually $1,000 security deposit	$750 month $9,000 annually $1,000 security deposit
Costs include…	Vehicle Fuel Maintenance Insurance Emergency roadside assistance Car washes	Vehicle ($100/month) Fuel Maintenance Emergency roadside assistance Part-time driver (must be procured by the Village) Part-time clerk (must be procured by the Village)	Vehicle Fuel Maintenance Insurance
Costs paid by…	Riders, directly to Pace	Village of Carpentersville *Note: costs can potentially be offset by third party funding sources, rider fares, and grants*	Employer
Rider fares charged?	Yes, directly to Pace	Decided by the Village	With prior approval from Pace

2.1 Pace Traditional Vanpool Program

A Pace traditional vanpool is a group of four of more individuals who commute to work using a Pace vehicle. The monthly vanpool fare is paid directly to Pace by each rider and is based on round trip miles and number of vanpool participants (see Table 3). As the number of riders increase, the cost to each passenger decreases; the lower passenger costs associated with larger van pools could facilitate participation by lower-income workers. The vanpool fare includes the vehicle, fuel, maintenance, tolls, insurance, emergency roadside assistance and car washes.

The primary driver is a vanpool participant and does not pay a fare if there are five or more vanpool participants. The driver can also use the van for 300 personal miles a month. Each vanpool can designate up to four backup drivers who each receive a fare discount of $10 per month. The primary driver must make a $250 deposit and each passenger must make a $75 deposit; all deposits will be

returned, provided the vehicle is returned in good condition (ordinary wear and tear excepted). Drivers must meet Pace's vanpool driver requirements, have a good driving record, pass a physical and drug test, and attend a half-day training class at Pace. The primary driver and back-up drivers must sign a Driver/Back-Up Driver Agreement, and passengers must sign a Rider Agreement prior to participation. An initial three-month commitment to the program by participants is required.

Table 3 – Monthly fares paid by vanpool riders to Pace

	4 Riders	5-6 Riders	7-8 Riders	9-14 Riders
Per passenger, per month With a range of 1-20 miles per one-way trip	$112	$99	$85	$73

2.2 Pace Municipal Vehicle Program

The Pace Municipal Vehicle Program would be used to operate a service that accommodates work trips for residents working in the three main employment areas in the Village: Commerce Parkway (including Trim-Rite and Dana Molded Products), Tamarac Drive / Maple Avenue (including Stanley Machining and Tool Corporation), and the Washington / Main area (including OTTO and Revcor). It is important to note that the number and location of these locations could vary based on funding support and employer participation. Even though the service would be open to the public, the origins, destinations and service times will accommodate those Carpentersville employees who work in these three main employment areas and who live in the neighborhoods east of Route 25, along Route 25, and along the Fox River north of Main Street.

Users of this service would call in advance to arrange for their trips, or schedule subscription trips for consistent services for set work days and times. Initially the service is envisioned as operating with one van and part-time drivers, and the hours of operation will be timed to coincide with the shift change of major employers.

It is estimated that this service will cost approximately $60,000 annually. This includes costs that are included as part of the Pace Municipal Vehicle Program, such as the vehicle, fuel, maintenance, tolls, and emergency roadside assistance; and costs associated with the Village responsibilities of procuring, employing, and managing a part-time clerk and part-time drivers. The Village of Carpentersville would be responsible for these costs, although a portion of the costs could be defrayed through the collection of fares from riders, or through partnerships and cost sharing with the local employers. Based on preliminary conversations with select companies, businesses may be interested in financially supporting such a program if it fits the needs of their employees and work shift schedules.

The Village also must pay a $1,000 security deposit, which would be returned, provided the vehicle is returned in good condition (ordinary wear and tear excepted). The Village is responsible for car washes, and must obtain and maintain commercial general and auto liability insurance for the Pace vehicle in compliance with Pace's requirements.

As stated above, drivers are provided by the Village, and must be selected in accordance with federal, state and local laws and regulations, and in compliance with the Pace Vehicle Program Driver Criteria and Employer Shuttle Vehicle Program Operations Manual. The Village must comply with Pace's drug and alcohol policy requirements.

The Village of Carpentersville must designate an individual to serve as Pace's contact person; this person is required to attend and complete administrative training provided by Pace. Pace will require monthly

reports, perform monthly reviews of these monthly reports, and will perform periodic site visits. The employer will allow Pace or its designees to inspect and audit all records and data associated with the operation of the Municipal Vehicle Program. The Village must retain all records associated with the service for at last five years following termination of the program.

2.3 Pace Employer Shuttle Program

The Pace Employer Shuttle Program provides vans to employers within Pace's service area for work-related passenger trips. Employers pay $750 per month, or $9,000 annually, for each van and, with prior approval from Pace, may charge riders a fee for the service. A minimum of five employees must use the service. The employer also must pay a $1,000 security deposit, which would be returned, provided the vehicle is returned in good condition (ordinary wear and tear excepted). The cost includes the vehicle, fuel, maintenance, and insurance. Employers are responsible for car washes.

Drivers are provided by the employer or are members of the shuttle, and must be selected in accordance with federal, state and local laws and regulations, and in compliance with the Pace Vehicle Program Driver Criteria and Employer Shuttle Vehicle Program Operations Manual. The employer is responsible for costs associated with the required United States Department of Transportation physical examination and drug and alcohol testing. Pace will provide driver training and drug and alcohol training, and the employer must comply with Pace's drug and alcohol policy requirements.

The employer must designate an individual to serve as Pace's contact person; this person is required to attend and complete administrative training provided by Pace. Pace will perform monthly reviews of required monthly reports, and will perform periodic site visits. The employer will allow Pace or its designees to inspect and audit all records and data associated with the operation of the vehicle. The employer must retain all records associated with the service for at last five years following termination of the program.

3.0 Service Qualities

This section discusses the benefits of each alternative and provides a comparison of the relative travel time, accessibility, and distance to the final destination. A summary of this comparison is presented in Table 4.

Table 4 – Service Qualities of Transit Alternatives

	Pace Traditional Vanpool Program	Pace Municipal Vehicle Program	Pace Employer Shuttle Program
Travel Time	Comparable to personal automobile trip	Comparable to or slightly longer than an automobile trip	Comparable to personal automobile trip
Accessibility	Wheelchair accessible vehicles available	Wheelchair accessible vehicles	Wheelchair accessible vehicles available
Walk Distance	From closest parking lot	From closest curb or parking lot	From closest parking lot

3.1 Pace Traditional Vanpool

The Pace Traditional Vanpool Program would serve commute trips and would serve residents with common origins and destinations. The Pace Traditional Vanpool Program offers travel times that are comparable to personal automobile trips, wheelchair accessible vehicles would be available, and walking from the vehicle to a passenger's final destination would be minimal - likely as close as the closest

parking lot. Some employers choose to provide reserved spots close to the entrance for vanpools as an added incentive to participate.

Vanpools reduce vehicle miles traveled, fuel consumption, and tend to increase on-time performance of workers because individuals do not want to make others late and they hold their peers accountable for timeliness.

In the Pace Traditional Vanpool program, the riders would pay Pace a monthly fare based on round trip miles and number of vanpool participants.

3.2 Pace Municipal Vehicle Program

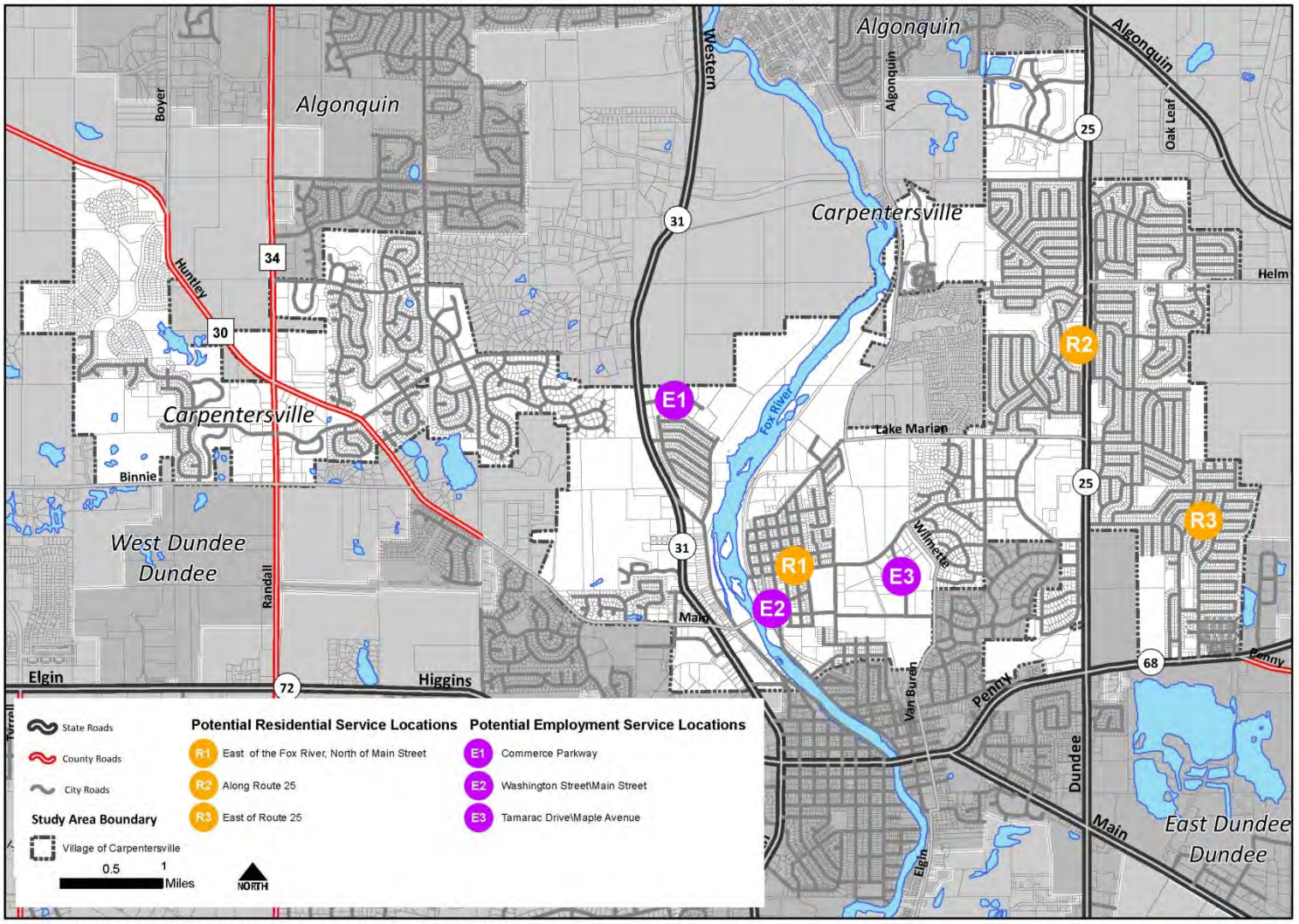
This program would be used to serve Carpentersville residents and employers, as well as regional residents, with an initial focus on:

- The residential areas east of Route 25, along Route 25, and east of the Fox River north of Main Street
- The employment areas of Commerce Parkway (including Trim-Rite and Dana Molded Products), Tamarac Drive / Maple Avenue (including Stanley Machining and Tool Corporation), and the Washington / Main area (including OTTO and Revcor)
- Regional residents from communities outside of Carpentersville that could use the service to connect to Carpentersville employers from Pace routes 543 and 803.

These potential residential and employment service locations are shown in Figure 1.

Since the service times will revolve around employer shift times, travel time for trips will vary depending upon how many people utilize the service at a given time. Travel times may range from being comparable to personal automobile travel times to being up to several times longer than the personal automobile, depending on passenger demand and rules established for how long a vehicle will wait for a passenger. All vehicles in the Pace Municipal Vehicle Program are wheelchair/mobility device accessible. Due to the door-to-door nature typical of this service, passengers would be dropped off close to their final destination.

Figure 1 – Pace Municipal Vehicle: Potential Service Locations



Pace Municipal Vehicle Program: Potential Service Locations

Carpentersville Transit Improvement Plan

3.3 Pace Employer Shuttle Program

The Pace Employer Shuttle Vanpool Program would serve commute trips and would serve residents with common workplace origins and destinations. The Pace Employer Shuttle Program offers travel times that are comparable to personal automobile trips, wheelchair accessible vehicles would be available, and walking from the vehicle to a passenger's final destination would be minimal - likely as close as the closest parking lot. Some employers choose to provide reserved spots close to the entrance for vanpools as an added incentive to participate.

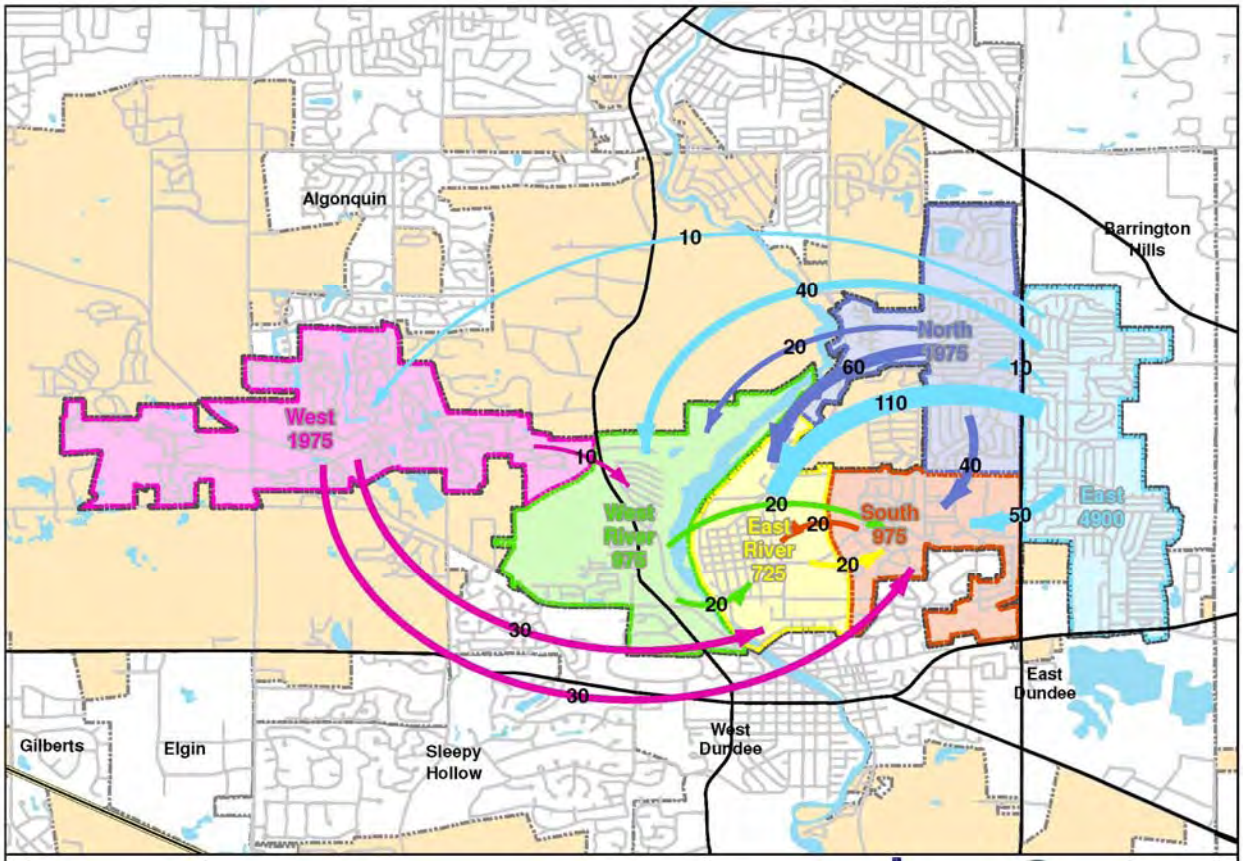
The employer would pay the fare to Pace on behalf of its employees. Employers may, with approval from Pace, pass a portion or all of the costs on to the employees who participate in the program.

4.0 Ridership Estimates

Based on the market analysis, centers of population and employment within Carpentersville are generally geographically separated. However, developing a successful transit system is not as simple as linking areas of Carpentersville where people live to areas of Carpentersville where people work for the simple reason that most people don't work at the job closest to their home.

The highest volume commute patterns within Carpentersville are from the East and North analysis areas to the East River and South analysis areas (see Figure 2). In addition there are a large number of people who live in the East analysis area who work in the West River analysis area.

Figure 2 – Commute Flows within Carpentersville*



*Source: US Census, 2010 LEHD; *colored numbers represent population, black number represent commute flows within Carpentersville.*

Approximately 300 people commute between these analysis zones on a daily basis. The current transit commute mode share for Carpentersville is 2.1 percent. Due to the current configuration of bus routes, virtually none of the transit riders are riding transit to work in either the East River or South analysis zone[1]. This transit commute mode share is lower than the 6.4 percent mode share for the six-county RTA area[2]. However, Carpentersville has a higher percentage of residents who carpool to work (12.2 percent), than the six-county RTA area (8.5 percent)[3]. This comparatively high rate of carpooling may indicate that there is latent demand for vanpool service or other services which take advantage of those common origins and destinations.

Table 5 presents a range of potential transit riders within Carpentersville, based on the existing number of commuters and the transit and carpooling commute mode shares in Carpentersville and RTA area.

Table 5 – Range of Potential Transit Riders in Carpentersville

	Mode Share	Riders
Total Number of Commuters		**300**
Low Range Ridership Estimate	2.1%	5
Medium Range Ridership Estimate	6.4%	20
High Range Ridership Estimate	12.2%	35

5.0 Recommended Alternatives

It is recommended that the Village of Carpentersville work the local employers and employees to support the near-term implementation of a Pace Traditional Vanpool Program while pursuing implementation of the Pace Municipal Vehicle Program. The administrative requirements and costs of the Pace Employer Shuttle Program are significant challenges to its implementation within Carpentersville, and therefore is not recommended. In addition to these service improvements, it is recommended that the Village focus on improved infrastructure for pedestrian and non-motorized access and mobility, as described in the Transit Investment Options report.

Table 5 – Recommended Alternatives

Alternatives	Timeframe	Rationale
Pace Traditional Vanpool Program	Near-term	Efficiently connects Carpentersville residents with major Carpentersville employers; No financial contribution from the Village or employers; Utilized by employees with administration by Pace; Can build a ridership base for the Pace Municipal Vehicle Program

[1] *US Census, American Community Survey, 2007-2011*
[2] *Ibid*.
[3] *Ibid*.

Alternatives	Timeframe	Rationale
Pace Municipal Vehicle Program	Mid-term	Efficiently connects major concentrations of Carpentersville residents with major Carpentersville employers; Regional residents from communities outside of Carpentersville could use the service to connect to Carpentersville employers from Pace routes 543 and 803; Program is administered and funded by the Village; Costs can potentially be offset by third party funding sources, fares and grants
Transit-Supportive Infrastructure Improvements	Mid-term	Infrastructure improvements will support the mobility of transit users, pedestrians, and bicyclists
Pace Employer Shuttle	*Not recommended*	*High administrative costs and requirements*

5.1 Pace Traditional Vanpool Program

The Pace Traditional Vanpool Program should be pursued in the near-term, particularly in areas where there are multiple employers close together, such as the industrial parks off Commerce Parkway (including Trim-Rite and Dana Molded Products), Tamarac Drive/Maple Avenue (including Stanley Machining and Tool Corporation), and the Washington/Main area (including OTTO and Revcor). Pace representatives will introduce the vanpool concept to employees, help encourage participation, and administer the program.[4]

The Pace Traditional Vanpool is a competitively-priced commuting option, ranging from approximately $1.75 to $2.67 each way, depending on the number of people in the vanpool. In addition, with the exception of rider recruitment and employer education, the program does not require an on-going subsidy from the Village of Carpentersville or an additional efforts or financial contribution from local employers.

Based on the range of potential transit riders (Table 5) and assuming that commuters who are currently informally carpooling would shift to a vanpool, it is likely that - with proper marketing - Carpentersville could support several vanpools. Employers and/or the Village could work with Pace to hold a Pace Employer Day to introduce the program to employees.

5.2 Pace Municipal Vehicle Program

The Pace Municipal Vehicle Program would provide a transit option for Carpentersville residents who work in the selected employment areas; the number and location of these locations could vary from one to three, based on funding and employer participation. It would require the Village of Carpentersville to partner with Pace for vehicles and operations, and hire additional staff (part-time clerk and part-time driver). The costs would be approximately $60,000 a year, initially, to operate the service, although a portion of this cost could be offset with passenger fares.

If the service became successful and ridership approaches the high end of the potential ridership range, it would incur additional costs for the Village of Carpentersville that would be incremental and relative to the degree of growth. Two or three vehicles would likely be required to accommodate the high end of

[4] http://pacebus.com/sub/vanpool/employer_information.asp

the potential ridership range (Table 5), depending on the time of day that trips are occurring and the ability to serve multiple riders at one time. Costs would continue to incrementally increase as additional riders and additional employment centers are served.

5.3 Recommended Improved Access to Transit

A series of recommended infrastructure investments to improve access to transit were included in the Transit Investment Options report. While some recommendations were designed to improve access to Pace fixed route bus service (a transit alternative that was subsequently eliminated from consideration), the report does recommend targeted upgrades to the pedestrian environment around major Carpentersville employers as a means to support vanpool service. These recommendations, the details of which can be found in the report, include:

- Enhance intersections and mid-block crossings for pedestrian safety (signalization, signage)
- Reduce the number of driveways (reduces opportunity for driver/pedestrian conflicts)
- Complete the sidewalk network (a continuous sidewalk supports safe pedestrian movement)
- Encourage shared parking (reduces overall traffic volume)
- Improve streetscape elements (plants, paving, street furniture and signage can visually cue drivers to reduce speed as they enter a pedestrian zone)