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Niles Station Feasibility Study

DRAFT Final Report

Village of Niles

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1. Executive Summary

The Village of Niles conducted a comprehensive feasibility study for a new station on the Metra Milwaukee District North Line (MD-N). The study sought answers to the following questions:

- Will a new station allow for appropriate spacing to existing stations,
- Can a location be identified to physically accommodate a station and parking,
- Will the station be compatible with current railroad operations,
- Will there be a sufficient number of potential users,
- Will impacts to traffic, storm water, and other factors be manageable,
- What are the estimated costs and revenues,
- Will a station stimulate the redevelopment of adjacent properties,
- Can estimated costs be realistically funded, and
- Will there be public support for a station?

This final report is a compilation of a series of technical reports that addressed each of these questions. A separate condensed version of this report was also prepared, which may be interest to readers.

1.1 Technical Summary

The following summarizes each of these areas of investigation:

Station Spacing

The proposed Niles station would be between the Morton Grove and Edgebrook Stations, which are 2.7 miles apart. The resultant spacing of approximately 1.3 miles would be somewhat less than preferred for commuter railroads. The analysis concluded that while station spacing can be a factor to the success of a potential commuter rail station, spacing alone does not determine ridership performance. Service levels, station amenities, destinations within walking distance, and the size of the potential ridership market are likely to be deciding factors in the feasibility of an infill station between the Morton Grove and Edgebrook Stations.

Station Site Selection

Three alternative locations were evaluated, where Howard Street, Jarvis Avenue, and Touhy Avenue intersect the MD-N rail line. The Jarvis site was recommended based on several evaluation factors, including the availability of physical space to accommodate the station building, platforms, parking, and other ancillary elements.

Railroad operational Impacts

The additional time required to stop and start MD-N trains at the Niles Station would add approximately two minutes of travel time. This added time could cause some current MD-N passengers to decide to use other Metra lines and other modes instead, although the net change in MD-N ridership including the Niles station would be positive. There would be no discernible impacts to current freight and Amtrak services.

Niles Station Demand

Two methodologies were used to forecast station boardings: the Federal Transit Administration (FTA) STOPS model and a statistical regression analysis. The Niles station weekday boardings ranged between 700 and 1,380 in 2040. The low end of the range was derived from the statistical analyses (460 estimated origin boardings and 240 destination boardings). The high end was based on the STOPS application. As a comparison, the median Metra station attracted 422 weekday boardings based on a 2016 Metra passenger count. Some diversion of boardings from Morton Grove (-12%) and Edgebrook (-9%) were estimated.

Traffic and Storm Water Impacts

The preliminary conclusions of an analysis of traffic impacts were that the proposed Niles station would not over-burden the existing roadway system to adversely affect level of service (LOS). The estimated additional traffic generated by the station in comparison to current roadway traffic volumes would be minimal. The impacts on traffic due to additional railroad crossing gate downtown would also be minimal. The Niles station would add between 1% and 2% to the total time gates would be in the down position during the AM and PM peak hours.

An initial review of storm water impacts associated with new impervious areas identified the need for two detention areas, east and west of the rail tracks.

Costs and Revenues

Various capital improvements were identified and quantified, and these quantities were used as the basis for estimating investment requirements. In 2018 dollars, the estimated capital cost to construct the station and related improvements totaled $31.1 million. Operational and maintenance costs were estimated at $230,000 per year, of which about 80% would be Metra's responsibility and the Village of Niles would be responsible for the remaining 20%. Annual fare revenue attributable to Niles station users was estimated at $2.5 million per year.

Stimulate Development/Redevelopment

Based on earlier planning work as part of the Village's Touhy Triangle Master Plan project, a land use plan variant that emphasized transit-oriented development (TOD) principles was formulated. The long-term plan vision projected the following totals for new development within the overall district.

- Residential: 1,600 to 2,000 units
- Commercial: 180,000–235,000 square feet
- Office: 250,000–365,000 square feet
- Hotel: 90,000–180,000 square feet
- Industrial: 0 square feet
- Recreation: 105,000 square feet

Funding Opportunities

The report outlines various funding or financing programs that can be considered to secure project funding, including:

- FTA Capital Investment Grants
- US DOT Better Utilizing Investments to Leverage Development (BUILD)

- CMAP Congestion Mitigation and Air Quality (CMAQ)
- CMAP Surface Transportation Program (STP)
- Local Value Capture
    - Tax Increment Financing (TIF)
    - Benefit Assessment District
    - Sales Transaction Tax
    - Joint Development

Public Support

Extensive public and stakeholder outreach activities were conducted using a variety of channels, including a project website, social media, an online survey, stakeholder meetings and a public open house. Stakeholders included local employers, Village of Skokie, Metra, and Pace. Overall input received was supportive of developing a Niles station.

1.2 Conclusions

The technical analysis in this report indicates that a Niles station would be feasible and was estimated to attract a level of ridership placing it in the top 20 percent of all Metra stations. Public outreach found strong local support. A Niles station would serve as a catalyst for development, which could follow transit-oriented development principles of mixed use, compactness and walkability. A range of funding programs could be used to finance the improvements required to implement the station. The ultimate decision rests with the Niles Village Board, which will require a commitment to Metra to secure capital funding for construction and an agreement to fund station and parking operation and maintenance costs.

2. Station Spacing

2.1 Introduction

The first step of this feasibility study was to determine whether a station on this segment of the MD-N is appropriate, based on practical or theoretical station spacing considerations. The proposal is to add a new infill station between two existing stations, Edgebrook at milepost (MP) 11.6 and Morton Grove at MP 14.3. The midpoint of this 2.7-mile span would be MP 13.0, approximately halfway between Touhy Avenue and Howard Street. Placing a station at this location would reduce the spacing from 2.7 miles to 1.3 miles. As such, this chapter reviews whether this resultant spacing raises issues that could affect the overall viability of the new station, or how it is designed.

The chapter will cover the following areas:

- Theoretical basis for, and issues with, spacing of transit stops
- Implications of station spacing for Commuter Rail
- Guidelines, Standards and Practices of other Commuter Rail agencies
- Review of Metra actual station spacing
- Conclusions applied to Niles

2.2 Station Spacing Issues

A fundamental design challenge for any public transit system is deciding the distance between access points of the service. This applies to a local bus, light rail, rapid transit, commuter rail, or intercity rail. The choices are to have:

- Minimal number of stops (i.e., wider spacing) to offer faster service, or
- More stops (i.e., closer spacing) to provide access to a greater number of potential users, but at slower speeds.

To illustrate the effect of station stops on travel time, Table 2-1 shows scheduled travel times between Naperville and Chicago Union Station (CUS) on the Metra BNSF line serving the western suburbs. This line was chosen for illustration because it offers express and local/all-stop service. The two stations are 28.5 miles apart. As can be seen, the difference in travel time between an express train with no intermediate stops and an all-stop train (i.e., 22 intermediate stops) is 115 percent (33 minutes versus 71 minutes). Each added stop increases travel time by about two minutes; variations beyond the number of stops are mostly due to differences in the level of ridership, where longer station dwell times are required with higher boardings or alightings.

Table 2-1: Selected BNSF Inbound Train Travel Times between Naperville and CUS

Union Station Arrival	Intermediate Stops	Scheduled Travel Time (mins)	Added Time from No Stops (mins)	Added Time per Stop (mins)	Speed (MPH)
6:53 AM	0	33	0	--	51.8
5:32 AM	9	48	15	1.7	35.6
4:58 PM	11	55	22	2.0	31.1
7:00 AM	19	66	33	1.7	25.9
6:00 AM	22	71	38	1.7	24.1

Source: Metra BNSF Timetable.

The need to provide closer spacing—at the expense of travel time—is driven by serving riders who access or egress by a mode other than private automobile—typically walking. Walking as an access mode is generally less common for commuter rail because this type of transit tends to serve lower-density suburban and exurban communities where commuters typically have access to an automobile and must travel longer distances to reach the central business district. Automobile access is a key attribute of commuter rail, and it greatly enlarges the station market area from which riders can be drawn to a station, in addition to obviating the need for frequent stops, which would significantly slow travel times across longer distances. Commuter rail station market areas are also comparatively less dense than would otherwise be needed to support transit, since the station parking facilities support the collection of riders from a large area.

Table 2-2 shows the distribution of originating riders by their mode of access to reach their boarding station. Access mode shares are from the Metra 2016 Origin-Destination Survey of riders traveling on AM trains, and are presented in rank order. For the Metra system as a whole, 53.1 percent of riders used an automobile to park at a station. Another 18.6 percent were dropped off or carpooled, totaling 71.7 percent who arrived by car. Riders using the walk mode of access, who would be most impacted by station spacing, accounted for 22.6 percent of surveyed riders. Table 2-2 also presents mode of access shares for the MD-N Line, which reveals a somewhat lower use of the walk mode, and a slightly higher share arriving by car than for the system overall. MD-N stations near Niles (i.e., Morton Grove, Edgebrook, Golf) have walk access modes ranging from roughly a quarter to half.

Table 2-2 also reveals that riders who access stations by walking travel the shortest distance between their origin and AM boarding station (0.3 miles straight-line distance, on average). MD-N riders accessing by automobile traveled between 1.4 and 1.9 miles.

Table 2-2: Metra and MD-N Mode of AM Access and Average Distance

	Share of AM Trips		Avg. Dist.(miles)	
Access Mode	System	MD-N	System	MD-N
Drive Alone	53.1%	55.6%	2.2	1.9
Walk	22.6%	19.5%	0.3	0.3
Drop Off	14.7%	14.1%	1.4	1.4
Bicycle	2.5%	3.7%	0.9	0.9
Carpool Passenger	2.0%	1.9%	1.9	1.8
Carpool Driver	1.9%	1.9%	1.9	1.8
Pace Bus	1.6%	0.2%	2.4	2.7*
CTA Bus	0.8%	1.6%	1.8	1.9
Other	0.5%	0.6%	1.6	1.6
Rideshare (Uber, Lyft, Via)	0.3%	0.4%	2.0	2.1
CTA Rapid Transit	0.2%	0.4%	3.5	4.3
Taxi	0.2%	0.1%	1.7	1.1*
Another Metra Line	0.1%	0.0%	6.8	9.3*
Divvy bike	0.1%	0.1%	1.0	0.8*
Private Bus	0.0%	0.0%	1.9	1.3*
Total / Average	100.0%	100.0%	1.6	1.5
Total AM Boardings	125,921	10,358		

Source: Metra 2016 Origin-Destination Survey.

** Weighted average based on fewer than 10 data points.*

Notes: Excludes downtown station boardings. MD-N average includes shared station Western Avenue. Excludes farthest 10% of systemwide origins by mode to correct for outliers in survey results. Uses weighted boardings and straight-line distance in calculating average distance in miles. Values are rounded to the nearest decimal.

While the majority of Metra riders board AM Peak Inbound trains at outlying stations and alight at a downtown Chicago station, there are Metra stations outside of downtown that also serve destination riders. A prominent example is the MD-N Lake Cook Road Station in Deerfield, which is supported by a system of distributor buses called Shuttle Bugs. Unlike the traditional commuter rail rider, who is destined for the highly concentrated employment center in downtown Chicago (about 700,000 jobs in a three-square mile area), riders traveling to endpoints outside of downtown are bound for destinations generally more dispersed—often beyond walking distance from an alighting station.

The Metra Origin-Destination survey also included data on egress mode, which represented travel means used to reach one's ultimate destination during the AM. The percentages shown on Table 2-3 exclude responses for riders alighting at one of Metra's five downtown stations. As can be seen, system-wide over one-half of respondents walked after alighting their train. The MD-N showed a lower share of walkers (42.2 percent), which can be attributed to greater use of public or private buses. Table 2-3 also shows the average distance commuters travel from a non-downtown station to their destination. The average for walking is the same as between the system and MD-N averages (0.5 miles), but private shuttles tend to travel farther, while trips by Pace or CTA are slightly shorter.

Table 2-3: Metra and MD-N Mode of AM Egress and Average Distance

	Share of AM Trips		Avg. Dist. (miles)	
Egress Mode	System	MD-N	System	MD-N
Walk	52.3%	42.2%	0.5	0.5
Private Shuttle	8.8%	10.0%	1.9	2.6
Pace Bus	7.9%	15.7%	2.3	1.9
Get Picked Up	6.4%	6.3%	2.0	2.2
Drive Alone	6.0%	5.2%	2.6	2.6
CTA Bus	5.7%	8.5%	2.0	1.9
Bicycle	2.7%	3.0%	1.2	1.5
Rideshare (Lyft, Uber, Via)	2.2%	2.4%	2.0	1.7
CTA Rapid Transit	1.8%	0.9%	4.5	3.9*
Taxi	1.7%	1.5%	2.2	2.1*
Carpool Passenger	1.6%	1.3%	2.4	2.5*
Other	1.5%	1.2%	1.7	2.3*
Another Metra Train	0.7%	0.4%	7.7	5.7*
Divvy Bike	0.4%	0.8%	1.2	1.6*
Carpool Driver	0.4%	0.5%	3.8	4.6*
Total / Average	100.0%	100.0%	1.3	1.5
Total AM Alightings	16,258	2,766		

Source: Metra 2016 Origin-Destination Survey.

** Weighted average based on fewer than 10 data points.*

Notes: Excludes downtown station alightings. MD-N Average includes shared station Western Avenue. Excludes farthest 10% of systemwide destinations by mode to correct for outliers in survey results. Uses weighted alightings and straight-line distance in calculating average distance in miles. Values are rounded to the nearest decimal.

Table 2-4 shows the distribution of AM walk access and egress by one quarter-mile increment for stations outside of downtown Chicago. The first half mile cumulatively accounts for between 63 and 75 percent, and proportions are roughly similar between the system and MD-N.

Table 2-4: Walk Distances for AM Riders, System and MD-N

	Mode of Access		Mode of Egress	
Miles	System	MD-N	System	MD-N
0.00 - 0.25	38%	40%	37%	38%
0.26 - 0.50	37%	34%	26%	26%
0.51 - 0.75	16%	16%	11%	14%
0.76 - 1.00	5%	3%	6%	3%
1.01 - 1.25	1%	2%	2%	2%
1.26 - 1.50	1%	1%	2%	1%
1.51 +	3%	4%	16%	15%
	100%	100%	100%	100%

Source: Metra 2016 Origin-Destination Survey.
Notes: Excludes downtown station boardings and alightings. MD-N values include shared station Western Avenue. Uses weighted alightings and straight-line distance in calculating average distance in miles. Values are rounded.

While the higher percentage of AM riders who walk from a non-downtown station suggests that closer spacing can be important, this segment of Metra ridership represents one-eighth the number of riders making Metra's traditional AM commuter trip. In addition, there were only 13 stations of 234 total non-downtown stations that reported more AM Peak offs than ons based on the 2016 Metra Passenger Count. As such, Metra's accommodation of destinations outside of downtown Chicago is limited to a relatively few areas in the region.

2.3 Commuter Rail Station Spacing Practice & Guidelines

Table 2-5 lists all commuter railroads in the United States who report statistics to the Federal Transit Administration's (FTA) National Transit Database (NTD), shown in rank order of unlinked passenger trips (i.e., count of each time a passenger boards a vehicle, even if part of the same journey from origin to destination). This data repository is required of FTA grant recipients, and includes variety of financial, operating, ridership, and asset data. For the 23 systems listed, 2016 data on route miles and number of stations was used to derive the average system spacing of stations. Overall, this statistic was 3.1 miles. This agency average was higher than the 2.0 miles for Metra, as well as higher than most of the older and largest commuter rail systems nationally. The top seven agencies have spacing averages lower than the 3.1 overall average; these generally more established agencies accounted for 89 percent of the reported unlinked trips in 2016.

A review of commuter rail agency policies at the five largest commuter rail agencies in terms of ridership found that none have specific guidelines or standards on the spacing of stations. Guidance on spacing can be found in Alternative Analysis studies that include evaluation of candidate transit technologies. In addition, selected state department of transportation departments have published characteristics of transit technologies as an aid to state-wide transportation planning. Agencies have also included guidelines to assist agencies in transit-oriented development planning.

Table 2-5: Station Spacing at US Commuter Railroads

Commuter Rail Agency	Primary city Served	Annual Unlinked Trips	Route Miles	Number of Stations	Average Spacing (miles)
MTA Long Island Rail Road	New York	103,196,857	319.1	124	2.6
New Jersey Transit Corporation	New York	90,872,267	500.9	165	3.0
Metro-North Commuter Railroad Company	New York	86,297,511	272.9	112	2.4
NE IL Regional Commuter Railroad Corp (Metra)	Chicago	72,289,606	487.7	241	2.0
Southeastern Pennsylvania Transp. Authority	Philadelphia	36,187,570	223.5	155	1.4
Massachusetts Bay Transportation Authority	Boston	33,830,904	388.0	138	2.8
Peninsula Corridor Joint Powers Board	San Francisco	18,355,641	76.8	32	2.4
Southern California Regional Rail Authority	Los Angeles	13,758,419	412.2	59	7.0
Maryland Transit Administration	Baltimore	8,961,892	200.2	42	4.8
Utah Transit Authority	Salt Lake City	4,545,849	87.2	16	5.5
Virginia Railway Express	Washington	4,352,814	86.8	19	4.6
Central Puget Sound Regional Transit Authority	Seattle	4,312,113	81.9	12	6.8
South Florida Regional Transportation Authority	Miami	4,241,486	71.1	18	4.0
Northern Indiana Commuter Transportation Dist.	Chicago	3,504,080	89.9	19	4.7
Dallas Area Rapid Transit	Dallas	2,054,001	36.2	10	3.6
North County Transit District	San Diego	1,556,056	41.1	8	5.1
Pennsylvania Department of Transportation	Philadelphia	1,416,029	72.2	12	6.0
Altamont Commuter Express	San Jose	1,290,085	86.0	10	8.6
Rio Metro Regional Transit District	Albuquerque	886,386	96.6	14	6.9
Connecticut Department of Transportation	Hartford	849,942	50.6	9	5.6
Metro Transit	Minneapolis	711,167	39.0	7	5.6
Northern New England Passenger Rail Authority	Boston	473,923	143.8	12	12.0
Regional Transportation Authority	Nashville	277,741	31.4	6	5.2
Commuter Rail Total / *Average*		**494,222,339**	**3,895.0**	**1,240**	***3.1***

Source: 2016 Federal Transit Administration (FTA) National Transit Database

Table 2-6 indicates that published guidelines are generally much wider than commuter rail agencies experience in practice, especially compared to older and larger legacy systems. This is believed to be due to guidelines being used principally for new start-up systems, where the main travel market to be served is the suburb-to-center city work commute trip. The guidelines are mostly presented as ranges from two miles to up to ten miles.

Table 2-6: Selected Guidelines on Commuter Rail Spacing

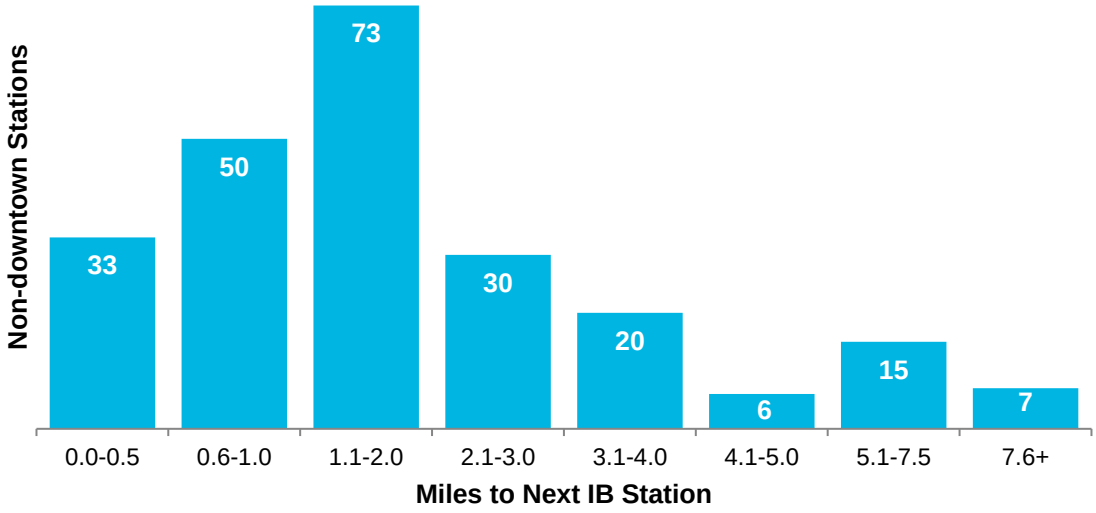
Report	Sponsoring Agency	Published	Spacing in Miles
Wisconsin Urban Rail Transit Technology Alternatives	State of Wisconsin Reference Bureau	1998	3 to 6
New Hartford Springfield Commuter Rail Implementation Plan	Connecticut DOT	2004	5
Circle Line Alternatives Analysis	Chicago Transit Authority	2006	3 to 7
Transit Service Design Guidelines	Virginia Department of Rail & Public Transportation	2008	5 to 10
Planning for Transit-Supportive Development	FTA Research	2014	2 to 5
Understanding the Range of Transit Choices	Florida Department of Transportation	2015	2 to 8
Regional Transit Guidelines	Metropolitan Council (Twin Cities Region)	2016	5 to 7

2.4 Metra Practice

The Metra system includes 241 stations, including five downtown stations. For the purpose of this analysis, two stations that serve more than one line were treated as single stations (i.e., Joliet-RID/HC and Clybourn-UP-N&NW). As a result, the following is based on 234 stations. This count does not include the Romeoville Station on the Heritage Corridor Line, which opened in February 2018.

Figure 2-1 shows the distribution of stations by range of miles to the next inbound station. Eighty-three stations (35 percent of all stations) have a spacing of one mile or less. Stations between one and two miles number 73 (31 percent). The remaining one-third of stations range between 2.1 and 21.2 miles.

Figure 2-1: Metra Non-Downtown Stations by Miles to the Next Inbound Station

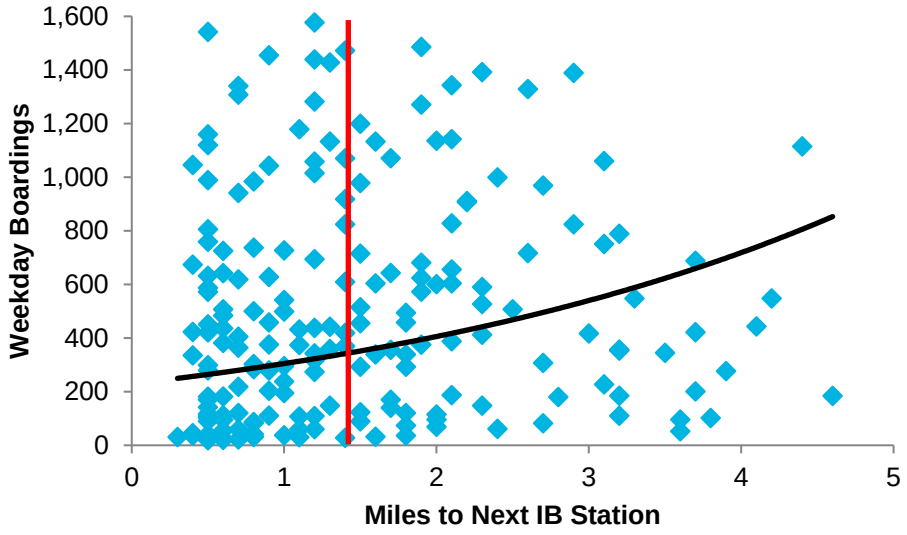


An important question related to the spacing of Metra stations is whether wider spacing translates to higher ridership. That is, when stations are spaced more closely together, does demand spread between stations such that ridership at an individual station is lower? Relatedly, is faster service from wider spacing more important than maximizing access with closer spacing?

Figure 2-2 is a scatter plot of boardings by distance to the next inbound station (the y-axis is truncated to improve legibility, and therefore the 19 outlier stations with greater than 1,600 boardings are not visible). This scatterplot illustrates that as spacing increases, so do boardings, but the correlation is weak. To find a stronger correlation between spacing and ridership, over 25 scatterplot analyses were carried out using different subcategories such as travel time to downtown, location, station type, service levels, parking capacity, etc. None of these yielded a strong correlation, which indicates that spacing on its own cannot cause high or low ridership—multiple other factors influence station performance and may vary by station spacing.

The vertical red line represents the 1.3-mile mark—the distance between the proposed Niles station site and the existing Edgebrook station. At this spacing, boardings range from below 50 to over 2,000. The median weekday boardings for stations between 1.1 and 1.5 miles from the next inbound station is 526.

Figure 2-2: Station Boardings by Distance to Next Inbound Station



Another way of considering the issue of appropriate spacing for a new infill station is examining Metra's experience in adding stations. Since 1983, 32 stations have been added to the system. Of this number, one was a consolidation of two stations, seven were part of line extensions, eleven were stations on a new line (i.e., NCS), and the remaining thirteen were infill stations. Table 2-7 lists new infill stations ordered by the gap between existing stations that was filled. A Niles station would fill the gap between Morton Grove and Edgebrook, a distance of 2.7 miles. This distance would be on the closer end of the range of infill stations added since 1983. It is believed that Metra has become more sensitive to the spacing issue, and the 2.7 miles would be more of a departure from the most recent stations added, that is, 35th Street in 2011 with a 9.8-mile gap and Romeoville in 2018 with a 7.6-mile gap. Table 2-7 also includes weekday boardings, which indicates a wide range of performance. Three of Metra's most lightly-used stations are included (Belmont Avenue, Rosemont and Schiller Park) as well at the single busiest station on the Metra network outside of downtown Chicago (i.e., Route 59 with 5,781 boardings).

Table 2-7: Infill Metra Stations Added since 1983

Station	Line	Mile Post	Opening Year	Distance to Next IB Station	Distance to Next OB Station	Gap Filled	2016 Boardings
Palos Heights	SWS	19.2	2004	1.0	1.1	2.1	238
Rosemont	NCS	15.6	2006	0.8	1.5	2.3	35
Schiller Park	NCS	14.8	2006	1.8	0.8	2.6	36
Lake Cook Road	MD-N	23.0	1996	1.9	1.2	3.1	1,271
Belmont Ave./Franklin Park	NCS	13.0	2006	1.6	1.8	3.4	32
Glen of North Glenview	MD-N	18.8	2001	1.4	2.3	3.7	1,070
Hickory Creek	RID	27.5	1993	2.4	2.1	4.5	999
Pingree Road	UP-NW	41.7	2005	3.1	1.5	4.6	751
Washington St./Grayslake	NCS	43.9	2006	3.2	2.0	5.2	110
Prairie Crossing/Libertyville	MD-N	39.2	2004	3.7	1.8	5.5	422
Romeoville	HC	29.2	2018	3.9	3.7	7.6	n/a
Route 59	BNSF	31.6	1989	3.1	5.9	9.0	5,781
35th St.	RID	3.1	2011	3.1	6.7	9.8	227

2.5 Conclusions Applied to Niles

This review concludes that based on the resultant spacing of a Niles station alone, there is no reason that this initiative cannot be considered. The factors leading to this conclusion include the following:

- Published guidelines suggest that commuter rail stations should be comparatively widely spaced (e.g., more than 3 miles). This is a reasonable parameter to follow if a downtown-destined service is being developed from scratch. But for the Niles situation, where parking is constrained at nearby stations and the opportunity to serve destinations is present, the consideration for a more closely spaced station appears viable.
- The experience of larger, legacy commuter rail systems shows comparatively close spacing of stations, many with averages falling below three miles. Metra is consistent with this, with average spacing of about two miles, including 83 stations within one mile of the next inbound station.
- Based on Metra system data, there is not a clear correlation that closer spacing results in lower station ridership.
- New stations that have been added to the Metra network have filled gaps ranging from 2.1 to 11.9 miles, and there has not been an obvious effect on performance related to the distance between stations that were filled. It is acknowledged that Metra's most recent examples of adding infill stations have filled wider gaps (e.g., Romeoville at 7.6 and 35th Street at 9.8), compared to the gap between Edgebrook and Morton Grove of 2.7 miles.
- The addition of another station on the MD-N line will result in increased travel times for some current upstream riders due to the dwell time required at the station for each stop (approximately two minutes). These impacts will need to be carefully evaluated, and considered in the context of new Metra riders that the station could attract.
- The availability of parking is an important component provided at Metra stations, and needs to be included in the Niles station design plans. But accommodations for walk access and egress can also be an important consideration in attracting ridership to the station. This walkability goes hand-in-hand with developing the station area to maximize the use of transit. Further, opportunities to create destinations that would be accessible by commuter rail should be fully explored. The success of the Lake Cook Road Shuttle Bug program offers evidence that station area workers are willing to use connecting bus service.

In sum, while station spacing can be an important element to the success of a potential commuter rail station and guidelines generally recommend wider spacing than the expected 1.3 miles at the potential Niles station, this analysis shows that spacing alone does not determine ridership performance. Service levels, station amenities, and the size of the potential ridership market are likely to be deciding factors in the feasibility of an infill station between Morton Grove and Edgebrook.

3. Existing Conditions and Market Assessment

3.1 Introduction

This chapter lays the groundwork for the consideration of adding an infill station to Metra's MD-N line in Niles by describing existing and future conditions of the area surrounding the potential station site. This area will be defined and analyzed in two ways:

1. The larger market shed that represents the potential capture market of originating and destination users, and
2. The half-mile immediate station area.

The chapter will cover the following areas:

- Background and purpose of a potential station
- Regional setting of the proposed station
- Screening of alternative Niles station sites
- Definition of the station's market sheds, both origin and destination
- Socioeconomics and market trends of the station market shed and half-mile area
- Transportation resources in area
- Area travel patterns
- Nearby land use, zoning, and potential for development/redevelopment
- Identification of major travel generators, including largest area employers, cultural attractions, and shopping areas
- Environmental screening
- Development market capacity
- Land acquisition and potential displacement
- Conflicting land uses or other considerations

3.2 Background and Station Purpose

The Village of Niles is one of the largest communities in the Chicagoland area without a commuter rail station. Residents are forced to use stations in nearby communities, which are beyond practical walking or biking distance, and nearby stations have limited parking availability. Persons traveling to destinations in Niles, including work locations, also do not have the option of commuter rail from points south in Chicago or north in North Cook and Lake Counties. The *Niles 2030 Comprehensive Plan* noted the Village's lack of a downtown center, compromising the potential for a strong sense of community, image, and identity. The notion for considering a station was an outgrowth of the Touhy Triangle Master Plan completed in November 2016. A graphic from the Plan is included in Figure 3-1.

Figure 3-1: Touhy Triangle Master Plan – Potential Station Map

The Plan documented the Touhy Triangle study area's proximity to the MD-N, the absence of a commuter rail station in Niles, and the plan area's central location between two existing Metra stations (Morton Grove and Edgebrook). This observation led to the preparation of a transit-oriented development (TOD) approach to the re-development of the northeast portion of the Touhy Triangle. It was felt that a residential focus on this portion of the Triangle (i.e., without the inclusion of rail-adjacent industrial development) would be most appropriate to benefit the proposed entertainment district to the west and a commuter rail station to the east.

3.3 Regional Setting

The Village of Niles is located in Cook County, and shares borders with the City of Chicago, the Village of Skokie, Village of Glenview, Village of Morton Grove and the City of Des Plaines. Though the population of Niles is lower than some of its suburban neighbors (29,617 in 2016, compared to 64,270 in Skokie, 47,475 in Glenview, and 23,227 in Morton Grove (US Census Bureau)), it boasts a strong commercial and industrial sector that brings commuters into the Village. As previously mentioned, the communities bordering the Village of Niles contain either Metra or CTA stations. The Village is located between I-90 and I-94, approximately 14 miles from downtown Chicago (Figure 3-2).

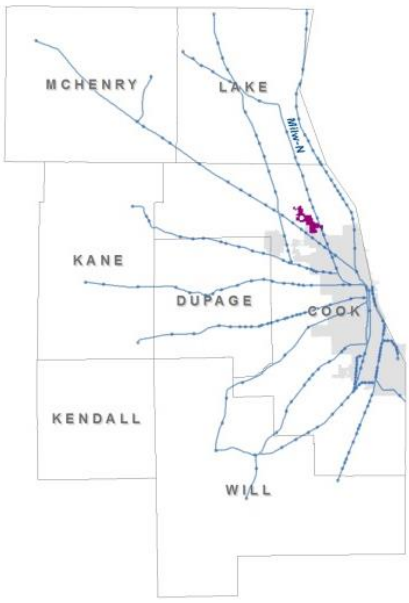
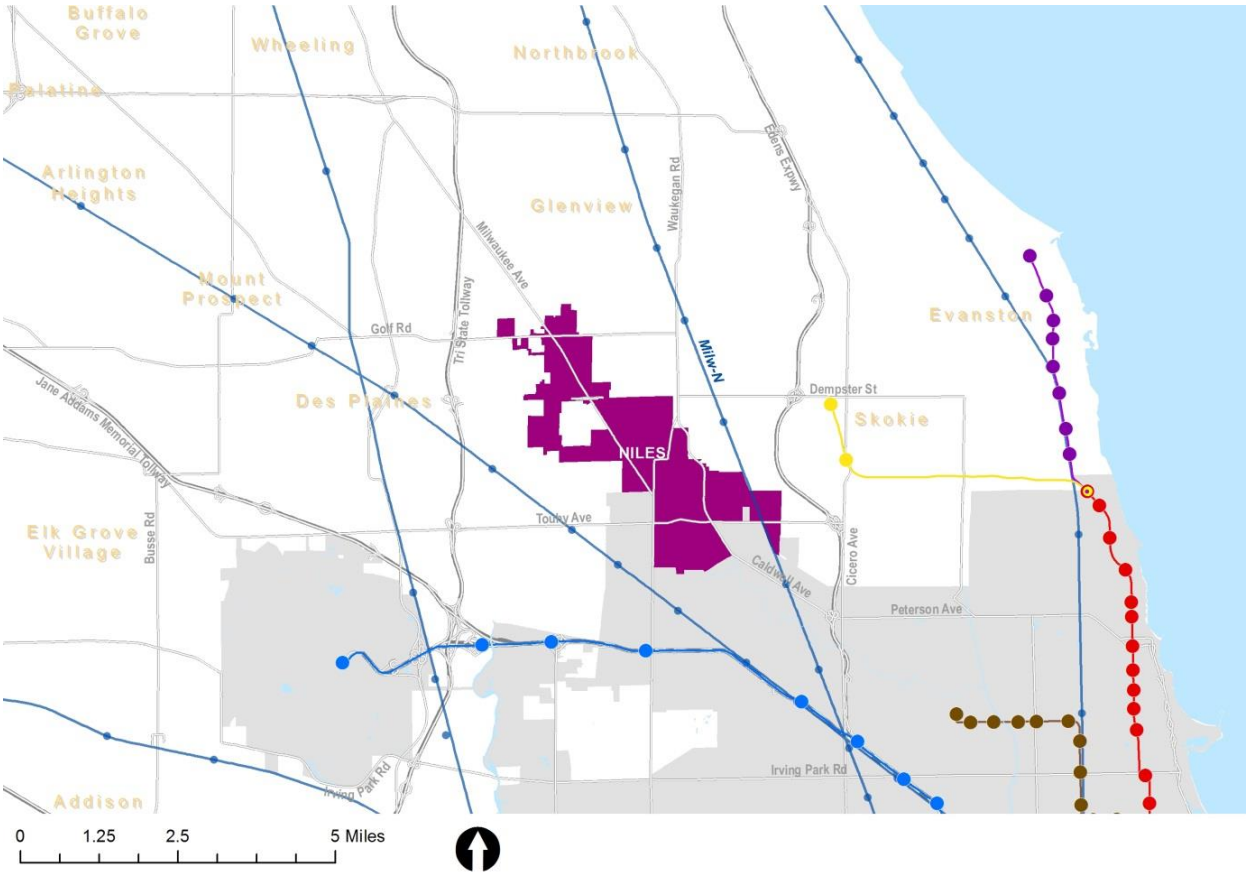


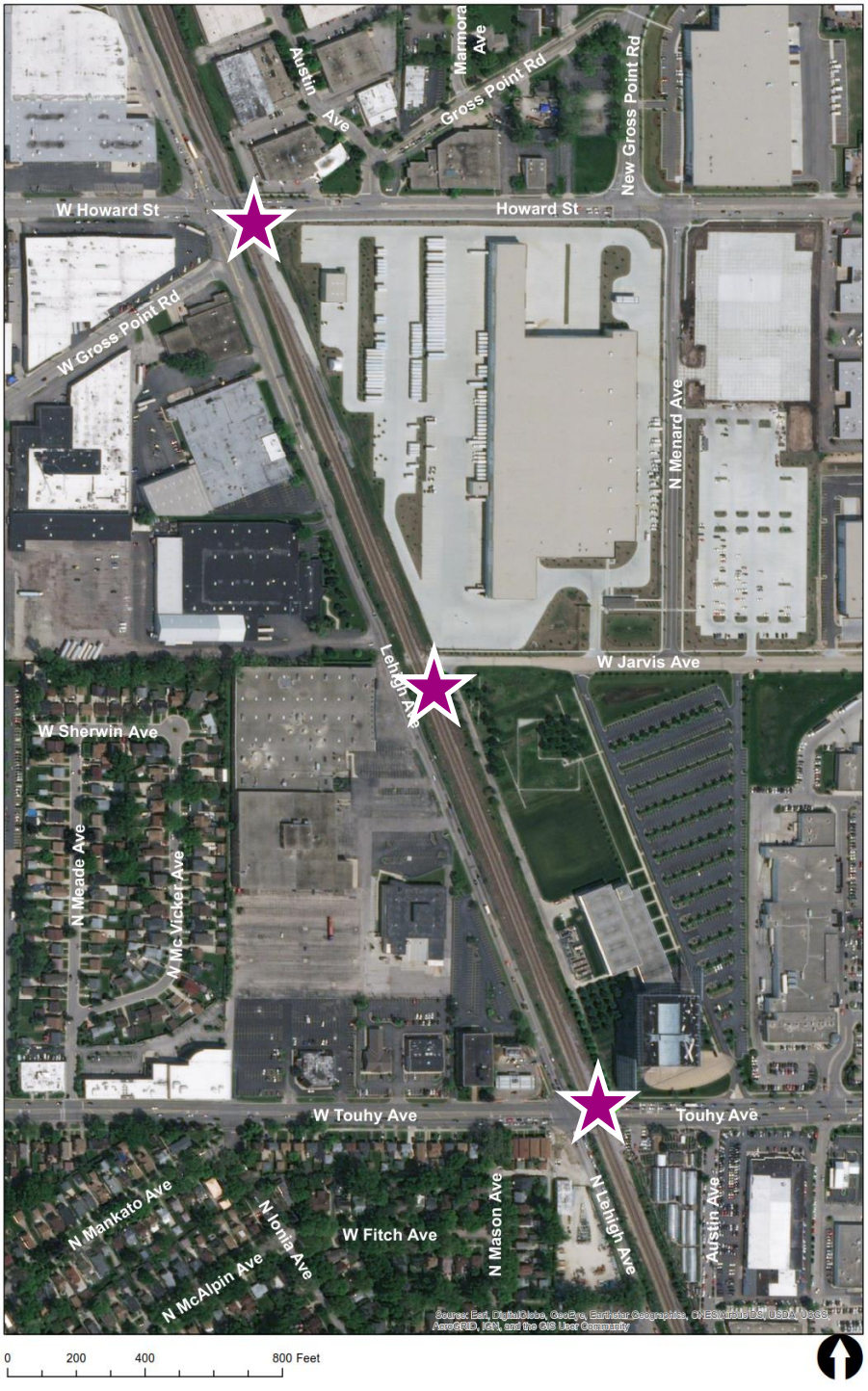
Figure 3-2: Niles Regional Setting Map



3.4 Station Site Screening

The Touhy Triangle study assumed that a new Niles MD-N station would be located between Howard Street and Touhy Avenue, which includes a segment of the MD-N that the Village of Niles has jurisdiction on both sides of the rail line. Three potential locations were identified: south-side of Howard, north-side of Touhy, and a location between these points, where Jarvis Avenue dead-ends on the east-side of the MD-N tracks. An aerial photo of the three locations is shown on Figure 3-3.

Figure 3-3: Possible Niles Station Locations



3.4.1 Station Spacing

As noted in Chapter 2. Station Spacing, while commuter rail guidelines generally recommend wider spacing than the expected 1.3 miles for the potential Niles infill station, this proximity to existing stations should not necessarily be viewed as a limiting factor in ridership performance. Service levels, station amenities, and the size of the potential ridership market are likely to be deciding factors in the feasibility of an infill station between Morton Grove and Edgebrook.

Table 3-1 shows the distances of the possible Niles station sites relative to the Morton Grove and Edgebrook Stations. The Jarvis site is nearest to the midpoint of the two existing stations.

Table 3-1: Alternative Niles Station Site Comparative Distances (in miles)

	Distance to:		
Station	Union Station	Morton Grove	Edgebrook
Morton Grove	**14.30**	**0.00**	**2.70**
Howard Street	13.12	1.18	1.52
midpoint	*12.95*	*1.35*	1.35
Jarvis Avenue	12.85	1.45	1.25
Touhy Avenue	12.58	1.72	0.98
Edgebrook	**11.60**	**2.70**	**0.00**

3.4.2 Site Evaluation

A screening of the three alternative sites was conducted to decide which should be carried forward for more detailed analysis. The screening considered the following factors:

- **Station Building Location |** The placement of the station's primary waiting area (i.e., depot or warming shelter) can be on the west-side or east-side of the railroad tracks. Metra's preference is that it be located on the inbound or west side, assuming that the majority of passengers waiting for a train and needing shelter from the weather would be boarding inbound trains in the morning. To the extent that the proposed station could also serve local passengers destined for points north, sheltered space would also be needed on the east platform.
- **Space for Parking |** The analysis of rider demand in 5.4 provides insight on the number of boarding passengers who will be expected to use park-and-ride facilities, which will serve as the basis for determining parking capacity and required land. The footprint for parking will vary depending on whether the parking is provided in surface lots, on-street, or in structures. For this initial screening, it was assumed that 500 spaces and 5 acres would be needed, based on parking capacity at similar Metra stations. Parking on both sides of the rail right-of-way was viewed as important, since riders would be originating from both east and west of the rail line.
- **Pedestrian Track Crossing |** Metra has indicated that pedestrians would be required to cross tracks using a tunnel, unless the station is adjacent to an at-grade roadway crossing.
- **Platforms |** Two low-level side platforms that would accommodate eight rail coaches were assumed, each involving a length of 635 feet.
- **Development Potential |** Ideally, station sites would have developable land nearby to realize the benefits associated with transit-oriented development (TOD).
- **Potential Traffic Impacts |** To the extent possible, a Niles station should strive to minimize the impacts on local vehicular traffic.

Table 3-2 evaluates the three locations according to six factors. As is shown, the Jarvis site offers the best conditions for a new station and was recommended to advance. The Howard and Touhy sites were dropped from further study.

Table 3-2: Alternative Station Site Evaluation Matrix

Boarding Station	South of Howard	Jarvis	North of Touhy
Station Building (west)	feasible w/ realignment of Gross Point	feasible	feasible w/ realignment of Lehigh
Parking East of RR	not feasible	feasible	not feasible
Parking West of RR	feasible w/ Triangle Redevelopment	feasible w/ Triangle Redevelopment	feasible w/ Triangle Redevelopment
Ped Crossing	potential to use Howard crossing	tunnel	potential to use Touhy crossing
Development Potential	limited on west side, none east	strong on west side	limited on west side, none east
Traffic Impacts	issues with Howard-Lehigh-Gross Point intersection at RR crossing	manageable	issues with Touhy-Lehigh intersection at RR crossing

3.5 Definition of Station Market Sheds

Users of a proposed Niles station would be either: (1) area residents accessing the MD-N to travel to downtown Chicago or other destinations served by the line, or (2) persons originating from other stations on the line traveling to destinations in the area served by a Niles Station. A key step in estimating demand for the proposed Niles station is to define the area that residents would be drawn from, representing a catchment area for originating riders of the station. A second area must also be determined for riders alighting at the station to reach their trip destinations. Passenger trip data from Metra describes riders traveling during the weekday AM period (i.e., before noon), and as such, they are assumed to be originating their use of Metra. Travel during the PM is assumed to be the rider's return trip for the day.

3.5.1 Rider Origin Market

The Niles station market shed was based on the unique area that is nearest to the Niles station site in relation to other Metra stations. The area was shifted slightly upstream to better reflect typical passenger behavior, specifically the disinclination to travel "backward," that is, in the opposite direction of travel, to board a nearer station (Figure 3-4). This market area results in a reasonable degree of correlation with station rider origins—though no methodology perfectly models human travel behavior (see Figure 3-5). The potential Niles station market shed as defined here was used in all subsequent analysis of the origin market. It should be noted that the CTA Yellow Line Oakton Station is within the Niles origin market shed. During the AM peak period, travel times from the Oakton Station to downtown (defined here as Chicago Union Station) are just over one hour using CTA rapid transit, 70 minutes driving under typical congestion conditions, and 34 minutes by MD-N from the proposed Niles station. Thus, there are alternatives within the market shed, though it is reasonable to expect market segmentation due to the differences in travel times, fares, and other factors between CTA and Metra. An analysis of the impact a Metra Niles station could have on Yellow Line ridership is addressed below in Chapter 5 Travel Demand and Operations Impacts.

Figure 3-4: Distance-based Market Sheds, Shifted Upstream

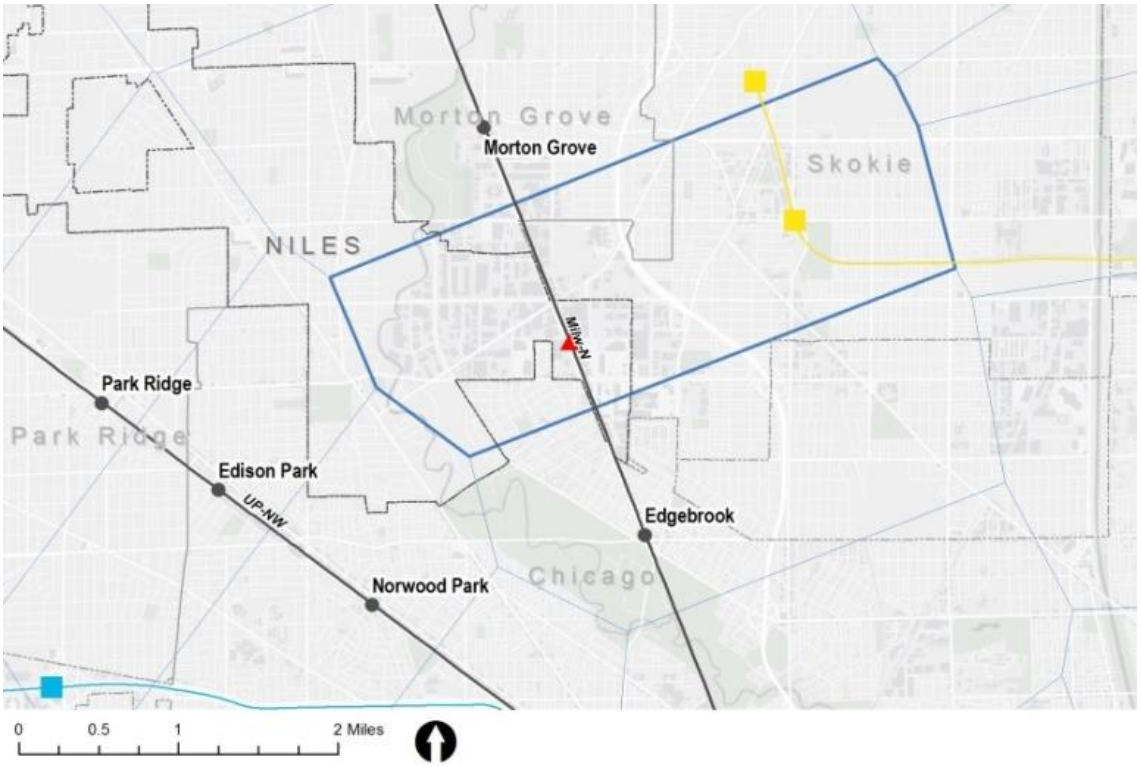
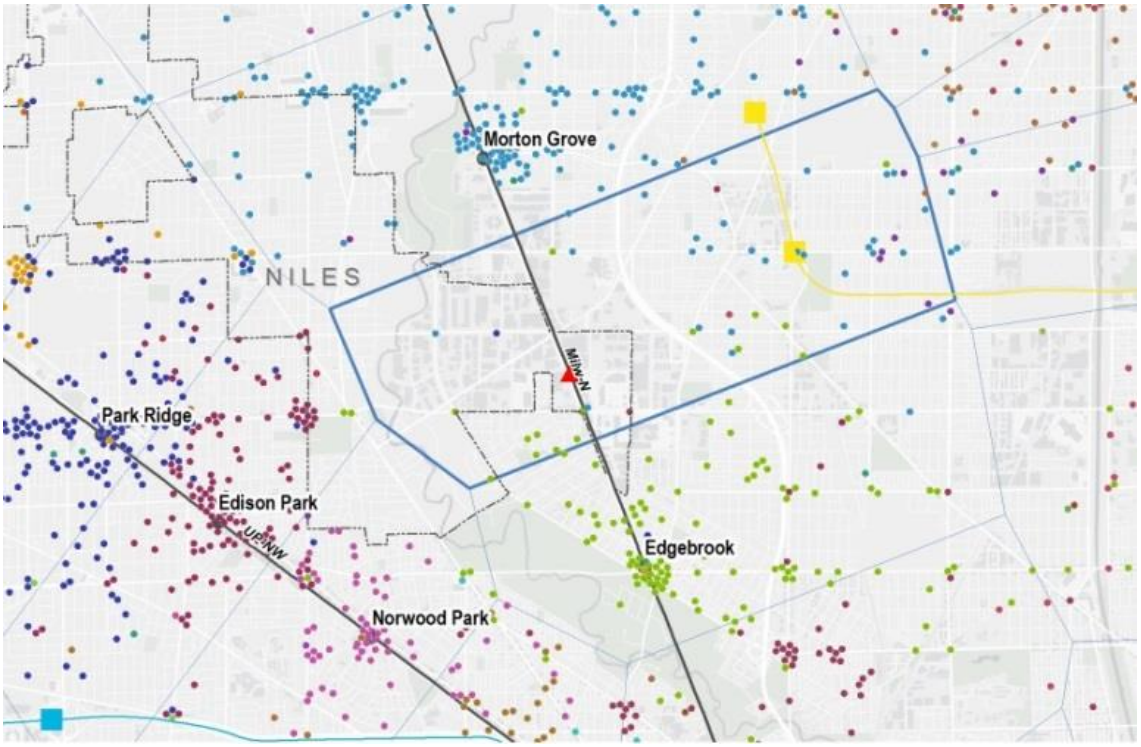


Figure 3-5: Market Sheds with 2016 Origins by Boarding Station



Based on 2016 data from Metra, 185 originating riders (“origins”) are located within the proposed Niles station market shed. Fifty-two percent of these board the Morton Grove Station and 29 percent board the Edgebrook Station. Nearly all origins access the station via automobile, with 75 percent driving alone, 20 percent being dropped off, and 2 percent carpooling; the remainder travel by bicycle (Table 3-3).

Table 3-3: Metra Origin Riders in Niles Market Shed by Station of Use

Boarding Station	Rail Line	Weighted Origins	% of Total
Morton Grove	MD-N	97	52%
Edgebrook	MD-N	54	29%
Main St., Evanston	UP-N	15	8%
Forest Glen	MD-N	7	4%
Park Ridge	UP-NW	4	2%
Rogers Park	UP-N	4	2%
Davis St., Evanston	UP-N	4	2%
Total		**185**	**100%**

Data source: Metra Origin-Destination Survey, 2016.

A heat map of the origins for the potential Niles station and nearby stations is provided in Figure 3-6, illustrating that many of the existing riders within the Niles market area are either on the east side of the Eden's Expressway or in the City of Chicago. Table 3-4 highlights that 70 percent of origins within the Niles station market shed reside in Skokie, while 14% reside in Chicago and 10 percent in Niles. For context, Table 3-5 shows the market shed breakdown of acres and population by municipality. This underscores the fact that—as discussed in greater detail in the next section—the area surrounding the potential Niles station currently has few residential land uses and thus the existing nearby built environment does not support the traditional commuter rail demand pattern of work trips downtown.

Figure 3-6: Density of 2016 Metra Rider Origins (0-3 riders per acre)

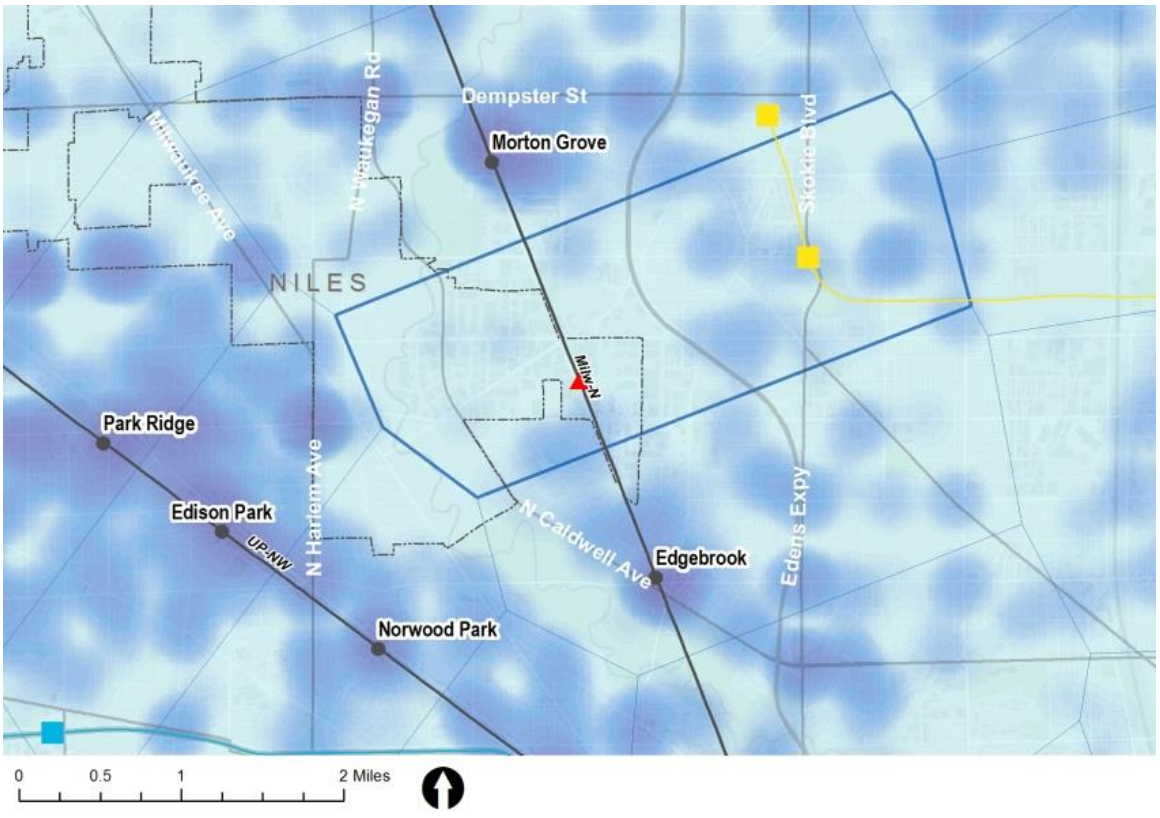


Table 3-4: Metra Origin Riders in Niles Station Market Shed by Municipality

Origin Municipality	Weighted Origins	% of Total
Skokie	130	70%
Chicago	25	14%
Niles	19	10%
Morton Grove	11	6%
Total	**185**	**100%**

Data source: Metra Origin-Destination Survey, 2016.

Table 3-5: Composition of Municipal Acreage and Population for Niles Market Shed

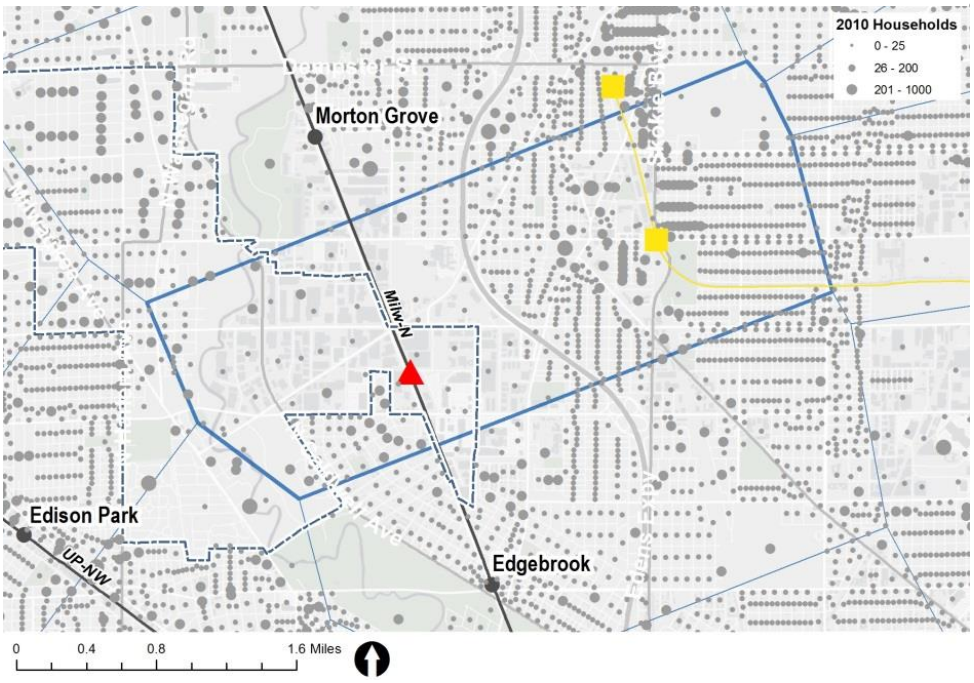
Municipality	Acres	Population	% Acres	% Pop.
Chicago	162	1,887	5%	7%
Morton Grove	303	2,040	9%	8%
Niles	916	1,992	28%	8%
Skokie	1,834	20,154	57%	77%
Total	**3,214**	**26,072**	**100%**	**100%**

Data source: Esri Business Analyst, based on U.S. Census ACS 2016 data.

3.5.1.1 Socioeconomic

Using 2010 US Census data, one can tabulate the number of people in households within the proposed market shed: roughly 26,000 people and 10,000 households (see Figure 3-7). To understand more recent conditions, Esri Business Analyst 2016 data (based on Census American Community Survey data) indicates that there are approximately 29,000 people, and 11,000 households with a median household income of $74,000 (weighted by household count). Given the number of people and local averages of per capita income, this converts to roughly $940 million in aggregate income each year. This high level of income may translate to greater demand for higher-end (and thus more profitable) development in the Niles station area. The local labor force totals about 14,000.

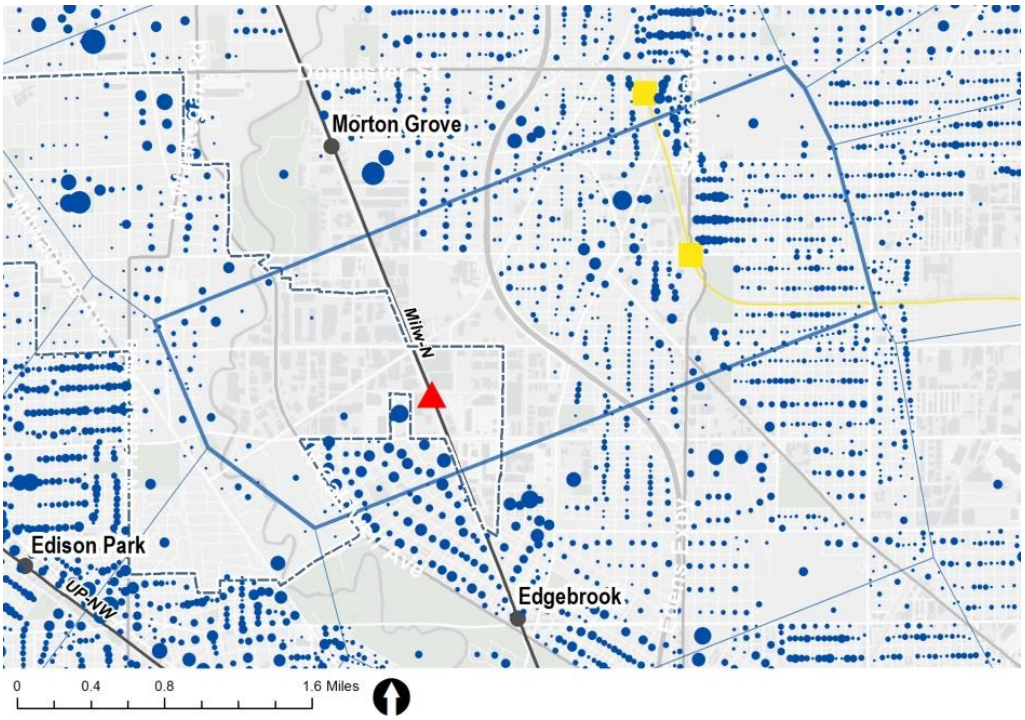
Figure 3-7: Households by Census Block (2010)



Data source: US Census (2010)

Based on analysis of 2015 Census Longitudinal Employer-Household Dynamics (LEHD) origin-destination data, there are 1,960 central business district (CBD) workers living within the potential Niles market shed. The distribution and density of these workers is shown in Figure 3-8. For reference, this figure is 2,670 CBD workers for the adjacent MD-N Morton Grove shed and 2,210 CBD workers for Edgebrook (using the market sheds described in this document).

Figure 3-8: CBD Workers per acre (2015)

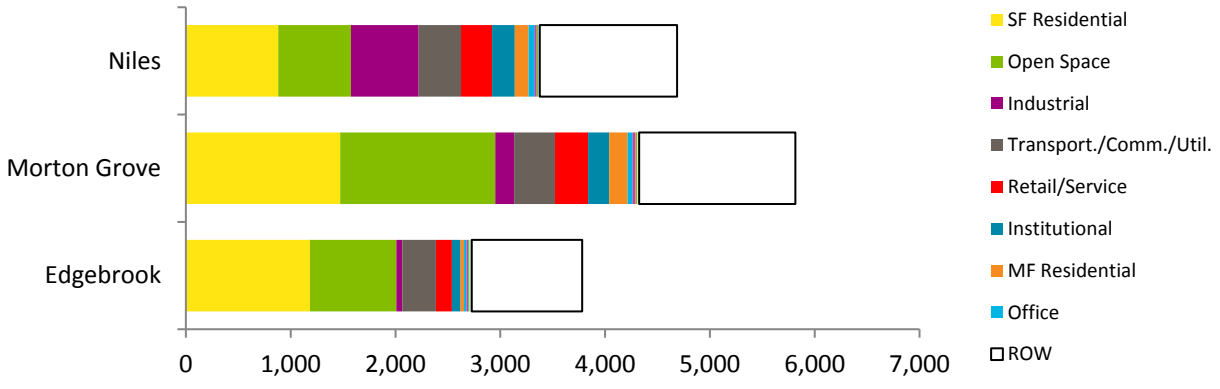


Data source: LEHD (2015)

3.5.1.2 Land Use

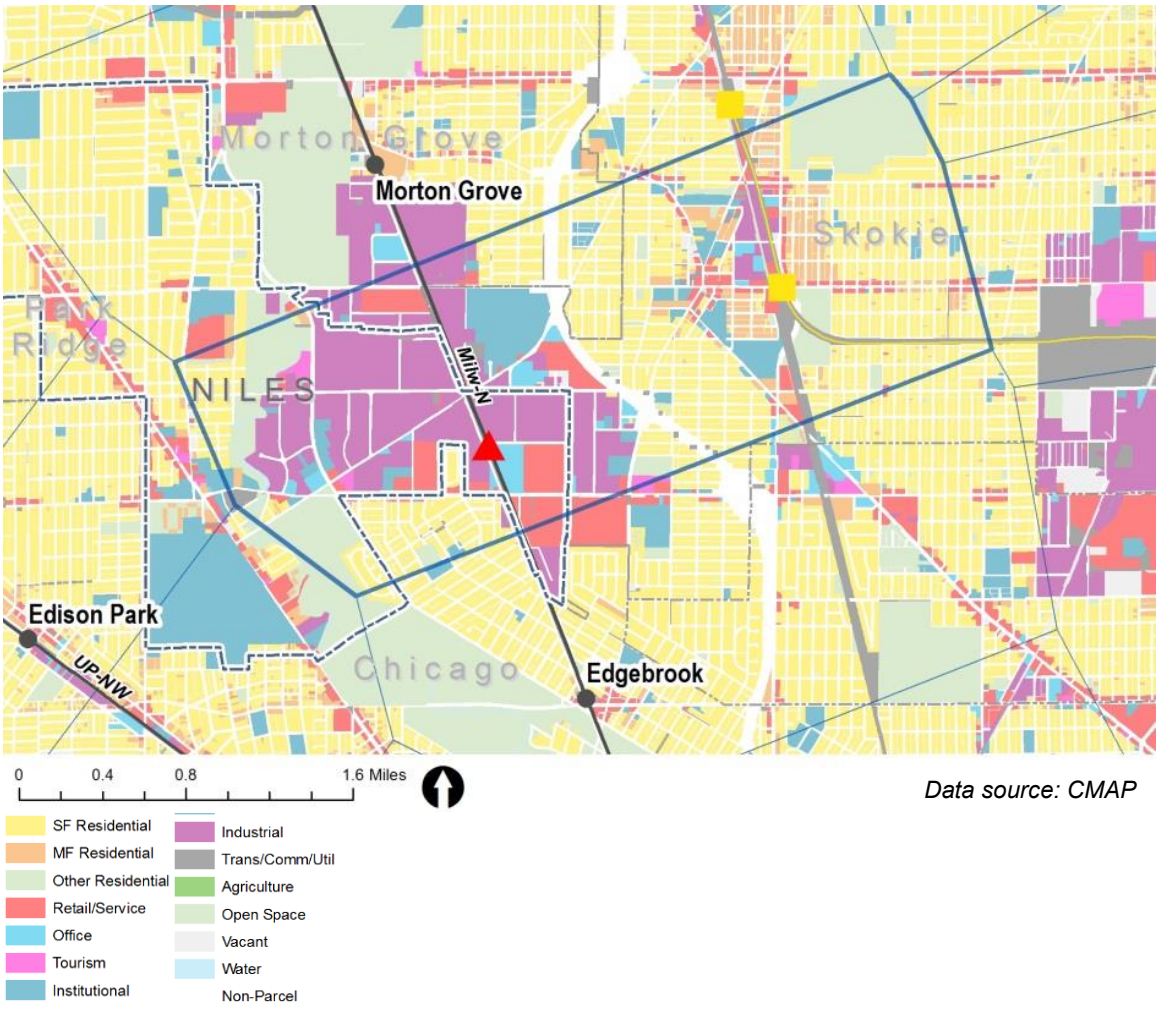
As noted above and illustrated in Figure 3-10, the potential Niles station is situated in what is currently a primarily non-residential area. Of the parcel acreage in the market shed, 19% is industrial land use, compared to 2% and 4% for the adjacent MD-N market areas of Edgebrook and Morton Grove. The largest share is single-family residential (26%) followed by Open Space (21%), both lower than adjacent peers. The Niles station market shed has a higher proportion of multifamily (4%) than Edgebrook (2%), but comparable to Morton Grove. Office and institutional acreage shares are also slightly higher. See also Figure 3-9 and Table 3-6.

Figure 3-9: Distribution of Land Use Acreage of Niles and Adjacent MD-N Stations



Source: CMAP

Figure 3-10: Land Use (2013)



Data source: CMAP

Table 3-6: Land Use Acreage of Niles and Adjacent MD-N Stations

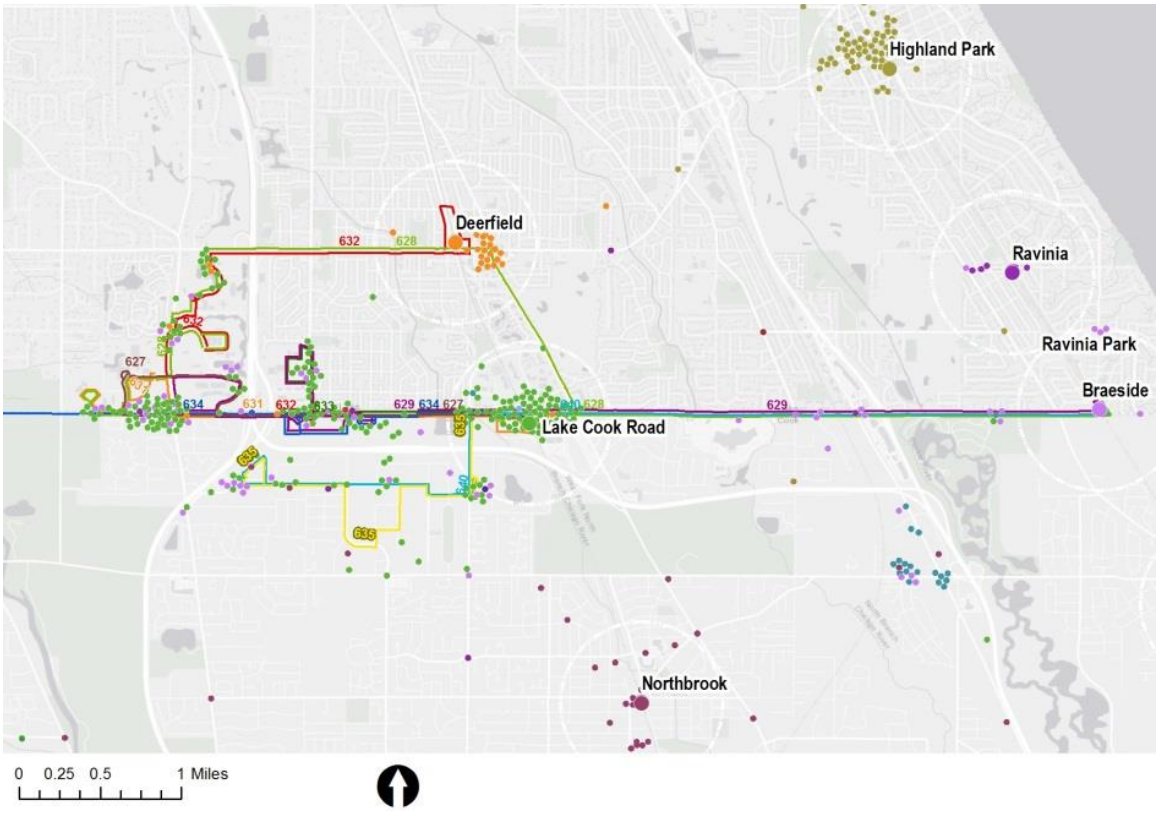
Land Use	Edgebrook	Morton Grove	Niles
Single-Family Residential	1,184	1,473	881
Open Space	824	1,479	693
Industrial	57	181	646
Transport./Comm./Util.	320	388	406
Retail/Service	153	317	295
Institutional	83	201	218
Multi-Family Residential	33	176	130
Office	25	48	60
Tourism	13	26	18
Res. Open Space	9	17	14
Water	12	1	9
Vacant	15	18	7
Right-of-Way	1,053	1,490	1,309
Total	**3,780**	**5,815**	**4,686**

Data Source: CMAP

3.5.2 Rider Destination Market

The typical destination market area of a rail station is the distance one can easily walk in about ten minutes—usually a half mile. However, several suburban Metra stations in the Chicago area are served by distributor buses that are run by either Pace or private employers; these buses can transport workers from their train to places of employment or other destinations. A well-known example of this is Lake Cook Road Station, as illustrated in Figure 3-11, which has numerous distributor buses to make connections to office parks near I-94 and I-294. As successful as these Pace "Shuttle Bug" routes have been, this approach is not easily replicated, as it requires relatively high employment densities and active employer engagement.

Figure 3-11: 2016 Metra Destinations & Distributor Shuttle Routes



Data source: Metra Origin-Destination Survey (2016)

Analysis of the 2016 non-downtown destination locations was conducted to better understand how far riders were able or willing to travel by connecting Pace bus or private shuttle, based on straight line distances. After removing outliers beyond the 90th percentile of straight-line distance by mode of egress, the system wide weighted average was 2.3 miles for Pace bus and 1.9 miles for private shuttle (Table 3-7). Among this filtered destination dataset, 18% of destinations were reached by Pace bus or private shuttle, while walk access accounted for 53%.

Narrowing the data down to suburban stations similar to the potential Niles station (i.e., located within suburban fare zones B-D), the average distance traveled to a work or destination location from a primarily non-residential station was about the same for Pace bus (roughly 2.4 miles). Distances varied more greatly for egress by walking (0.3 miles at residential locations versus 0.6 at non-residential) and egress by private shuttle (2.3 miles at residential locations versus 1.3 miles at non-residential). Bike distances are consistently around one mile. Pace bus trips are more common in non-residential locations (13% versus 7% of trips), and walk trips are more common in residential locations (64% versus 53%). Otherwise the proportions are similar.

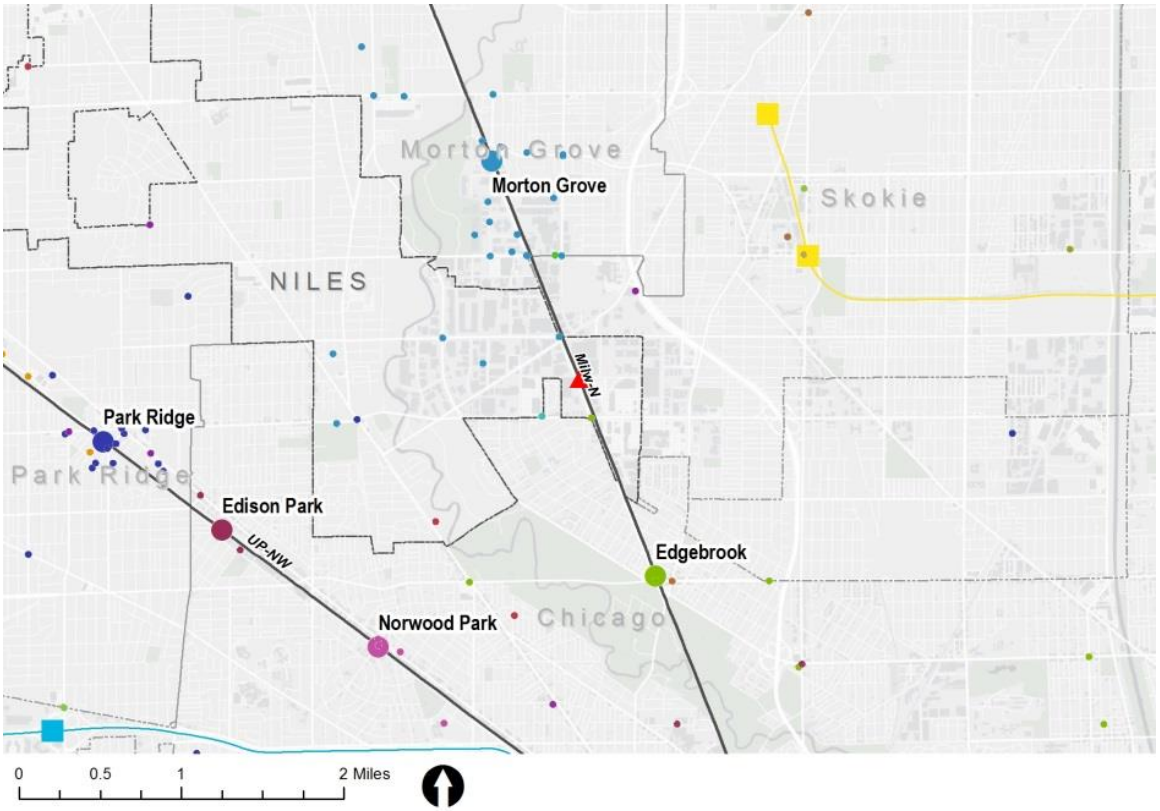
Table 3-7: Distance to Destination by Mode of Egress and Metra Station Category

Mode	System	Residential Suburb Zone B-D	Non-Residential Suburb Zone B-D
Walk	0.5	0.3	0.6
Bicycle	1.2	1.0	1.1
Pace Bus	2.3	2.3	2.4
Private Shuttle	1.9	2.3	1.3

Data source: Metra Origin-Destination Survey (2016). Values rounded to nearest decimal.

The distribution of destinations in the vicinity of the potential Niles station, as recorded in the 2016 Metra Origin-Destination Survey, is shown in Figure 3-12. There are few current riders heading for destinations in the industrial area of the potential Niles station, likely due in part to the absence of a station nearby.

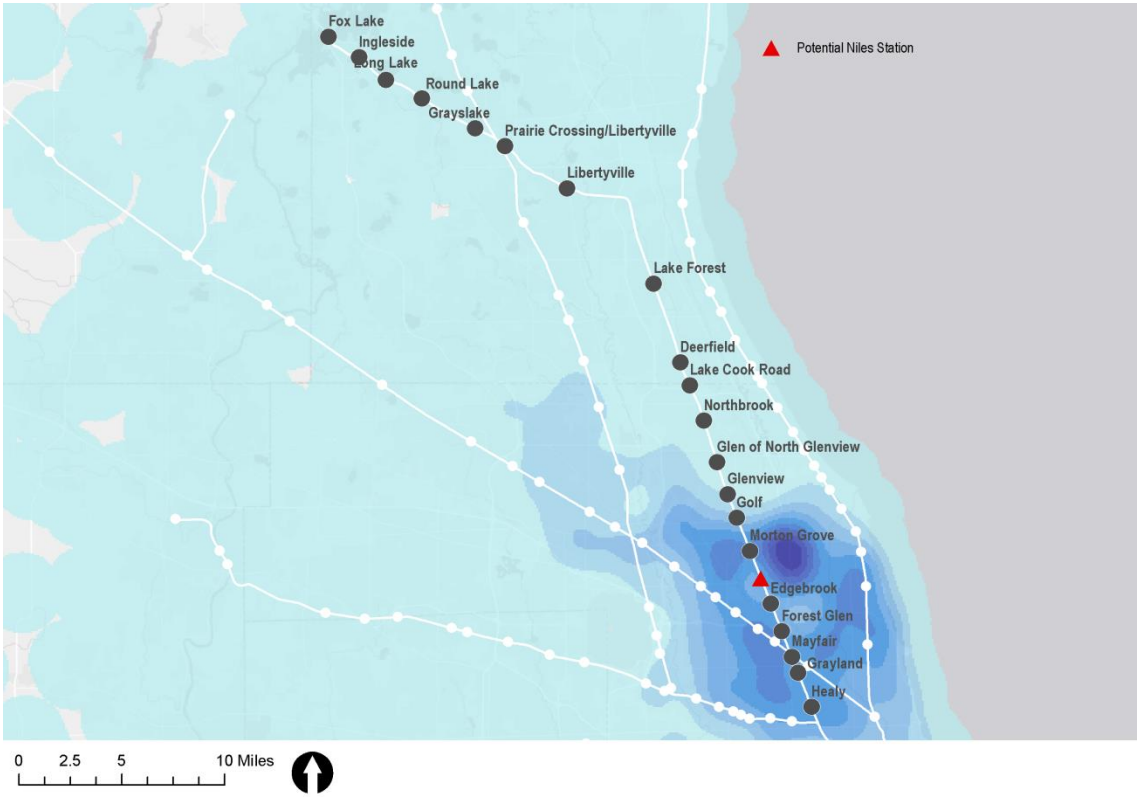
Figure 3-12: 2016 Metra Destinations



Data source: Metra Origin-Destination Survey (2016)

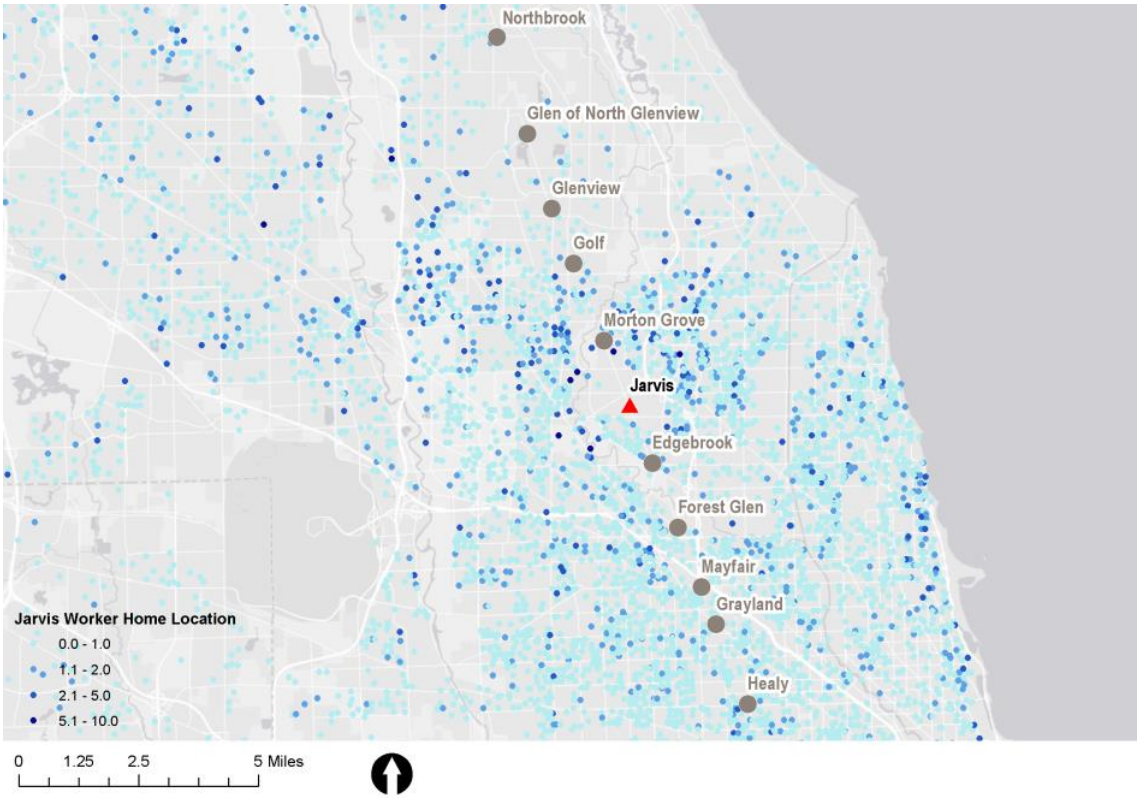
To better understand the potential for a destination market, Figure 3-13 uses LEHD data to illustrate the home location of people working within a half mile of the potential Niles station. Of these 7,180 workers, nearly half (3,500) are living in the market shed of an existing MD-N station. Of these 3,500 workers, 44% live upstream on the line (Morton Grove to Fox Lake) and the remaining 56% live downstream (Edgebrook to the CBD). A more detailed representation of the worker counts by census block is provided in Figure 3-14.

Figure 3-13: Density of Home Location of Potential Niles Station Area Workers



Data source: LEHD (2015)

Figure 3-14: Count of Home Location of Potential Niles Station Area Workers



Data source: LEHD (2015)

It is natural that workers living closer to the station would not use commuter rail to reach their workplace, choosing instead to walk, bus, bike, or drive. Of the 3,500 station area workers living in the existing MD-N market shed, 2,120 (61%) live at least four miles away—sufficiently distant to consider using Metra. If we increase the station area boundaries to include all workers working within one mile of the station and living within the MD-N shed at least 4 miles away, this figure increases by 1,540 workers (from 2,120 to 3,660, which is 62% of the total 5,880 workers living within the MD-N shed and working within a mile of the station). One mile covers the typical distance traversable by walking, biking or bus, as estimated from the 2016 Metra Origin-Destination survey data.

To aid in estimating the division of transit work commutes between adjacent Metra stations, the team developed destination sheds similar the methodology for the origin market sheds (i.e., nearest straight-line distance to station), but without the upstream shift to simulate typical rider access behavior. These destination polygons were then restricted to the one-mile radius, as depicted in Figure 3-15. Based on this analysis, there are 5,090 MD-N residents working in the Niles destination shed, compared to 2,500 for Morton Grove and 720 for Edgebrook, using LEHD 2015 data.

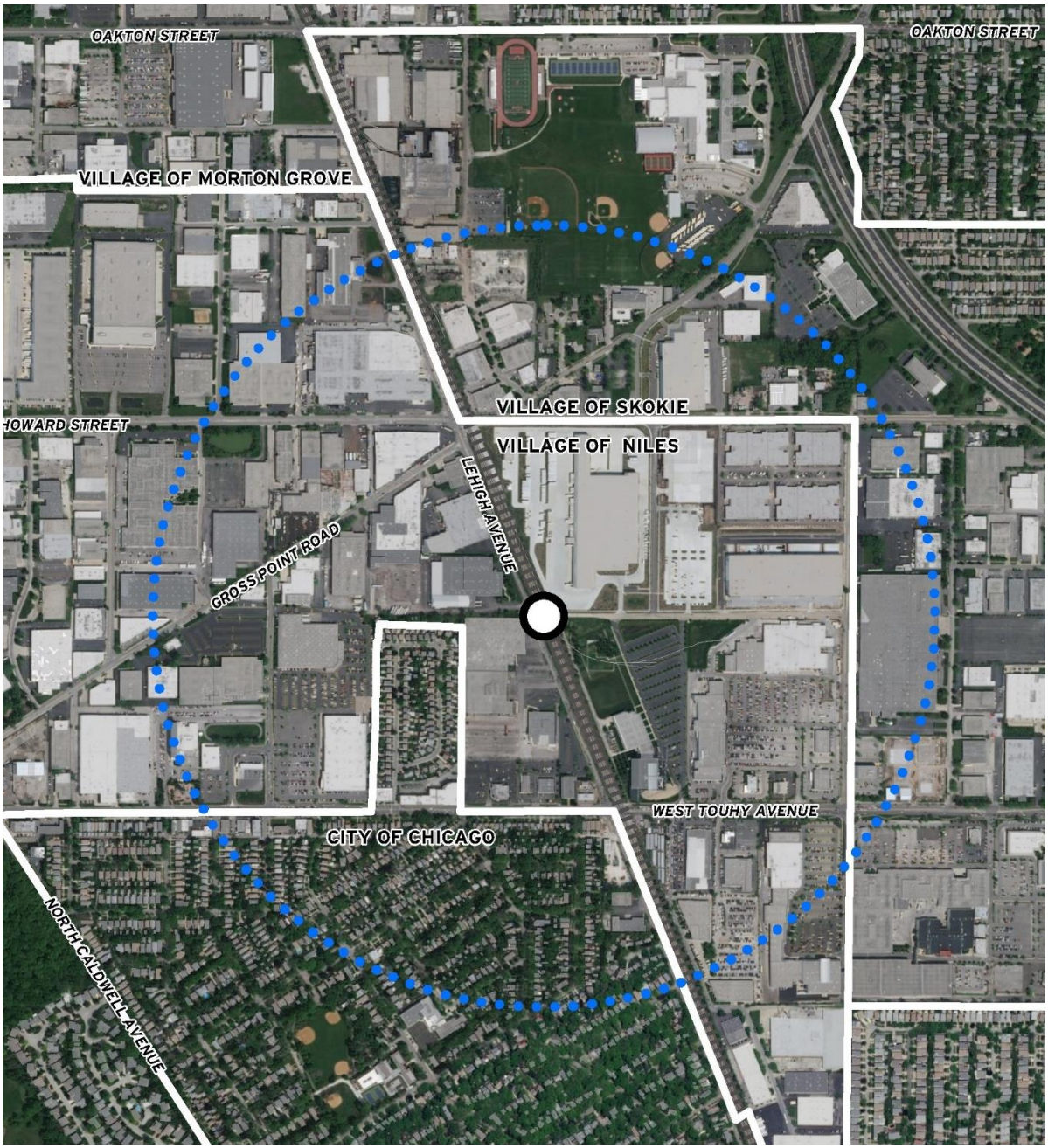
Figure 3-15: Non-Overlapping Destination Sheds

3.6 Station Area Characteristics

For the purpose of this Study, the Niles Metra Station Area has been identified as including areas within a half-mile radius of the intersection of Jarvis Avenue and the MD-N tracks (see Figure 3-16 below). The physical boundaries of this area are generally aligned with Linder Avenue to the east, Lunt Avenue to the south, Croname Road to the west, and Dahlin Drive to the north.

While the lands immediately surrounding the proposed station fall within the boundaries of the Village of Niles, the half-mile Station Area does include portions of the Village of Skokie and the City of Chicago.

Figure 3-16: Niles Metra Station Area (1/2 mile radius)



3.6.1 Land Use

The Station Area is generally dominated by larger-scaled land uses, including light industrial facilities and warehouses, major shopping centers, and office and school campuses. Most of these uses feature deep building setbacks and an auto-dependent pattern of development, resulting in a typically suburban character.

With the exception of residential uses, which are primarily small one- or two-unit homes, the average building footprint in the Station Area is roughly 35,000 square feet. However, a significant number of buildings vastly exceed this average, with footprints in excess of 150,000 square feet or more being quite common.

Table 3-8: Station Area Land Use Summary

Land Use (CMAP)	Area (acres)	% of Total
Residential	52.4	12.0%
Commercial	89.8	20.6%
Office	34.9	8.0%
Institutional	20.5	4.7%
Industrial	213.2	49.0%
Transportation/Utilities	22.4	5.2%
Vacant / Construction	2.1	0.5%
Common Open Space	0.6	0.1%
Total	**435.9**	**100%**

Source: CMAP

Industrial

As seen in Table 3-8 and Figure 3-17, industrial use is the prevailing land use classification, which is primarily made up of light manufacturing facilities and fabricators, wholesalers, warehouses, and distribution uses, totaling roughly 213 acres, or 49 percent of the Station Area. Though mostly limited to two- or three-stories, the typical building heights of the industrial uses tend to be taller than average due to the nature of the uses (i.e. warehousing and production). While some of the area's industrial properties have been redeveloped or significantly rehabbed in recent years, such as the new FedEx facility located immediately north of the proposed station, other buildings and uses have not been updated in decades and have become functionally obsolete. A notable example is the cluster of buildings located to the immediate west/northwest of the proposed station (bounded by Gross Point Road and Lehigh Avenue) that have been identified by the Village of Niles as having potential for redevelopment. The age of these buildings and their proximity to the proposed station is a key consideration in the Village's plans for the Touhy Triangle.

Commercial

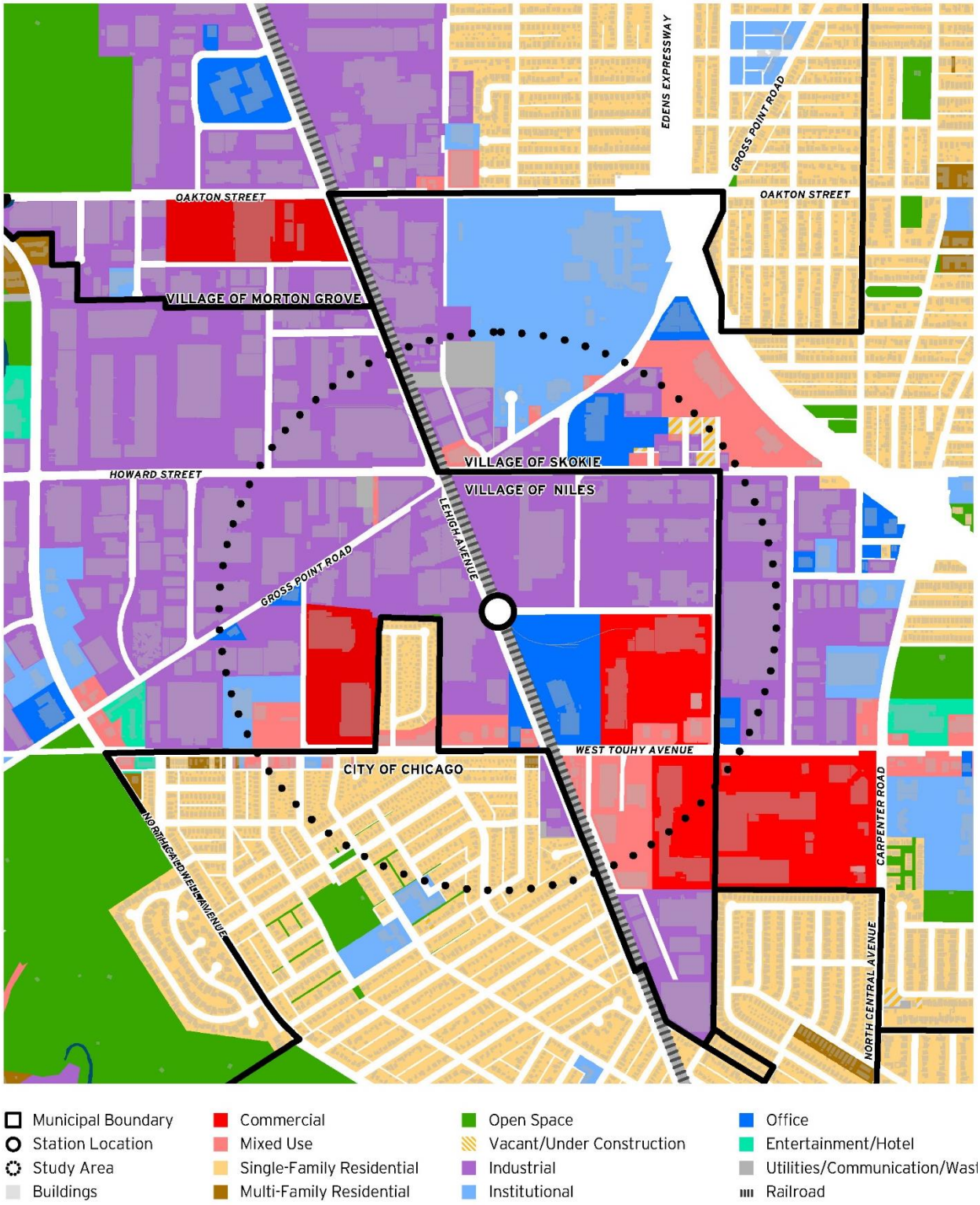
Commercial use is the second largest land use category within the Station Area (20.6 percent), and these uses are largely allocated in large destination retail centers along Touhy Avenue—including Pointe Plaza and Village Crossing to the southeast, and the Costco/Target shopping center located at the northeast corner of Melvina and Touhy Avenues. These shopping centers include a mix of major anchor tenants, in-line stores, and out-lot development; and provide a substantial contribution to the sales tax bases of Niles and Skokie. A mix of smaller scale commercial uses—including dining, and business and personal service establishments—also flank Touhy Avenue between the shopping centers.

Office

While there are only a handful of properties within the Station Area that are specifically classified as office use, these properties do represent a considerable amount of land (8 percent) and are important contributors to the local employment base. The Shure facility, located immediately southeast of the proposed station, is the most substantial office use in the area and will be a major beneficiary of efforts to build a new Metra station. At seven stories tall, with significant architectural elements, the building is a major focal point along the Touhy Corridor. It is anticipated that the

introduction of a new Metra station would increase demand for office use in the surrounding area and serve as a valuable transitional use.

Figure 3-17: Station Area Land Use Map



Data source: CMAP

Institutional

The two main institutional uses in the Station Area are the Leaning Tower YMCA and Niles West High School. The YMCA property is unique in that at ten stories, it is one of the taller buildings in the surrounding area, and it provides short-term residential units in addition to the social and recreational programs. While there are no specific plans to move or redevelop the facility at this time, it should be noted that the YMCA property does feature prominently in the Village's plans to redevelop the Touhy Triangle.

While only the southernmost portion of the Niles West High School campus is in the Station Area (athletic fields), the high school is an important local institution and center of activity for the community. According to the Illinois State Board of Education, the 2017 student enrollment was 2,486 and the school has 331 full-time equivalent teachers/faculty.

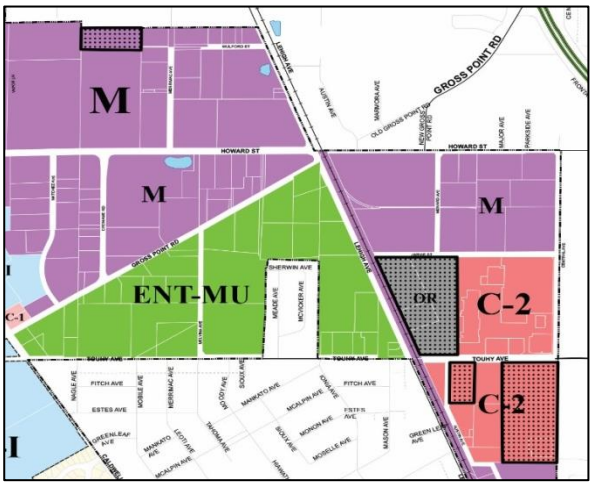
Residential

All residential land use within the Station Area is located to the south/southwest of the proposed station, within the City of Chicago's North Edgebrook neighborhood. These residential areas are almost entirely composed of well-established one- to two-story single-family homes that are unlikely to change in the foreseeable future. Following the adoption of the Touhy Triangle Master Plan, the Village of Niles has noted potential interest to redevelop portions of the Triangle as multi-family residential, but no formal proposals have emerged to date. Though located outside the Station Area, Downtown Skokie is an important population center located roughly one mile from the proposed station.

3.6.2 Zoning

Within Niles, the Station Area is generally split between Limited Industrial (M), Entertainment/Mixed-Use (ENT-MU), and General Commercial (C-2) zoning districts, with one exception being the Shure property (located along the MD-N Line between Jarvis Street and Touhy Avenue) that is specifically zoned for Office/Research (OR) use. These districts are generally intended to foster employment-oriented uses and include design/use standards that seek to minimize external impacts to the surrounding neighborhoods. One important distinction of the ENT-MU district is that it was specifically designed and adopted to facilitate the implementation of the Touhy Triangle Master Plan (Figure 3-18).

Figure 3-18: Village of Niles Zoning



The vast majority of Village of Skokie land within the Study Area is zoned for industrial use, primarily as Office Assembly Industry (M1) and Light Industry (M2) districts, and a small Industry (M3) area north of the proposed station along Lehigh Avenue. Non-industrial areas include the Village Crossing Shopping Center and some general commercial uses along Touhy Avenue, zoned Regional Shopping (B4) and Business (B3) respectively. The lone exception to industrial and commercial zoning within the Skokie's portions of the Station Area is the Niles West High School Campus, which is zoned as Single-Family (R2).

For the City of Chicago portions of the Station Area, the predominant zoning classification is Residential Single-Unit (RS-2), with only a handful of parcels along Touhy and Lehigh Avenues zoned for Business (B) or Commercial (C) use. The parcels zoned for B and C uses are also designated as 'Dash 1', which is the lowest level of bulk and density allowed under Chicago's zoning system.

3.6.3 Infrastructure and Utilities

Publicly owned and controlled water and storm sewer lines run along most of the public streets and right-of-way in the Station Area, providing adequate service to local home and businesses. This includes the Village-owned and -controlled pressurized water distribution mains (generally ranging from 10" to 12" in diameter) that run under Howard Street, Gross Point Road, Lehigh Avenue, Jarvis Avenue, and Touhy Avenue. According to Village of Niles data, the Jarvis Avenue distribution line (12" dia.) is located along the south side of the street and crosses through the MD-N right-of-way, where it connects with a 10" line under Lehigh Avenue.

Similar to water mains in the Station Area, storm sewer gravity mains run along most streets and right-of-way. With the exception of Touhy Avenue, which has a combined storm/sanitary gravity main line, the other lines are on a separated system. Most storm water mains are in the range of 10" to 12" in diameter, though there are a few exceptions, such as the dual storm water mains that run along Gross Point Road and range from 18" to 24" in diameter. Howard Street is another important utility corridor, which has both Village of Niles and Metropolitan Water Reclamation District (MWRD) gravity mains running within the public right-of-way.

Another major exception is the 48"-diameter storm sewer gravity main that runs along Jarvis, crosses through the railroad right-of-way, and proceeds west through the Touhy Triangle until it connects with the storm sewer lines under Gross Point Road. This line connects to another Village-controlled storm sewer line (24" diameter) that runs adjacent to the tracks along the west edge of the Shure property, before connecting to another storm drain on the north side of Touhy Avenue. The precise location and depth of these lines will need to be assessed in further detail before moving forward with any formal plans for station improvements. It should also be noted that the Village of Niles' plans for the Touhy Triangle include a new roadway connection west of Jarvis that would follow the general path of the 48" storm sewer line, providing an additional opportunity to examine and manage utility connections within the immediate vicinity of the proposed station.

Separate sanitary gravity mains also run along many of the public streets in the Station Area. This includes along the west side of Lehigh Avenue, and along the east side of the railroad right-of-way, north of Jarvis. Notably, there is no sanitary main under Jarvis Avenue.

Information on the location of gas, electric, and fiber/telecommunications will need to be obtained and analyzed before any formal improvements proceed.

3.6.4 Local Points of Interest

The accompanying map (Figure 3-19) shows some of the key attractions or points of interest within the Station Area, or near it. For the most part, these points of interests are privately owned or controlled, and generally fall into three categories: Commercial Destinations, Major Employers, and Local Institutions.

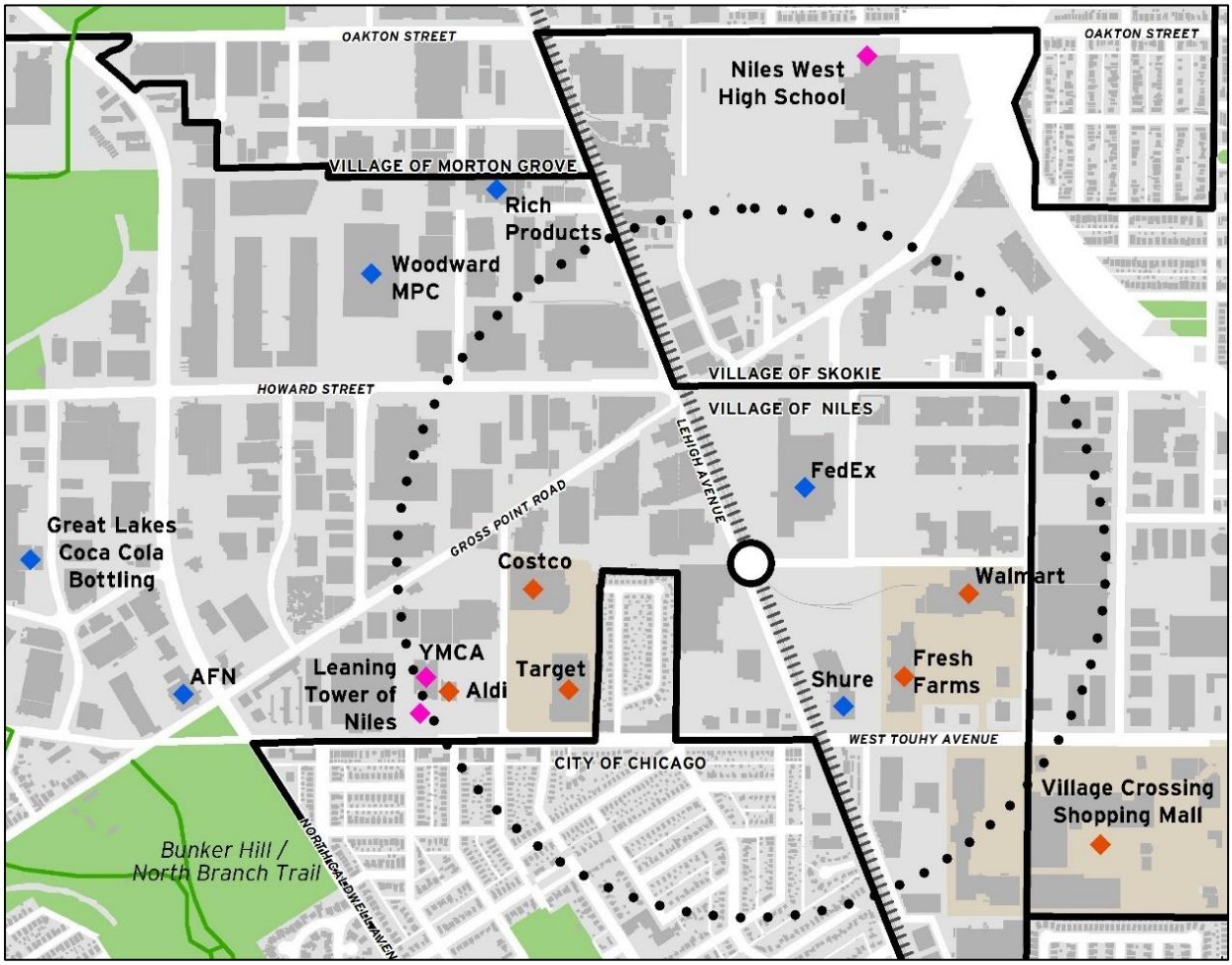
The three shopping centers shown on the map represent significant destinations within the Village and surrounding communities, attracting visitors to the area seven days a week. The strength of

these centers is based on high visibility and access from nearby arterial corridors, and favorable demographic and household income trends within their trade area. Each center is anchored by two or more major retail chains, covering a wide range of goods and services.

The Station Area is also an important employment district, including a number of large businesses that operate multiple shifts per day, including weekends. FedEx and Shure are the two largest employers within the Station Area, and both are located immediately adjacent to the proposed station. Just outside the half-mile radius are a number of other large employers including Woodward MPC, which is the Village of Niles' single largest employer. Interviews conducted by the project team with several of these businesses indicate that well over 2,500 people are employed by just these companies alone.

Key institutions within the immediate area include the Leaning Tower YMCA and Niles West High School. The YMCA provides recreational opportunities and social services to the surrounding community and is best known for the Leaning Tower of Niles—a half-scale replica of the iconic tower in Pisa, Italy. This highly visible landmark was recently purchased by the Village of Niles, which intends to reinvigorate the Tower as a local attraction. The Tower is also expected to play a prominent role as a focal point and landmark in the Village's plan to redevelop the Touhy Triangle as a mixed-use entertainment district.

Figure 3-19: Local Points of Interest



3.6.5 Public Spaces

Open space within the Station Area is relatively limited, though larger nature and recreation areas—such as the Bunker Hill Forest Preserve and several community parks—do exist nearby. Notable green spaces within the Station Area include the YMCA's running track and the Niles West athletic campus; however, these are not expressly intended for public use. The Shure property has a significant amount of open space, including native planting areas and a memorial garden located directly adjacent to the proposed station location. The company does not encourage public use of these spaces either and will likely take further measures to secure access to their property should a station be implemented.

As noted above, the Leaning Tower of Niles has recently been acquired by the Village and serves as a major landmark and true public space for the community. At just under one acre in size, the site features an extensive plaza that is flanked by reflecting ponds and decorative planting beds. Plans to activate the Tower and plaza space are being explored, and the space features prominently in the community's vision for the redevelopment of the Touhy Triangle. Though still preliminary in nature, proposed plans for the Triangle include the creation of a large community open space adjacent to the Leaning Tower plaza (Figure 3-20).

Figure 3-20: The Village's vision for a new community open space in the Touhy Triangle

3.6.6 Transportation Access

The character and conditions of the Niles Metra Station Area are largely defined by a number of vital arterial corridors that serve as the primary connections for the residential neighborhoods, commercial centers, and employment districts of many of the inner ring suburbs on the north/northwest side of Chicago. The strength of the local real estate market is directly tied to this high level of connectivity, which will remain an important strategic factor as the area evolves in the future.

3.6.6.1 Roadways and Sidewalks

Touhy Avenue is the primary east/west corridor in the Station Area, and the main spine of the surrounding commercial districts. Touhy is classified by the Illinois Department of Transportation (IDOT) as an Other Principal Arterial and Strategic Regional Arterial, which means that the corridor is “intended to carry larger volumes of traffic at higher speeds as a complement to the region’s expressway system” (CMAP SRA-Resources). East of Lehigh Avenue, the corridor’s Average Daily Traffic (ADT) count is 39,000 vehicles per day, while to the west the count is 26,100 vehicles per day (IDOT).

Within the area, Touhy Avenue is generally five-lanes wide, including a center turn-lane and occasional right turn lanes. Sidewalks with adequate grass or landscape buffers exist along much of the corridor, though they are missing in specific locations or are discontinuous and located immediately adjacent to the roadway, which diminishes the pedestrian experience. Beyond adding or repairing sidewalks, the provision of additional street trees, and more frequent and higher visibility crosswalks would be needed to improve the pedestrian environment.

Other important corridors include Gross Point Road, Howard Street, and Lehigh Avenue, which are all classified as Major Collectors by IDOT. Gross Point and Howard serve a range of uses, including manufacturing and distribution businesses, which results in a more industrial feel overall. Sidewalks and landscape buffers do exist along Gross Point Road, though these are frequently interrupted by curb cuts and wide drive aprons needed to provide access to loading docks. Streetscape conditions vary widely on Howard, with sidewalks missing along extensive portions of the corridor, including the areas immediately west of Lehigh Avenue, which has been noted as an accessibility issue by many of the local businesses. However, critical improvements to Howard Street were in the planning stages as of September 2018.

Figure 3-21: Existing Conditions on Lehigh (facing north)

Running parallel to the MD-N line, Lehigh Avenue would be among the most heavily used roadways by future Metra riders (see Figure 3-21). This corridor—along with Touhy Avenue—is controlled and maintained by IDOT, and would need to be improved considerably in the future to accommodate pedestrians and bicyclists appropriately. Of primary concern is a total lack of sidewalks, as well as the existence of significant curb

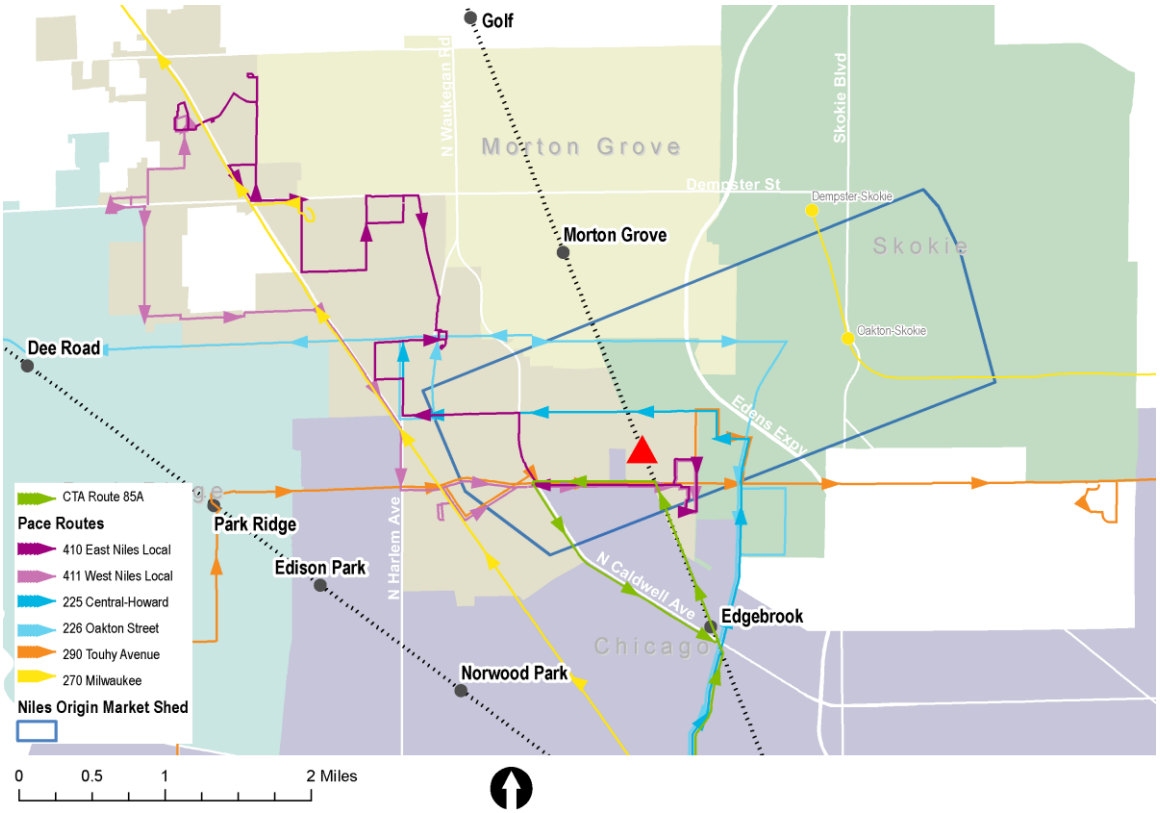
cuts along much of corridor between Touhy and Oakton. While no specific plans to improve Lehigh Avenue exist at this time, the Village does anticipate that significant enhancements will occur along Lehigh Avenue and other area streets as part of future redevelopment efforts within the Touhy Triangle.

At present, Jarvis is largely used as an access route for trucks serving local businesses and the Pointe Plaza shopping center, though it does have sidewalks along much of its frontage.

3.6.6.2 Transit Connectivity

As described in future plans for the Touhy Triangle, connectivity is a major asset for the Village to build on. Within a short distance of the proposed station location are six Pace bus routes: complementary pair 410/411, 225, 226, 270, and 290; and one CTA route: 85A. Figure 3-22 shows the routing of these bus services. Route summaries according to the Pace and CTA websites follow, and additional information about plans for these routes is discussed in Chapter 5.5.

Figure 3-22: Nearby Bus Routes of Proposed Niles Station



- **Pace Route 410 East Niles Local** | Provides free northbound and southbound daily service on the east side of Niles; partly subsidized by the Village. The northbound route begins at Village Crossing Shopping Center and ends at Golf Mill, where it continues as Route 411. Weekday service begins at 6:45am and continues to 4:19pm, with roughly 30-minute headways. Service is provided to Walmart, Village Crossing Shopping Center, Leaning Tower YMCA, Recreation Center, Civic Center Plaza, Niles Public Library, Notre Dame High School, Huntingdon Apartments, and Golf Mill. Transfers are available at Golf Mill to/from Pace Routes 208, 240, 241, 270, and 272.
- **Pace Route 411 West Niles Local** | Provides free northbound and southbound daily service on the west side of Niles; partly subsidized by the Village. Weekday service begins at 6:33am and continues to 5:02pm, with roughly 30-minute headways. The northbound route begins at Village Crossing Shopping Center and ends at Golf Mill, where it continues as Route 410. Some southbound trips stop at the Niles Maintenance Garage, while others follow a different routing

to serve the St. Andrew Life Center. The route serves the Leaning Tower YMCA, Dempster Plaza, Golf Mill, Ballard Plaza and Village Crossing Shopping Center. Transfers are available at Golf Mill to/from Pace Routes 208, 240, 241, 270, and 272.

- **Pace Route 225 Central-Howard** | Provides weekday rush hour service between the Howard Industrial area in Niles, the Edgebrook Metra Station and the Jefferson Park CTA/Metra Station. The AM northbound route begins at Jefferson Park Transit Center and ends at the intersection of Oakton and Harlem; the PM southbound makes the reverse. AM departure times run from 6:05am to 8:40am, PM trips begin at 3:35 and continue to 6:05, with 30-minute headways.
- **Pace Route 226 Oakton Street |** Provides weekday service between the Jefferson Park CTA Blue Line Station / Metra UP-NW Station and Oakton and Hamilton in Mt. Prospect via the Des Plaines Metra Station. Stops also include Edgebrook Metra Station, Village Crossing, Oakton Community College/Prairie Center, Niles West High School, Oak Mill Mall and Maine West High School. Weekday service begins at 5:01am and continues until 7:11pm, with headways varying between 15 minutes and 1 hour, depending on peak- or off-peak period. This route is expected to experience restructuring in the future, as discussed in Chapter 5.5.
- **Pace Route 270 Milwaukee** | Provides daily north-south service between Golf Mill and the Jefferson Park CTA Blue Line Metra Station via Milwaukee Avenue. Stops include Oak Mill Mall, Notre Dame High School, Golf Mill Mall, and Heritage Pointe Apartments. Certain weekday and Saturday trips are extended to Glenbrook Hospital and surrounding area. This route is part of the Pace Pulse rapid transit network. Infrastructure improvements are to be completed in 2019.
- **Pace Route 290 Touhy |** Provides daily east-west service between the Howard Street CTA Station (Red, Purple and Yellow Lines) and the Cumberland CTA Blue Line Station, via Touhy Avenue. Serves Park Ridge, Niles, Skokie, Lincolnwood, Park Ridge and Cumberland CTA Stations, the Lincolnwood Town Center, Village Crossing and the Rogers Park area of Chicago. Between 6:00am and 6:00pm, headways tend to range between 10 and 20 minutes.
- **CTA 85A North Central** | Provides daily weekday and Saturday service between the Jefferson Park CTA Blue Line Station / Metra UP-NW Station and Touhy / Lehigh. Headways average 30 minutes.

None of these bus routes connect the Niles Station Area with the nearest rapid rail stations on the Skokie Swift (Dempster and Oakton), which are just over 1.5 miles away. The Oakton Station is within the Niles origin market shed, as seen on Figure 3-22. However, they do connect the area with CTA stations Jefferson Park and Howard, as well as various other CTA and Metra stations. Current Metra service is provided nearby at MD-N stations (Morton Grove and Edgebrook) and UP-NW stations (Park Ridge, Edison Park, and Norwood Park).

The Village is separately exploring setting up employer shuttles from existing Metra stations, with the objective that, if successful, they could serve as a proof of concept for serving a Niles station with connecting shuttles. Since employment densities are significantly greater near the proposed Niles station compared to Morton Grove or Edgebrook, the eventual application of the proven concept to a new Niles station should see greater use.

3.6.6.3 Non-motorized Access

Bike and pedestrian access within the proposed Station Area is limited, which is not unexpected due to the existing industrial and auto-oriented commercial character. Steps to remedy this issue will be important to address when implementing plans for a new train station, as well as in the areas slated for future redevelopment within the Touhy Triangle.

The Village's Bicycle & Pedestrian Plan, adopted in 2014, identifies many of the existing challenges for bicyclists and pedestrians within the Village, and provides a broad range of recommendations and preferred measures for improving non-motorized access and connectivity. Within the Bike/Ped

Plan a high priority was placed on improving sidewalk conditions throughout the Village. However, the enhancements recommended for the Station Area were ranked as the lowest priority (Phase 5 of 5). Sidewalks enhancements to the west of the Station Area—especially along Touhy Avenue between the North Branch Trail and Croname Road—were assigned a higher priority level (Phase 3), which would help to improve east/west connectivity between the North Branch Trail and the heart of the Touhy Triangle redevelopment area.

At present, bike lanes or trails are wholly lacking within the Station Area, but some notable improvements have been proposed. These include creation of new bike lanes along Howard Street that would connect the Station Area with the North Branch Trail to the west and other planned trails to the east. This route has been designated as a Priority Corridor by the Northwest Municipal Conference. Skokie is also exploring opportunities to improve bicycle connectivity, including a proposed lane or route along Gross Point Road north of Howard Street that would serve as an important connection to Downtown Skokie (Bike/Ped Plan, page 16). While not proposed in the Bike/Ped Plan, the Village may also want to explore bike lanes along Lehigh Avenue, which could connect the proposed Metra Station to the proposed Howard Street trail and to the existing Lehigh Avenue bike lanes north of Oakton Street.

3.6.6.4 Safety

If not addressed, the lack of sidewalks and bicycle amenities within portions of the Station Area and surrounding blocks would present one of the most direct impediments to pedestrian safety and comfort. During meetings with local stakeholders in August and September 2018, concerns were noted about the difficulty that some employees experience in accessing area businesses, which further demonstrates the need for improving bike and pedestrian conditions.

There are two at-grade track crossings within the Station Area, located at Howard Street and Touhy Avenue, with no new crossings anticipated. Each crossing has standard safety measures in place including signage, pavement markings, lights, and gates, with the Touhy Avenue crossing having some additional measures such as dynamic envelope markings, and additional lights and gates. As noted above, Village planning efforts for improvements to Howard Street are currently underway, which may provide an excellent opportunity to explore further safety enhancements along the corridor and at its at-grade crossing in particular—especially for measures benefiting bicyclists and pedestrians. Accident data for these crossings is provided on Table 3-9. To place these figures in context, for the 7,615 rail crossings state-wide, there were 86 crossing accidents and 26 fatalities in 2017.

Table 3-9: Grade Crossing Accidents Since 1980

	Howard Street	Touhy Avenue
Average Daily Vehicles	13,500	39,000
Collisions	8	5
Fatalities	2	2
Injuries	2	4
Latest Collision	11/6/2017	1/6/2014

Source: Illinois Commerce Commission

3.6.7 Environmental Screening

With the exception of a roughly 0.84-acre drainage pond located along the south side of Howard Street in the far northwest corner of the Station Area, there are no wetlands, major habitats, or areas of interest *formally recognized* by the National Wetlands Inventory in the immediate Station Area. However, there is a rather substantial man-made, naturalized area located on the Shure property adjacent to the proposed station at the western terminus of Jarvis. This garden was created by the company after moving to the property and features a mix of wet and dry planting areas, and a memorial space dedicated to workers who passed away while in employment (see Figure 3-23). It is anticipated that the proposed train station would have a direct impact on this open space, which will need to be addressed in future plans.

Figure 3-23: Shure Memorial Gardens

Other storm water retention areas exist along Jarvis to the east of the memorial garden, and they will also need to be evaluated for impacts from future improvements related to the proposed train station. Any diminishment or changes to these catchment areas will need to be addressed to ensure that proposed improvements meet Metropolitan Water Reclamation District of Greater Chicago (MWRD) storm water requirements.

3.7 Other Considerations

In addition to the existing conditions analysis above, it is important to consider several other—often less tangible—topics to better understand and assess the potential Niles station market. These include:

- Historical and projected socioeconomic growth
- Market absorption capacity
- Land acquisition considerations
- Potential land use conflicts

3.7.1 Socioeconomic Growth

Chicago Metropolitan Agency for Planning (CMAP) data on the population, households, and employment per subzone (or quarter section) were gathered for the study area. Both the historical trends and future projections shed light on the potential feasibility of the Niles station in terms of market demand. These values have been assessed more holistically here, but the forecast values are also incorporated into the travel demand forecasting in Chapter 5. As a visualization of the historical and projected data for the rider origin market sheds, see the time series population density and employment maps in Figure 3-26 and Figure 3-27.

In terms of population within the origin rider market sheds, there has been a slight positive trend in the Niles market shed, similar to Edgebrook, adding 0.2% population annually since 1980, which translates to 1,791 new residents in the Niles shed (Table 3-10 and Figure 3-24). This is more growth than the Morton Grove market shed has seen, as it has just barely recovered to its 1980

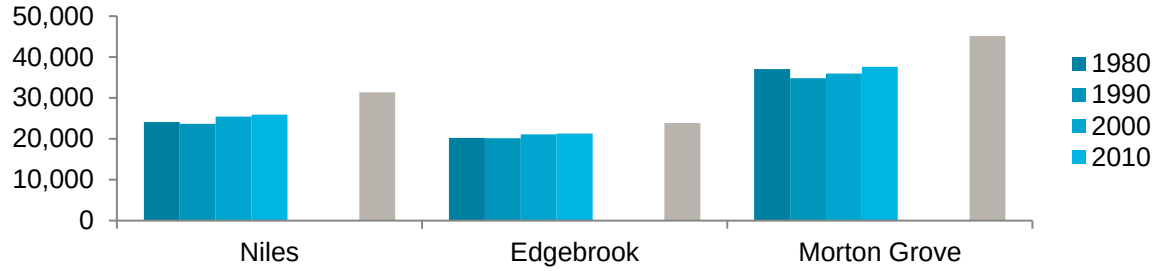
population levels after a decrease of over 2,000 people between 1980 and 1990. Forecasts are more aggressive than historical trends, with Niles showing a 0.6% annualized growth rate to add nearly 5,500 new people by 2040. This is comparable to the growth forecast for the Morton Grove origin rider market shed, and more than the Edgebrook shed.

Table 3-10: Origin Market Shed CMAP Population History and Forecast by Subzone

	Population					Historical Change 1980-2010		Forecast Change 2010-2040	
	1980	1990	2000	2010	2040	Absolute	Annual	Absolute	Annual
Niles	24,101	23,673	25,450	25,893	31,380	1,791	0.2%	5,488	0.6%
Edgebrook	20,215	20,143	21,096	21,294	23,875	1,079	0.2%	2,581	0.4%
Morton Grove	37,081	34,814	35,972	37,608	45,147	527	0.0%	7,539	0.6%

Source: CMAP

Figure 3-24: Origin Market Shed CMAP Population History and Forecast



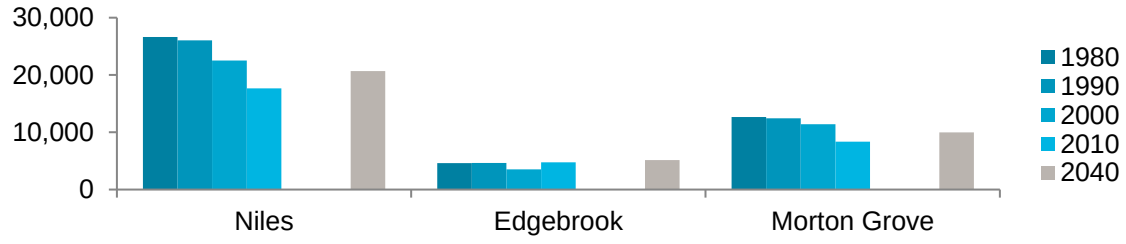
In comparison with adjacent MD-N stations Morton Grove and Edgebrook, the potential Niles station had the highest employment in 2010 with 17,655 workers. Employment within the destination rider market sheds has fallen significantly in both Niles and Morton Grove—an annualized 1.4% since 1980. In the case of Niles, this equates to a drop of nearly 9,000 workers, with most of the decrease being since 1990 (Table 3-11 and Figure 3-25). Employment levels are projected to increase in the Niles shed by 0.5% annually, adding just over 3,000 new workers by 2040. The Edgebrook market has seen very little change over time, with typically between 4,000 and 5,000 workers.

Table 3-11: Destination Market Shed CMAP Population History and Forecast by Subzone

	Employment					Historical Change 1980-2010		Forecast Change 2010-2040	
	1980	1990	2000	2010	2040	Absolute	Annual	Absolute	Annual
Niles	26,615	26,036	22,513	17,655	20,691	-8,960	-1.4%	3,035	0.5%
Edgebrook	4,627	4,638	3,540	4,745	5,134	118	0.1%	389	0.3%
Morton Grove	12,674	12,446	11,403	8,373	9,989	-4,301	-1.4%	1,616	0.6%

Source: CMAP

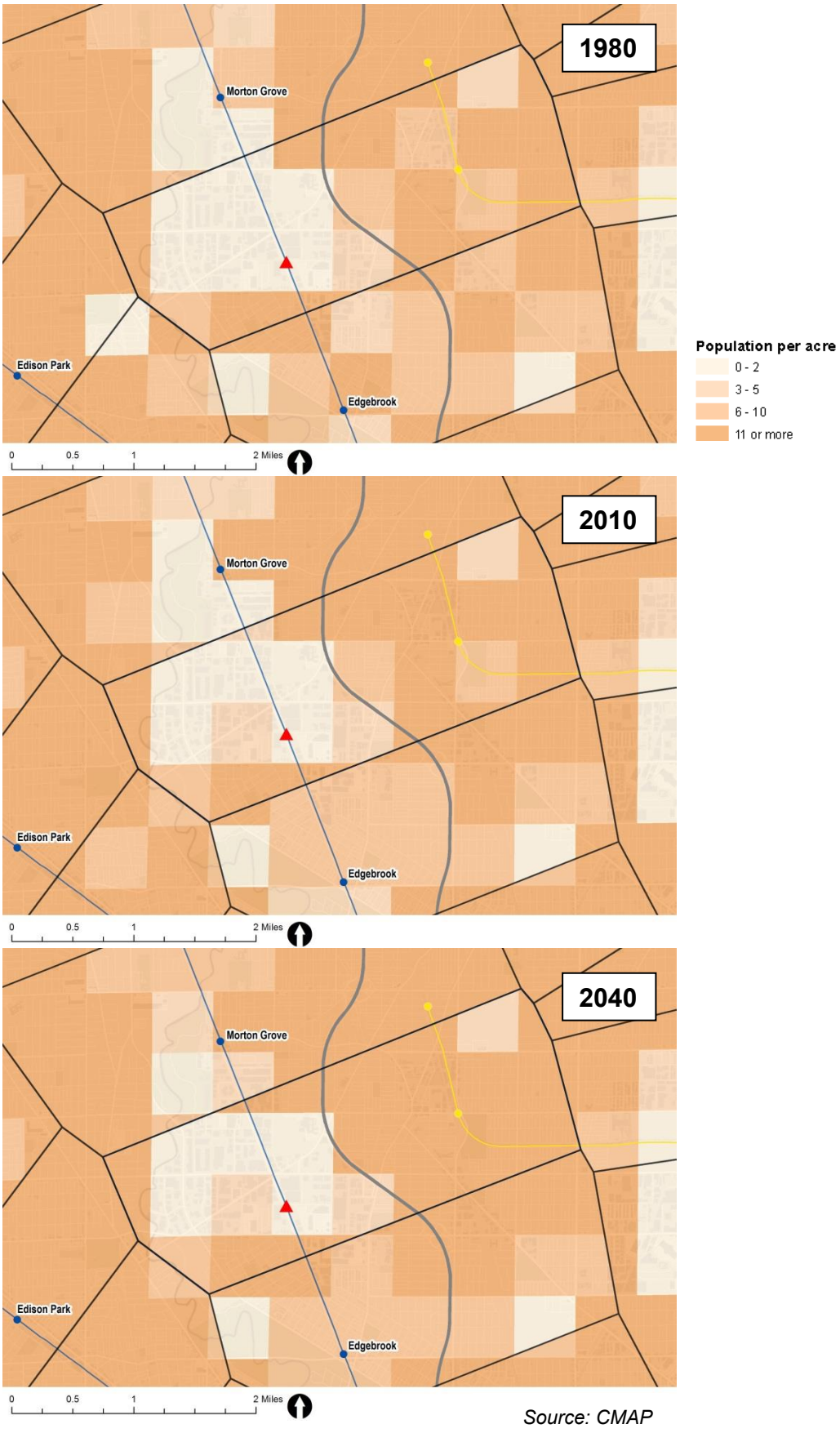
Figure 3-25: Destination Market Shed CMAP Population History and Forecast



To summarize, the CMAP forecasts thus show growth from existing conditions for both the potential origin and destination Metra ridership markets in Niles, even though the historical trends are not very encouraging in the case of the destination market. It is important to note, however, that CMAP

forecasts are completed at a metro level, and thus a more detailed analysis is often more worthwhile in the case of smaller study areas, such as the destination market shed with its radius of one mile.

Figure 3-26: Historical and Projected Population Density by Subzone



Source: CMAP

Figure 3-27: Historical and Projected Employment Density by Subzone

Source: CMAP

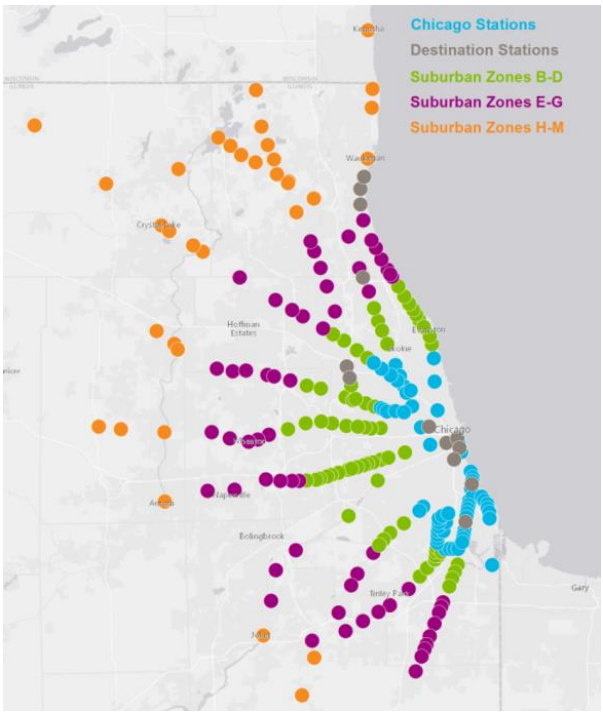
3.7.2 Market Absorption Capacity

A fundamental consideration of the potential market for a new station in Niles is the market's capacity to absorb and support new development that occurs in the Station Area. To gain better insight into this key question, the development trends in the Chicago area were analyzed from several different perspectives. First, the development history within the half-mile area of Metra stations system wide was analyzed as a whole and by station category. The intent of this is to determine the market of commuter-rail adjacent developer interest that the potential Niles station is likely draw from. Then, the market trends in the geographic submarket and CoStar-defined market area were considered to better understand nearby trajectory and potential competition.

3.7.2.1 Metra Station Area Development Trends

Historical data on commercial market inventory, occupancy, and rent trends were gathered from the CoStar real estate database for the first half of 2018 and back to 2006. This analysis focuses on the office, retail, and multi-family markets in particular, and divides the analysis into short-term (2012-2018) and long-term (2006-2018) trends. The short-term focus is intended to identify the presence (or absence) of a shift toward urbanization, downtown concentration, and mixed-use developments. The long-term lens is intended to capture both the boom and bust development cycle to avoid overly optimistic projections based on the healthy development climate of recent years. Finally, the stations were divided into subgroups based on categories defined by Metra to analyze comparative station performance: Chicago (residential & non-residential stations), Suburb Fare Zone B-D (residential & non-residential stations), Suburban Fare Zone E-G (residential & non-residential stations), Suburban Fare Zone H-M (residential & non-residential stations), and Destination stations[1] (i.e., more AM peak alightings than boardings). See Figure 3-28 for the distribution of these stations across the Chicago metro area. The potential Niles station is most likely to be categorized as either a Destination station based on its potential role as a reverse commute station similar to the MD-N Lake Cook Road Station, or a Suburban Zone B-D non-residential station.

Figure 3-28: Metra Stations by Category



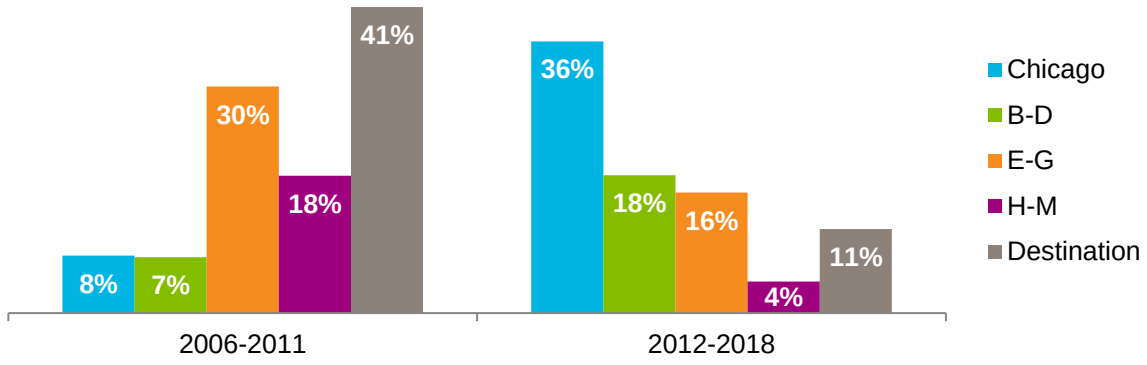
[1] Destination Stations based on 2016 boardings include: Museum Campus, McCormick Place, 59th St. (Univ. of Chicago), 95th St. (Chicago State Univ.), Lovana S. Jones / Bronzeville, Halsted Street, Western Avenue (MD/NCS), Lake Cook Road, Rosemont, O'Hare Transfer, Lake Bluff, Great Lakes, and North Chicago.

3.7.2.1.1 Office

In the office market, 2.5 million square feet of space have been delivered within a half mile of a Metra station since 2006. The largest proportion (over a quarter) has been located near Destination stations. Nearly half of the deliveries have been fairly evenly distributed across non-residential stations of varying geographies (15 percent in Chicago, and about 10 percent in each of the Suburban subgroups). The last quarter has been in residential station areas, with the vast majority in Suburban Fare Zone E-G. Specific to markets comparable to potential Niles station, 700 million square feet (annualized 58,000) have been delivered near Destination stations and 190,000 square feet (annualized 16,000) near non-residential Suburb Zone B-D stations.

However, once we divide this 12-year history into older and more recent deliveries (Figure 3-29), we find that there has been a great deal of metro area concentration since 2012, with the highest proportion of office deliveries now occurring in Chicago Metra stations (36 percent) rather than the Destination Stations (41 percent in 2006-2011). The near suburbs have also grown to capture 18 percent of station area deliveries, up from 7 percent; breaking that down to station types, that's 11.7 percent for non-residential near suburban stations and 6.7 percent for near suburban residential stations. This stands in contrast to the shrinking market share of outer suburbs and exurbs, leading one to conclude that developer and market interest in destination-oriented TOD is on the rise in Chicago and the near suburbs, outside of the established reverse commute or otherwise destination-oriented stations (e.g., Lake Cook Road, McCormick Place, University of Chicago, Rosemont, Western Avenue, etc.).

Figure 3-29: Share of Total Office Deliveries in Half-mile Metra Station Areas



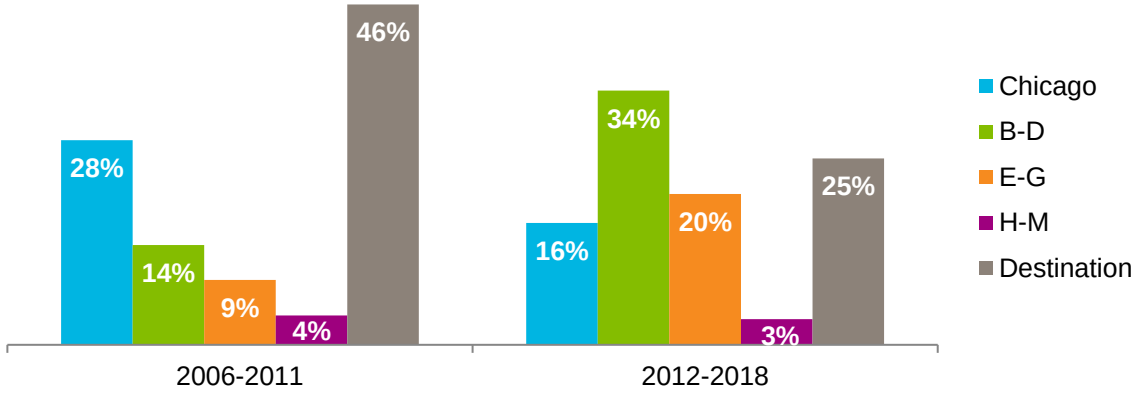
3.7.2.1.2 Multi-family

The multi-family market has seen nearly 18,000 housing units delivered within a half mile of a Metra station since 2006. The largest share (37 percent) was delivered near Destination stations, followed by equal levels near Chicago or near suburbs (Zones B-D) (23 percent each). A combined 18 percent were delivered in more distant suburbs. In absolute terms, 6,500 units were built near Destination stations, 200 units near Suburban Zone B-D non-residential stations, and 3,900 units near Suburban Zone B-D residential stations. This equals an annualized 550 units among Destination stations and 340 across both residential and non-residential Suburban Zone B-D stations.

Since 2012, the shares of development that have occurred in Suburban Zone B-D and E-G have more than doubled, with B-D now leading with 34 percent (Figure 3-30). Interestingly, Chicago's share is down, as is the Destination stations' share. This suggests growing support recently for suburban TOD with a higher-density residential component—a typology likely to benefit strongly

from a Metra station with good non-motorized accessibility, as well as have a positive impact on Metra ridership as correlated with the typical CBD commuting pattern.

Figure 3-30: Share of Total Multifamily Deliveries in Half-mile Metra Station Areas

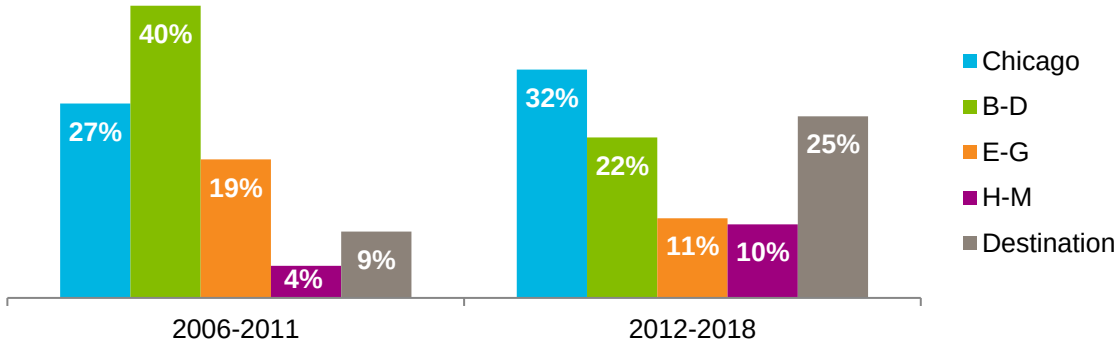


3.7.2.1.3 Retail

Approximately 5.6 million square feet of retail space has been delivered near Metra stations since 2006. About a third of that development occurred near Suburban Zone B-D stations and slightly less (29 percent) near Chicago stations. Sixteen percent occurred near Destination stations and the same proportion near Suburban Zone E-G stations; the remaining 7 percent was near outlying stations. In absolute terms, Suburban Zone B-D stations received 1.9 million square feet of retail space since 2006, or 155,000 annually on average. Destination stations had 870,000 square feet, or 73,000 annually.

Comparing more recent trends with longer term, more retail space was delivered pre-2012 than post-2012 in absolute terms. This is true for the system totals and for all subgroups except the outlying suburbs (Zones H-M) and Destination stations. This slowdown in retail development is common across most U.S. markets. However, looking at proportions of deliveries, we can see that Chicago and Destination stations are capturing larger shares of the recent retail development (Figure 3-31).

Figure 3-31: Share of Total Retail Deliveries in Half-mile Metra Station Areas



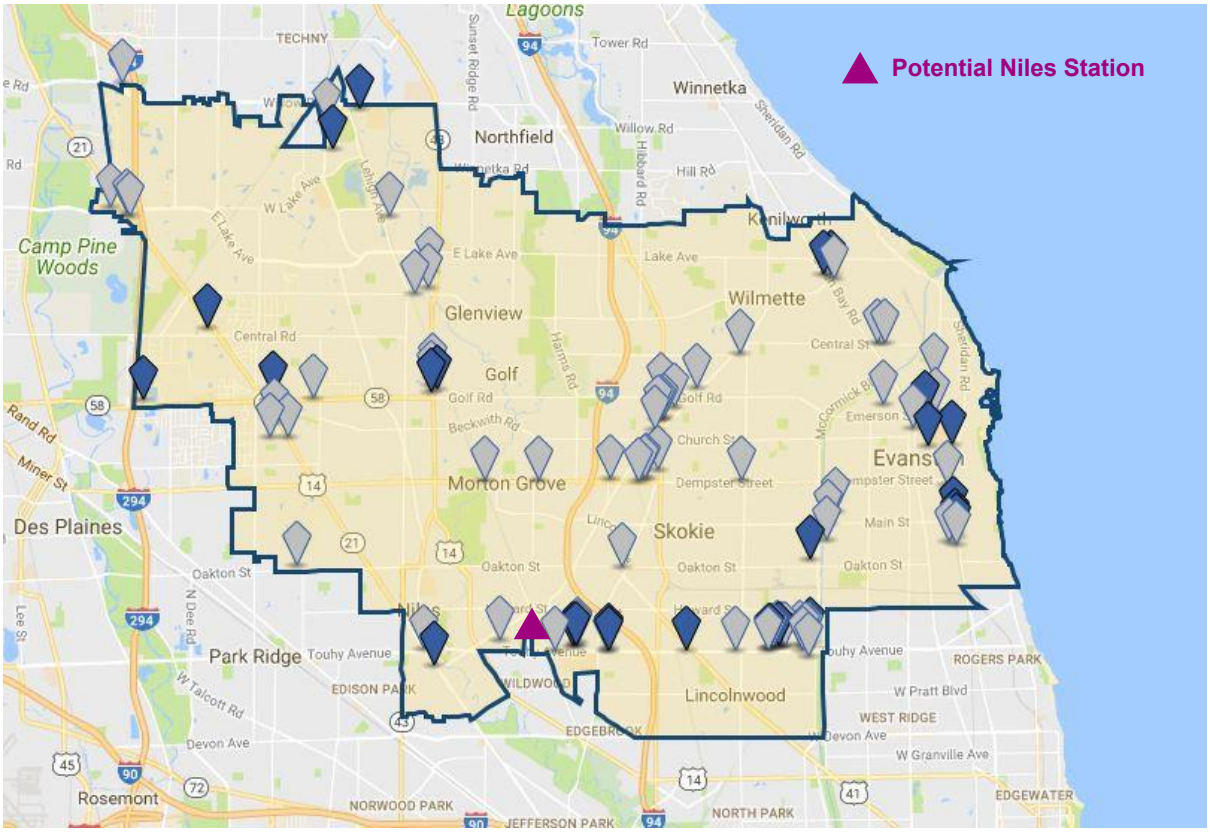
In conclusion, we see a positive shift for the inner suburbs in terms of office and multifamily market share over the past five years, and development in the potential Niles Station Area would be consistent with this trend. The decrease in retail deliveries is part of the nationwide slowdown in large retail centers, as major bricks-and-mortar retailers face bankruptcy and anchor tenant spaces

become vacant and must be absorbed or converted to other land uses. Typically, the stronger retail segments are entertainment/lifestyle-oriented, or discount retailers, which may be why we are seeing growth in deliveries in Chicago and destination stations (entertainment/lifestyle retail) and exurban (discount retail) locations. It is expected that the Touhy Triangle development program will have a strong entertainment component, as well as retain key discount retail anchors like Costco to attract visitors.

3.7.2.2 Submarket & Peer Development Trends

Two different submarkets were identified to evaluate local—as opposed to sector—trends. One is the four-mile radius around the potential Niles Station location, and the other is the CoStar-defined submarket that the station falls within, named the Near North submarket of the Chicago market (Figure 3-32). The radius approach captures geographically similar locations, while the CoStar makes the important distinction between Chicago and suburban markets.

Figure 3-32: CoStar Near North Submarket



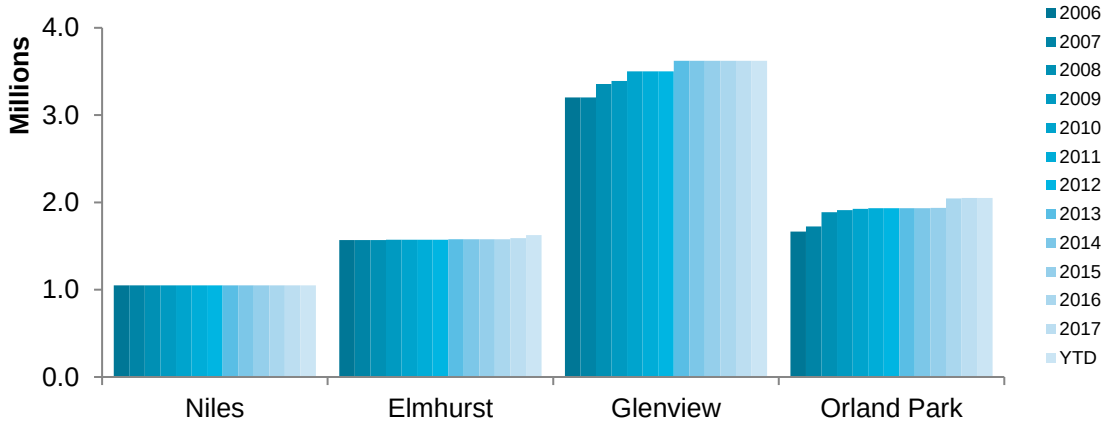
A group of peer municipalities and station areas were also selected to help benchmark Niles' potential future development. These municipalities were based on the number of housing permits reported to the Housing and Urban Development database, as well as the presence of a Metra station within their boundaries and relative proximity to downtown Chicago. The group of Metra station areas studied includes: Des Plaines, Elmhurst, Glen of North Glenview, Glenview, Lombard, Orland Park 143rd, and Wheeling. The municipalities include Elmhurst, Glenview, and Orland Park.

3.7.2.2.1 Office

The Niles office market inventory currently stands at one million square feet, with no reported deliveries since 2006. This is similar to the four-mile area, which has not had any major office deliveries over this period. The Near North market, meanwhile, has added about 675,000 square feet of space, which translates to roughly an annualized growth rate of 0.4 percent, though none of this growth has occurred in the past 5 years.

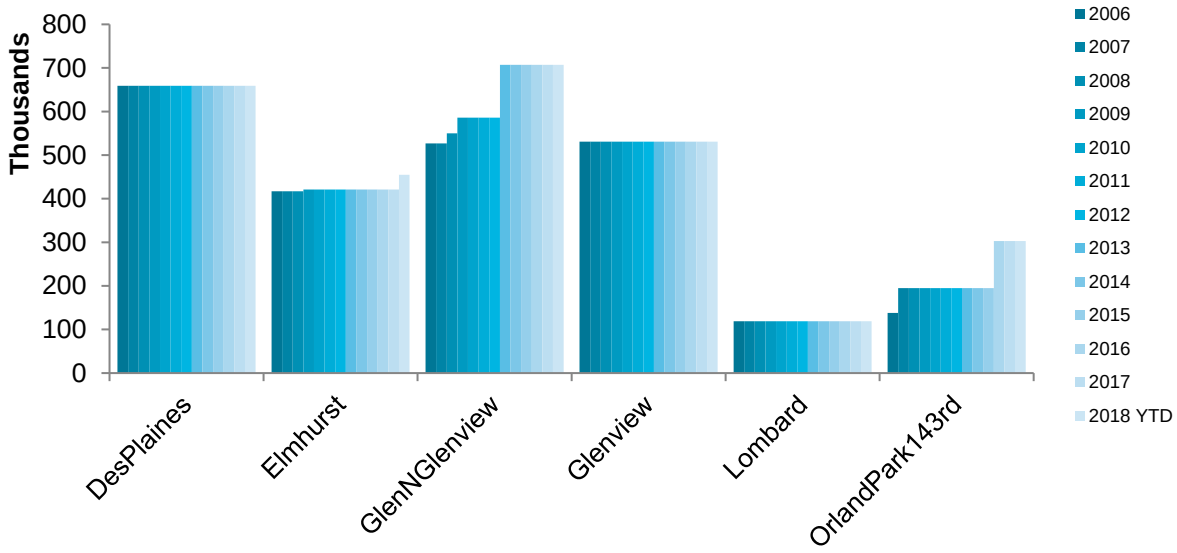
Among peer municipalities (Figure 3-33), the most robust growth has been in Orland Park, which grew at an annualized 1.8 percent by adding 385,000 square feet since 2006, and Glenview, which grew by 1.1 percent, adding 420,000 square feet. Both of these municipalities grew more pre-2012. A key difference is that Orland Park has grown its occupancy faster than its inventory, while Glenview has experienced softening demand. Niles's office market occupancy has been growing slowly over both the short- and long-term. Wheeling is not included here due to its lack of historical office development.

Figure 3-33: Office Inventory by Municipality



Turning now to station areas (Figure 3-34), the major growth has been in Glen of North Glenview (adding 180,000 square feet since 2006, two thirds of that occurring since 2012) and Orland Park 143rd St (adding 165,000 square feet, one third since 2012). All of these station area deliveries were fully absorbed.

Figure 3-34: Figure : Office Inventory by Station Area

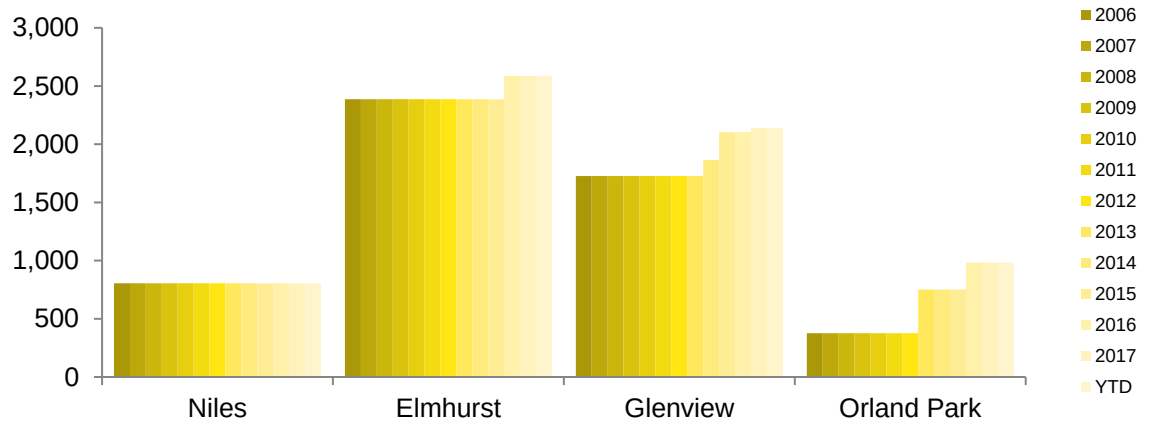


3.7.2.2.2 Multi-family

The Niles multifamily market inventory currently stands at just over 800 units, with no reported deliveries since 2006. Meanwhile, the four-mile area has grown by approximately one percent annually, adding 1,300 units since 2006 (38 percent of that since 2012). The Near North market has grown slightly faster—1.2 percent to 1.5 percent annually—by adding 2,700 units since 2006, 59 percent of that since 2012.

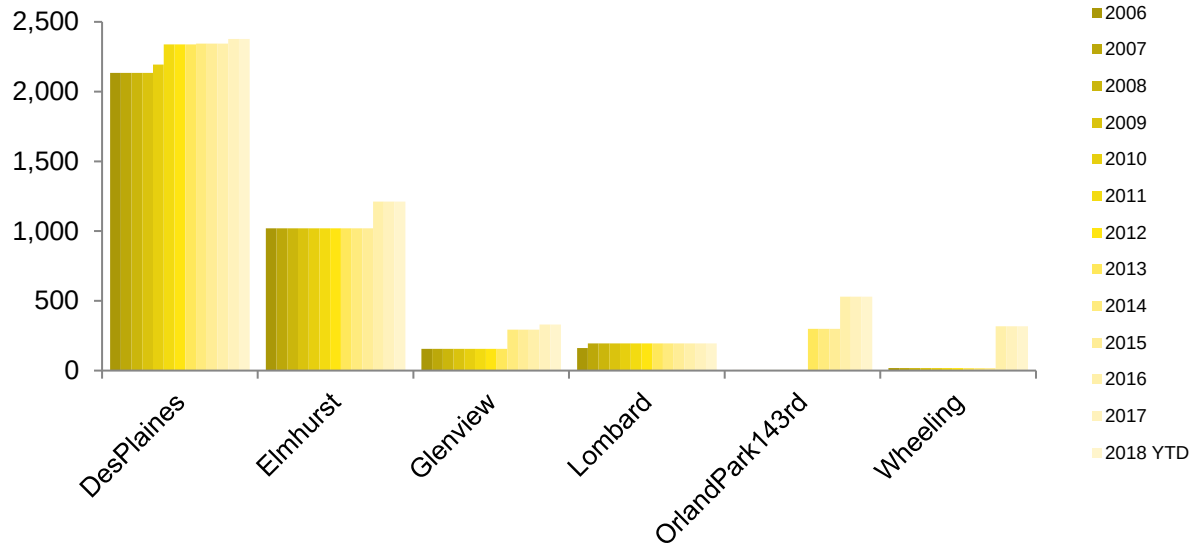
Among peer municipalities (Figure 3-35), the most robust growth has been in Orland Park, adding 600 units to its inventory since 2012, and Glenview, which added 400 units. Elmhurst has added 200 units. All of this growth has occurred in recent years and suggests participation in a growing trend toward multifamily development. The developments appear to be fully absorbed and all municipalities show strong occupancy rates around 95 percent.

Figure 3-35: Multifamily Inventory by Municipality



Turning now to station areas (Figure 3-36), the major growth has been observed in Orland Park 143rd St. (adding 530 units since 2012) and Wheeling (adding 300 units). At the next tier are Elmhurst and Glenview Station Areas, adding just fewer than 200 units. There has been multifamily development near Glen of North Glenview, but it was outside of the half-mile radius and thus is not included here.

Figure 3-36: Multifamily Inventory by Station Area

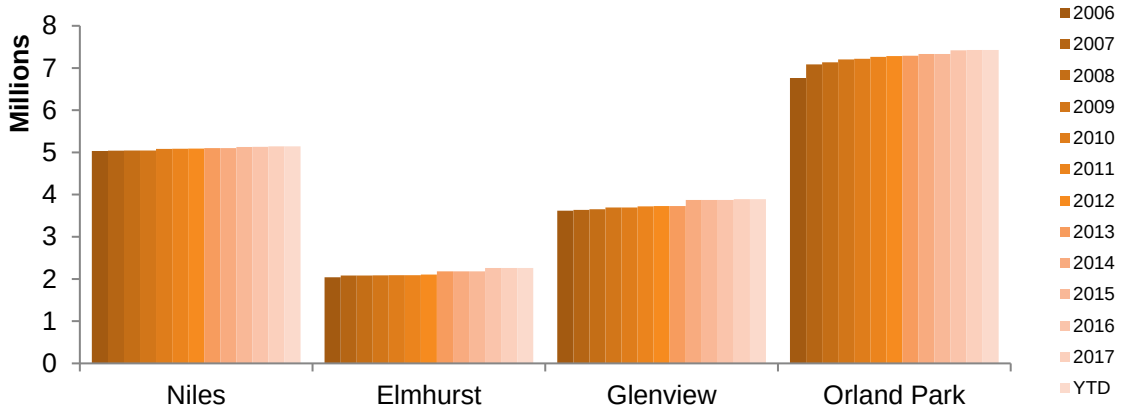


3.7.2.2.3 Retail

The Niles retail market inventory currently stands at 5.1 million square feet, with 113,000 square feet of reported deliveries since 2006 (an annualized growth rate of 0.2 percent). This is slower than the four-mile area, which grew by nearly one percent annually, adding 1.6 million square feet since 2006 (much of that since 2012). The Near North market has grown by about 0.5 percent since 2006 by building 1.3 million square feet of space. Most of the submarket growth has been absorbed, and occupancy rates are generally in the low- to mid-nineties.

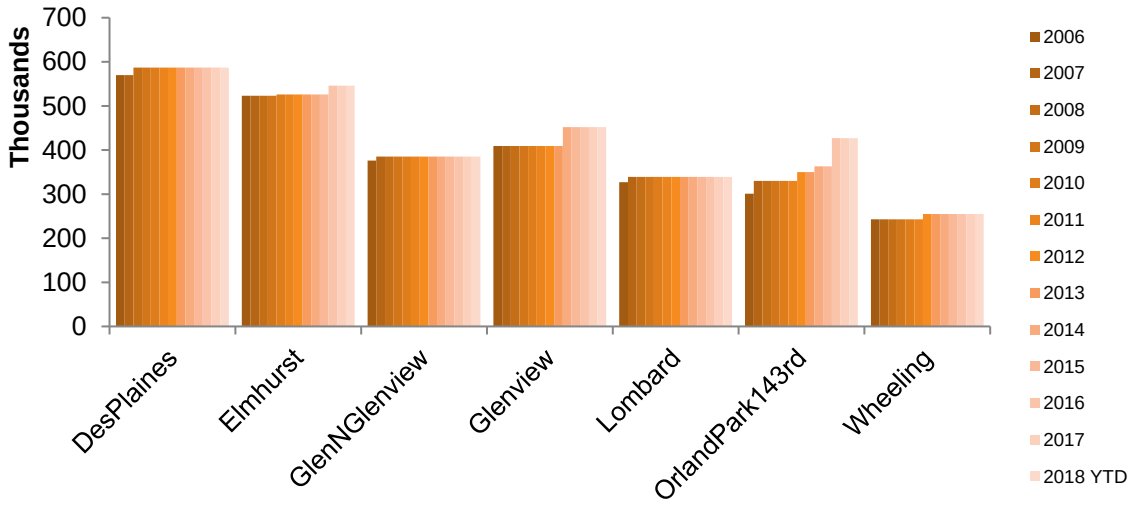
Among peer municipalities (Figure 3-37), the most robust growth has been in Orland Park, which grew at an annualized 0.8 percent by adding 666,000 square feet since 2006, though its recent growth has been slower, about 0.4% annually. Glenview and Elmhurst have grown faster since 2012 than before, adding between 200,000 and 300,000 square feet, which translates into annualized growth of 1.3 percent and 0.8 percent, respectively. Cumulative net absorption has been positive across all municipalities, except Niles. Niles' occupancy has generally fallen from the mid-nineties in 2012 to 91 percent today.

Figure 3-37: Retail Inventory by Municipality



For station areas (Figure 3-38), the major growth of retail has been at Orland Park 143rd St., adding 126,000 square feet since 2006, over half of that occurring since 2012. Modest retail inventory growth has occurred in the Glenview and Elmhurst Station Areas, adding 43,000 square feet and 20,000 square feet, respectively, since 2012. These three areas (along with Wheeling) also show the strongest occupancy rates in the low to mid-nineties, while the other stations tend to have retail occupancy in the upper eighty percent.

Figure 3-38: Retail Inventory by Station Area



The historical real estate activity as presented above is used to evaluate potential market capture scenarios below, as well as to benchmark the Niles station with existing Metra stations in terms of development performance indicators.

3.7.2.3 Potential Market Capture

3.7.2.3.1 Development Scenarios

Following the adoption of the Touhy Triangle Master Plan in 2016, the Village of Niles has noted significant interest for increased residential development in and around the Study Area. Though demand for residential development in the Touhy Triangle may exist without implementation of a new Niles Metra station, the inclusion of a new commuter station would dramatically improve the viability of such use and enable increases in density that would be better aligned with the Village's broader economic goals for the area.

The following is a summary of some alternative development scenarios that have been considered in response to increased demand for residential development within the Touhy Triangle and the possibility of a new Metra station. Note that these alternatives are highly conceptual in nature and were developed solely for the purpose of providing a baseline for further study of future demand for Metra service.

The square footage and unit projections for each alternative shown below apply to the Touhy Triangle district as a whole and reflect new development only. Also note that the figures provided are based on an examination of the potential layout and design of future development and do not reflect a quantitative analysis of demand within the local real estate market. All unit counts shown below are based on a conservative estimate of 85 percent building/floor plate efficiency and an average unit size of 1,000 square feet.

A. Touhy Triangle Master Plan Transit-Oriented Development Scenario

The Touhy Triangle Master Plan—adopted in November 2016—included an alternative master plan concept with increased residential development to help introduce the idea of transit-oriented development (TOD) within the Study Area. Without knowing the viability of a new train station or the community's tolerance for changes in existing land use, the alternative concept focused on a mix of townhomes and low-rise multi-family buildings that would provide modest increases in residential density. Structured parking and more complicated building types were also avoided to provide flexibility in the case of limited interest or demand. The following is a summary of the development projections as shown in the Touhy Triangle Master Plan:

- Residential: 600 to 750 units
- Commercial: 170,000–215,000 square feet
- Office: 105,000–145,000 square feet
- Hotel: 90,000–180,000 square feet
- Industrial: 90,000 square feet
- Recreation: 105,000 square feet

B. Enhanced Touhy Triangle Plan Scenario

The second development scenario explored for this study maintains a similar plan approach as Scenario A noted above but increases the heights and densities of many of the proposed residential and mixed-use buildings. This option would generally require lower parking ratios and a greater reliance on internal or structured parking, though still meet commonly accepted standards for financial viability. The development projections for Scenario B are as follows:

- Residential: 1,000 to 1,350 units
- Commercial: 170,000–215,000 square feet

- Office: 250,000–365,000 square feet
- Hotel: 90,000–180,000 square feet
- Industrial: 90,000 square feet
- Recreation: 105,000 square feet

C. East Side Area TOD Redesign

The third development scenario analyzed maintains many of the assumptions presented in Scenario B but would redesign the eastern portions of the Touhy Triangle Study Area to establish a plan with increased building heights and residential density. This would result in a greater proportion of taller multi-family buildings and apartments, as opposed to low-rise building types such as townhomes, though some units of this nature could be included. The estimated multi-family building heights are 5 to 7 stories, which are within the Villages' stipulated threshold, and Village parking requirements have been relaxed from 2 spaces per unit to 1.25 or 1.5 spaces. Scenario C also includes a pair of mixed-use developments located at the intersection of Lehigh Avenue and the new east-west boulevard envisioned by the Touhy Triangle Master Plan. These buildings would be located in close proximity to a new Metra station and likely include related features or amenities such as commuter parking and surface transit facilities. This scenario also envisions that industrial land use within the Touhy Triangle would be completely transitioned out and redeveloped over time. Development projections for Scenario C include:

- Residential: 1,600 to 2,000 units
- Commercial: 180,000–235,000 square feet
- Office: 250,000–365,000 square feet
- Hotel: 90,000–180,000 square feet
- Industrial: 0 square feet
- Recreation: 105,000 square feet

3.7.2.3.2 Metra Station Area Development

To place the development scenarios in context and thus better understand the likelihood of their programmed development being absorbed, inventory and occupancy growth rates in the short- and long-term were analyzed across the potential markets that a potential Niles station could draw from: commuter rail-adjacent development and Near North submarket.

The long-term occupancy trends in commuter rail-adjacent development were analyzed within two potential market categories: All Metra stations and Metra Suburban Zone B-D + Destination stations. The long-term annualized growth rates were then applied to current occupied inventory to extrapolate to 2040. The current inventory was subtracted from the projected inventory (assuming 95 percent occupancy) to determine the estimated deliveries over that period.

If the proposed Niles station can capture 10 percent of the market deliveries, the reasonable upper limits are outlined in Table 3-12. It is believed that the more reasonable—and conservative—market to assign Niles to is the Suburban Zone B-D + Destination Station market. As a form of guidance, and assuming that the station can realize the role as a Destination Station with some residential in Suburban Fare Zone B-D, the upper limits of a 10 percent market capture are 210,000 sq. ft. of office, 460,000 sq. ft. of retail, and 2,300 multi-family units.

Table 3-12: Share of Metra Station Market Area Deliveries

10% Share of Estimated Deliveries (2018-2040)		
	All Metra Stations	Metra Stations Suburb Zone B-D + Destination
Office	490,000	210,000
Retail	1,050,000	460,000
Multi-Family	3,800	2,300

Considering this question of market absorption from the opposite direction, the estimated deliveries in the most optimistic development scenario (Scenario C) are provided in Table 3-13. These totals are then converted into market capture rates of the same market groups as outlined above. This scenario would require that 8 percent of all Metra station area office development be built near Niles, 2 percent of all retail, and 4 percent of all multifamily, which we consider possible market capture rates, given the proportion of Metra stations that are already in well-developed areas and thus less likely to be redeveloped. The proportions shift to 18% (office), 5% (retail) and 7% (multi-family) for the more narrowly defined Destination station or Fare Zone B-D station markets. For the large amount of office space in the scenario to be absorbed in a timely manner would likely require either the attraction of major office tenants or the potential to attract other owner-occupied structures, in the same vein as the existing Shure.

Table 3-13: Scenario C Market Capture

Share of Estimated Occupancy Growth (2018-2040)			
	Scenario C	All Metra Stations	Metra Stations Suburb Zone B-D + Destination
Office	365,000	8%	18%
Retail	235,000	2%	5%
Multi-Family	1,600	4%	7%

Our conclusion is that while Scenario C is optimistic, it is by no means infeasible, assuming the area's ability to capitalize on the unique selling point of ready access to a strong level of commuter rail service. It should also be noted that these estimates are based on conservative long-term (2006-2017) trends, so they do not fully capture the recent real estate activity that has added a great deal of inventory—especially retail and office inventory—near Metra stations. If the current popularity of TOD continues, which is expected, the relative proportion (or "market capture") of real estate development near Metra stations that is expected at the Niles station under Scenario C will be *lower*, as the overall amount of occupancy growth metro-wide will be *higher.* As an example, if the metro-wide growth in commuter rail TOD retail occupancy by 2040 is 18 million instead of 9 million, Niles' market capture will be 1% instead of 2%. It is noted that many other suburban municipalities also have plans to encourage TOD in their respective station areas, which will make it a more competitive environment for Niles and thus increase the need for supportive policies and infrastructure for development to be successful.

Finally, to place the estimates in context with existing examples, to reach the levels of deliveries estimated in Scenario C, the Niles Station Area would need to replicate the office market performance of the Glen of North Glenview or Orland Park 143rd Street Stations, and the retail and multi-family market performance of Orland Park 143rd Street. Notably, Orland Park 143rd Street has

grown its ridership in 2014 and 2016 to roughly double its pre-2014 average, which emphasizes the positive impact of TOD on Metra ridership.

Figure 3-39: Orland Park (143rd) Station Area

Image source: Google Maps.

3.7.2.3.3 Near North Submarket Development

Replicating the same analysis as above (7.2.3.1) for the Near North submarket—not specific to commuter rail station areas—these market capture rate shifts to 49% of office development, 11% of retail development, and 32% of multi-family development. A 10% capture rate would translate to 70,000 square feet of office space, 210,000 square feet of retail, and 650 multi-family units. This is substantially less than the potential deliveries estimated based on a share of the Metra-adjacent development market and highlights the fact that proximity to a station is a driving factor to achieving a larger scale of development.

3.7.3 Land Acquisition

With the exception of the Lehigh Avenue and the MD-N Line rights-of-way, all of the land within the immediate proximity of the proposed station is privately owned and occupied. As a result, the majority of land required for the development of the Metra station and any associated facilities will need to be acquired or leased on a long-term basis. However, one factor that may help facilitate the procurement process and future implementation is that there are only four properties / property owners immediately adjacent to the proposed station near Jarvis and Lehigh.

On the west side of Lehigh Avenue, new station-related improvements will very likely require the demolition or major renovation of existing buildings—specifically the EPC Printing and American Science & Surplus facilities located at 7400 and 7420 North Lehigh, respectively. While impacts to these properties may be significant in nature, the redevelopment of these parcels has previously been proposed as part of the Touhy Triangle Master Plan. Most importantly, a key recommendation of the Touhy Triangle plan is the introduction of a new east-west access road between Lehigh and Melvina Avenues that would be located between the EPC Printing and American Science & Surplus

buildings. In total, the properties along the west side of Lehigh Avenue are thought to have a high propensity for change.

FedEx and Shure are the two major land owners on the east side of the MD-N tracks, where each company has a significant facility and long-term plans for continued operation. The FedEx facility is located north of Jarvis Avenue, with its primary frontage on Howard Street. The site was redeveloped within the last two years and there is very little likelihood for additional change in the foreseeable future. The Shure, Inc. property is on the south side of Jarvis, with its main facility located near the south side of the site and a memorial garden and parking lot to the north. During initial discussions with Shure representatives it was stated that the company does support and value the introduction of train station at Jarvis, however, they were also careful to note that formal review of any proposals would be required before a commitment or agreement could be reached. Further discussion of stakeholder interviews, including major local employers, is provided in Chapter 4 Community Outreach.

3.7.4 Conflicting Land Uses

While some existing land uses within the Station Area—such as industrial and distribution operations—may not be ideally suited to support commuter rail service, there are no direct land use or physical conflicts that would constrain the viability of a new station. Furthermore, the Villages of Niles and Skokie have both expressed an interest in the station as an opportunity to help strengthen their local employment bases and serve as an important catalyst in realizing their community's visions for growth.

More direct impacts or conflicts may exist on adjacent properties, though there are no immediate issues that appear to be insurmountable. The southern portions of the FedEx property are currently used for truck and employee parking, which may provide some flexibility. As noted above, the Shure property has a large memorial garden near proposed station, which would likely need to be relocated if implementation were to occur. Though the garden space does offer some environmental benefits and has sentimental value, which would need to be respected, company representatives noted that issues such as emergency and freight access, campus security, and mitigating traffic congestion were other concerns that would need to be addressed.

4. Community Outreach

4.1 Introduction

A thorough community outreach effort was conducted to understand how various stakeholders view the possibility of a new Metra station in the area. This engagement effort began with an awareness campaign to ensure all relevant community members knew that the project was underway and understood the associated goals and timeline. From there, several channels were used to gain input and understand the key issues and concerns of the community. The methods and findings of this outreach effort are summarized in this chapter.

This chapter will cover the following topics:

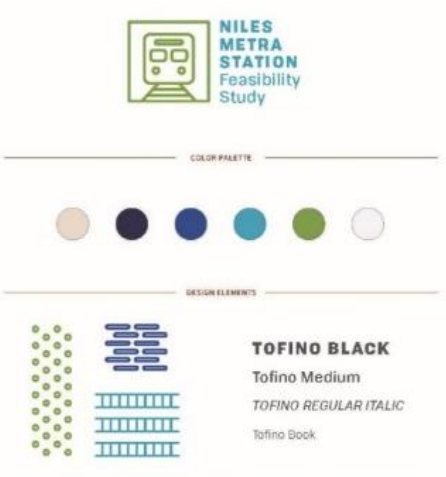
- Project Branding and Website
- Social Media Campaign
- Awareness within Skokie and Among Local Businesses
- Online Survey Responses
- Website Responses
- Community Open House Input

4.2 Project Awareness

The baseline of any community engagement effort is awareness—ensuring the public knows that a process is ongoing and having project information easily accessible and marketed to the community. The following key tactics were used to achieve awareness of this feasibility study.

4.2.1 Project Branding and Website

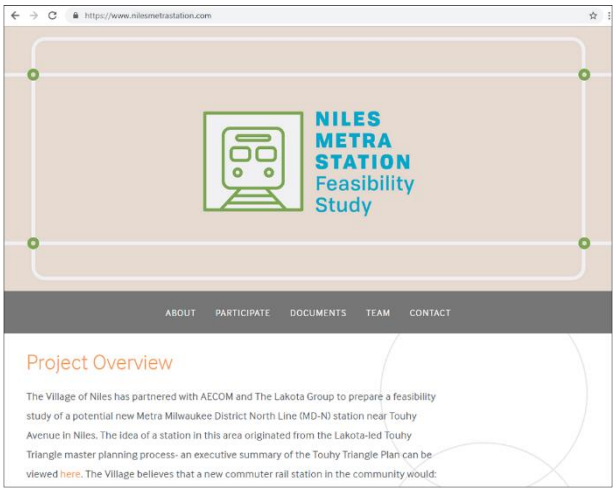
Figure 4-1: Project Branding

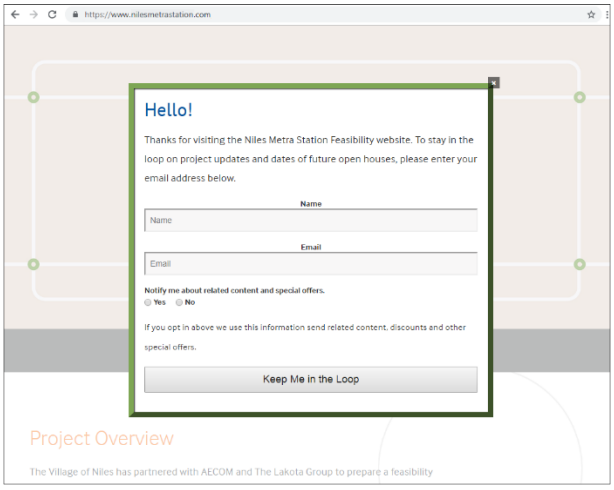


To provide information for interested residents and stakeholders in a consistent and clear manner, a project brand was designed (Figure 4-1). This brand included colors and type treatments in keeping with the Village of Niles' brand—which included a range of blue and green tones and a bold, sans serif font. The blue from the Metra logo was also used to draw a visual connection to Metra train service. Simple, line drawn icons and illustrations reference train elements, while still remaining colorful, graphic, and clear.

With the project brand as a starting point, a branded website (Figure 4-2) was developed to house information and generate buzz around the project. A custom domain name was purchased to ensure the URL was easy to remember and easy to find—www.NilesMetraStation.com. The project website was updated on a regular basis to include links to the online survey, information about the open house, and a catalog of documents and technical memoranda related to the project. The website included a pop-up that asked page visitors to enter their email to stay up to date with the project and featured a contact section where page visitors could ask questions or share their thoughts about the project. As of March 8, 2019, the project website had **1,740 page visits**.

Figure 4-2: Project Website





4.2.2 Social Media

Figure 4-3: Project Facebook Page

In addition to the project website, a project Facebook page was developed. This Facebook page was co-hosted by The Lakota Group and the Village of Niles, in collaboration with the Village of Niles Communications Coordinator. The page was promoted to Facebook users who live within 10 miles of Niles and was shared with local business owners and their employees. In the period between June 6, 2018 and March 8, 2019, the Niles Metra Station Feasibility Study Facebook page had 45 likes, 87 page views and had reached 2,658 Facebook users.

Links to the project website and project Facebook page were also shared on the Village's Twitter and LinkedIn pages, and posted to local community forums such as Next Door.

4.2.3 Awareness with Skokie and Local Businesses

As has been noted earlier in this document, analysis suggests that a majority of the projected users of a Niles Metra station originate in Skokie—approximately 70% of the total existing origin riders. Given this, discussions were organized with the Village of Skokie to ensure they best understood the scope of the study and the impacts that a potential station may have on their community. Initial findings from the Market Assessment were shared with Village of Skokie staff, as was an overview of outreach efforts to date. Village of Skokie staff members were enthusiastic about the potential for a Metra station in this location, and eager to be involved where appropriate. The survey was shared with the Village and distributed via Village of Skokie newsletter, social media, and sent directly to large employers in the area. The possibility to expand the Niles Free Bus to include some stops in Skokie will be discussed by the Villages of Niles and Skokie if the proposed station comes to fruition.

Additionally, many businesses in the vicinity of the proposed Niles Metra Station were contacted by the Village and informed of the project. A number of these business owners and representatives

participated in interviews to discuss the potential benefits and impacts of this station, the form and results of which are presented in detail in section 4.3.3: Stakeholder Interviews.

4.3 Community Input

Through the duration of the project, various channels were used to solicit input from area residents and local business owners and employees. The following sections summarize the input received throughout the process.

4.3.1 Online Survey

An online survey was created through Survey Monkey to gauge community interest in a Metra Station on the Metra Milwaukee District North Line (MD-N) in the general location between Touhy Avenue and Howard Street. The survey was designed to be brief with questions strategically written by Lakota, AECOM, and the Village of Niles to provide insight into the most pressing questions.

The survey was shared via the project website, project Facebook page, through municipal newsletters, and distributed among employees of local businesses. The survey was opened to the public in May 2018 and closed in October 2018, with new respondents completing the survey on a regular basis. A total of **993 responses were collected**, including 531 people who indicated that they **work** in Niles, Skokie, or the surrounding area and 571 people who **live** in Niles, Skokie, or the surrounding area (Figure 4-5). Key findings from the survey are outlined below.

The majority of survey respondents, 61 percent, indicated that they are likely to use a station if it were added at this location (Figure 4-4). This question was used in certain instances to sort responses based on the response to this initial question.

Figure 4-4: Likelihood to Use Station

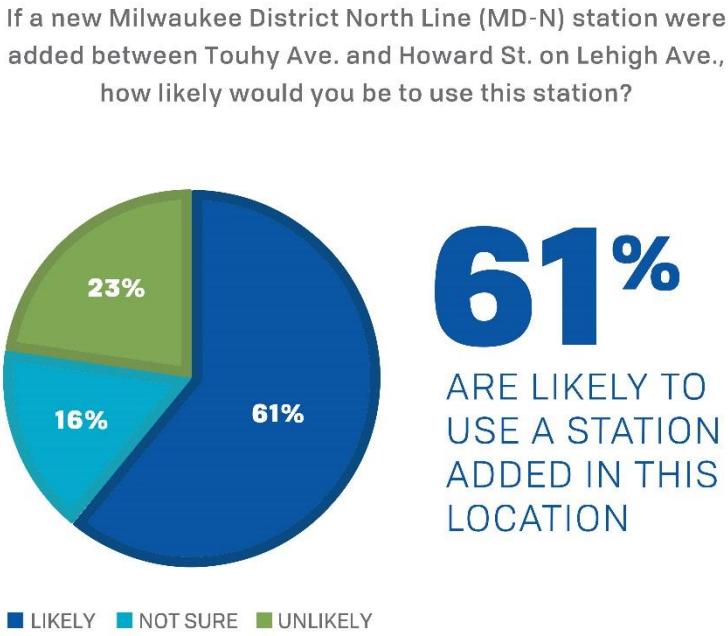


Figure 4-5: Respondent Profile

When asked about origin and destination in relation to a potential new Metra Station (Figure 4-6), the most common response was that the respondent worked nearby and would take the train to and from their home in the Chicagoland area—302 responses or 32 percent. When the 169 people who live/work in the Chicagoland area and would take the train to and from Niles for events are taken into account, a total of 49 percent of survey respondents would use a potential Niles station as a destination. Another 30 percent of respondents (286) who would use the station live nearby and would take the train to work downtown, using the station as a trip origin.

Figure 4-6: Respondent Origin and Destination

Of the 202 respondents who answered Other, 77% provided an open-ended response. The majority of these responses were that they live nearby and would use the Niles station to travel to Chicago for non-work purposes. One-quarter of respondents indicated that they would not use the station.

When asked how respondents would access the station (Figure 4-7), 40 percent said they would drive and park, while 32 percent said they would walk. The high percentage of those walking to the station is indicative of the fact that many of the survey respondents work near the station and could easily walk to and from the station. While just 17 percent indicated that they would likely take a bus shuttle and only three percent would bike, detailed questions about transportation options to and from the station revealed more nuanced behaviour.

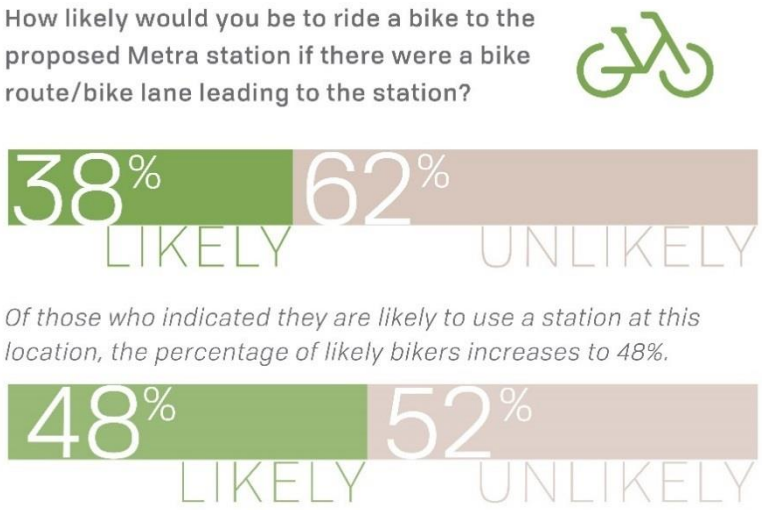
Figure 4-7: Access to the Station

Most survey respondents do not currently ride the Niles Free Bus (93 percent) (Figure 4-8). However, 59 percent indicated that they would be likely to ride a free bus shuttle to and from the station if it were an option.

Figure 4-8: Bus Shuttle Use

If the proposed Metra station were accessible by bike, 38 percent of respondents indicated they would be likely to ride a bike to the station (Figure 4-9). However, when survey responses were filtered to only include those likely to use the station, the percentage of those likely to bike increased to 48 percent.

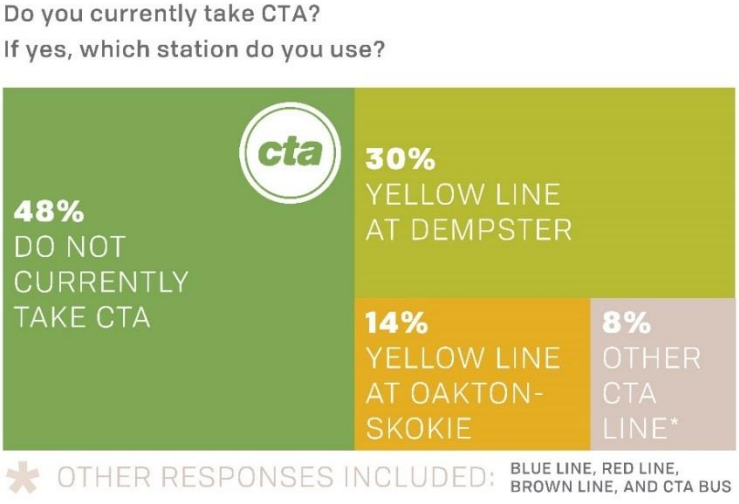
Figure 4-9: Bike Ridership



Finally, the survey asked about current transit use of Metra and CTA (Figure 4-11 and Figure 4-10). The majority of survey respondents do not currently take Metra or CTA—60 percent and 48 percent respectively. Of those survey respondents that do take Metra, the station most commonly used is Morton Grove, with 147 responses. Among CTA riders, the most commonly used station is the Yellow Line at Dempster, with 155 responses.

Figure 4-11: Metra Ridership

Figure 4-10: CTA Ridership



4.3.2 Website Response

The project website includes a form for page visitors to submit questions and concerns. Twelve responses were received from the website, which included notes from those in support of the station and those against the station—largely due to potential traffic impacts on adjacent Touhy Avenue. Below is a representative sampling of responses received:

> *"I used to ride Metra from the Morton Grove station. I would like to but Metra makes it very difficult for me. There is limited parking! This is the main issue."*

> *"I strongly support a new Metra Milwaukee District North Line commuter station erected near Touhy Avenue. We have many people in the Shure building who need that option and will create revenue for Metra as well. If I had this option, I would totally take the train in to work."*

> *"Not sure how I feel, need to see proposed location and the changes and the effects it would have on traffic."*

> *"I would hope the traffic signal would be programmed to behave the same as Lehigh and Devon to give Lehigh the "green" when the train is in the station."*

> *"Howard and Touhy are already overcrowded especially when trains pass to/from Dempster and Devon. Several freight trains also use the same tracks and often stop which totally blocks traffic."*

4.3.3 Stakeholder Interviews

The Village of Niles arranged meetings with several large employers within a close vicinity to the station. A series of meetings were conducted over two days. The following key themes emerged from these discussions.

4.3.3.1 Ability to Recruit Talent

Many of the employers described challenges they face associated with recruitment. In some cases, recruiting temporary workers was described as difficult, as these workers often cannot afford cars, and traveling to Niles via bus can result in long commute times. Other employers whose professional workforce is largely composed of millennials expressed concern with future recruitment after relocating to Niles. Many applicants and existing young employees live in the city and do not want to own a car. The ability to advertise a nearby Metra station would be valuable in future recruitment and retention efforts.

4.3.3.2 Various Uses of a Potential Metra Station

While the focus of the interviews was investigating the potential benefit to employees who could use a Metra train station as part of their commute, other benefits to companies were explored. Several business owners expressed interest in using the train to go downtown for company events and meetings. Additionally, when clients are visiting companies located in Niles, they often stay downtown. A nearby train station would make visiting Niles businesses more convenient for clients, as well as useful for client outings.

Another goal of a Metra station in Niles is to serve as the catalyst for future development, as outlined in the Touhy Triangle Plan. Many stakeholders were eager to see elements of this plan

come to fruition. The potential for a new hotel in the Triangle was met with great interest from all stakeholders interviewed. Expanded entertainment options that could come with new development, such as bars, restaurants, and programmed open space, were also seen as a benefit to local employers and their employees.

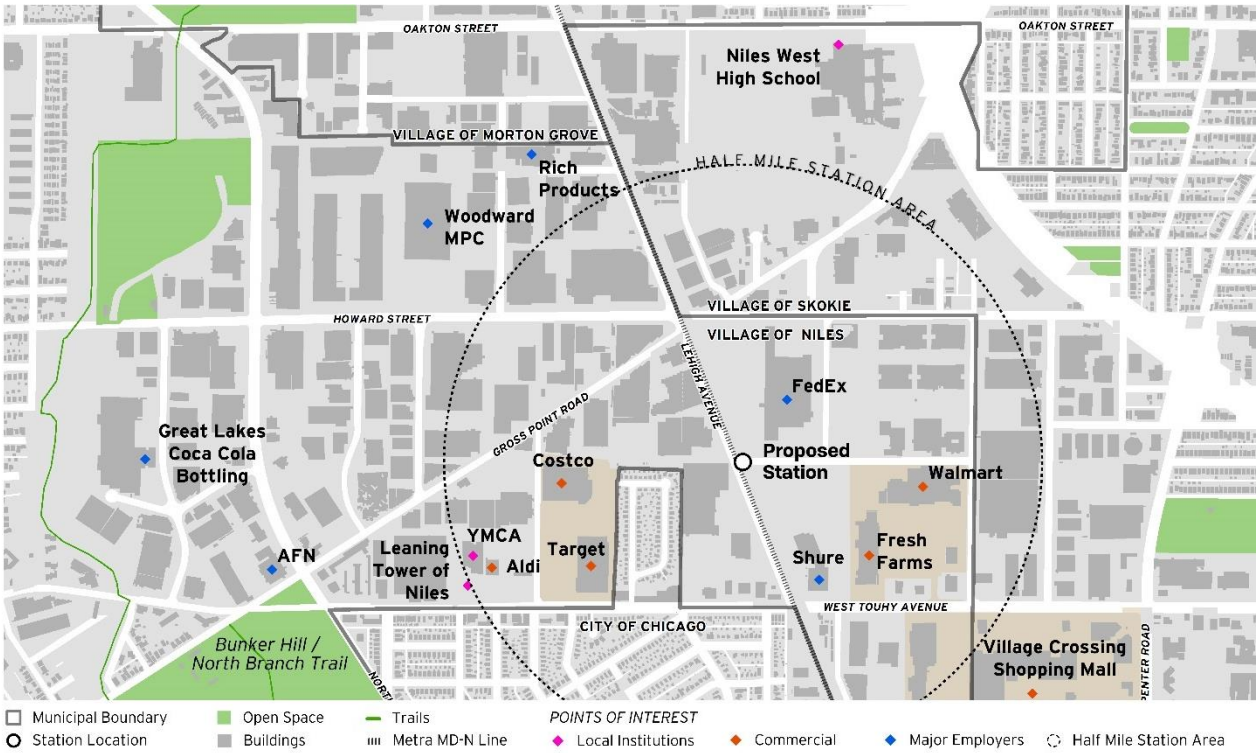
4.3.3.3 Plans to Stay in Niles

Of the local employers interviewed, none indicated any intention of leaving Niles. Major investments have been made to each company's facilities—investments that make it very costly and therefore unlikely for them to move locations. Many local businesses also mentioned plans for future expansion and renovation. Though their location in Niles is perceived to be stable, these businesses indicated that their ability to grow and retain a young workforce into the future is hindered by a lack of access to transportation. This lack of access to transportation may also hinder the growth of future office development in Niles.

4.3.3.4 Last Mile Challenges

Many of the employers in the area are located just beyond the half-mile radius of the proposed station, which is commonly accepted as a typical walk distance to a Metra Station (Figure 4-12). Providing additional connections between the station and these sites— often referred to as the "last mile"—will be critical. Local businesses were interested in the potential for the Niles Free Bus route to include a stop at the station to help provide that last-mile connection, as well as the possibility of a shuttle service to connect local employees to the station. Several business owners expressed potential interest in helping to fund such a shuttle service. Business owners and representatives also spoke of the creativity of their employees in completing that last mile. Examples of such creativity include employees who take the CTA Blue Line and bike the rest of the way to Niles, or those who take Metra to another station and keep an inexpensive car there to get to and from work.

Figure 4-12: Key Employers in Station Area



4.3.4 Open House

A Community Open House was held on Wednesday, November 28th, from 6-8pm at the Niles Senior Center. The open house was designed to present the findings of the study in a graphic and easy to understand manner, and to address many of the concerns heard throughout the process. A Facebook event was created for the open house, which was shared through the project Facebook page, as well as through the project website. Branded email announcements were sent out to 498 people who submitted their email addresses through the survey and the project website. Flyers and posters were hung in various Village of Niles' buildings, and the event was listed on the Village's online calendar of events. The Facebook event was also shared on NextDoor, which is how several attendees mentioned that they heard about it.

Approximately 15-20 people attended the Community Open House. Staff members from The Lakota Group, AECOM, and the Village of Niles walked attendees through the various stations and answered questions as they came up. Many area residents were concerned about how the station would impact traffic on Touhy Avenue, and where parking for the station would be located. Gate downtimes impacting Lehigh were also discussed as an issue that the Village should address if the station were to move forward. Plan diagrams outlining a vision for transit-oriented development in the area helped to answer questions about where parking would be located and raised questions about the impact that new residential might have on schools. While some were concerned about the impact that a train station and new development would have on their community, others were excited to see bold ideas proposed that paint a vibrant picture for the future of Niles.

Figure 4-13: Community Open House

Photo by Tom Robb, Journal & Topics

4.4 Community Outreach Summary

The community outreach conducted as a part of the Niles Metra Station Feasibility Study revealed several key findings:

- There are many groups invested in the outcome of this study, including residents of Niles, Skokie, and Edgebrook, workers in Niles and Skokie, business owners in Niles and Skokie, and the municipalities of Skokie, Niles, Morton Grove and the neighborhood of Edgebrook. These groups all see benefits of a station through different lenses.
- While the potential for a Niles Metra Station is attractive to many in the area, the potential for redevelopment of the Touhy Triangle is seen as equally exciting. Community members understand that the station could act as a catalyst for growth and see improvements in the internal road network and increased amenities such as dining, entertainment, and hotels in the Triangle plan as important additions to their community. The proposed station could provide a significant boost in implementing that vision.
- While the proposed Niles Metra Station may serve riders who currently use other Metra or CTA stations, many survey respondents do not currently take either Metra or CTA. If these respondents constitute a representative sample of the population, this suggests that a Niles Metra Station may have limited the impact on those alternative transit services.
- The biggest concern among community members is the impact on traffic on Touhy Avenue. While this feasibility analysis looked at the impacts that a Metra station would have on traffic as well as changes in gate downtimes on Touhy and Howard, it does not include a full analysis of how gate downtimes or potential new development would impact local traffic. Given that traffic on Touhy Avenue is already an issue, additional studies that look more in depth at how local traffic patterns can be improved would be beneficial. Mitigating traffic impacts through a more dispersed circulation network and establishing development patterns less reliant on automobile use are key components of the Village's plans for the Touhy Triangle.
- Survey results show the potential for the Niles Station to be a strong destination station. The use of the Niles Metra Station as a destination station would boost the local employment base, improving the area's overall economic strength. For the proposed Niles Station to be used as a destination station, last-mile connections between the station and area businesses are critical. Improvements to pedestrian and bike infrastructure are a key part of those connections.

5. Travel Demand & Operations Impacts

5.1 Introduction

This chapter will address the issue of potential demand of a new station and the operations impacts that could be involved. It will cover the following topics:

- Summary of the possible schedule of MD-N service including a Niles station
- A general discussion of station demand, and methodologies to predict boardings for a Niles Station
- Results of the application of the FTA Simplified Trips-On-Project (STOPS) model
- Results of a regression analysis of existing Metra station data
- Conclusions regarding station area demand, how it compares with other Metra stations
- Analysis of mode of access and egress demand, and the need to design station elements to address this demand
- The impact of a new station on current MD-N ridership
- Assessment of the operational impacts of the Niles Station on the MD-N, Amtrak, and freight service

5.2 MD-North Line Background

The MD-N Line is one of eleven lines that Metra operates. The Metra system is configured as a hub-and-spoke system, with the hub in downtown Chicago. The MD-N Line extends 49.5 miles north-northwest from Chicago's Union Station (CUS) to Fox Lake. The MD-N Line provides service to 20 intermediate stations between CUS and Fox Lake with service to the northwest side of Chicago, northern Cook County, and Lake County (see Figure 5-1).

Figure 5-1: MD-N Line

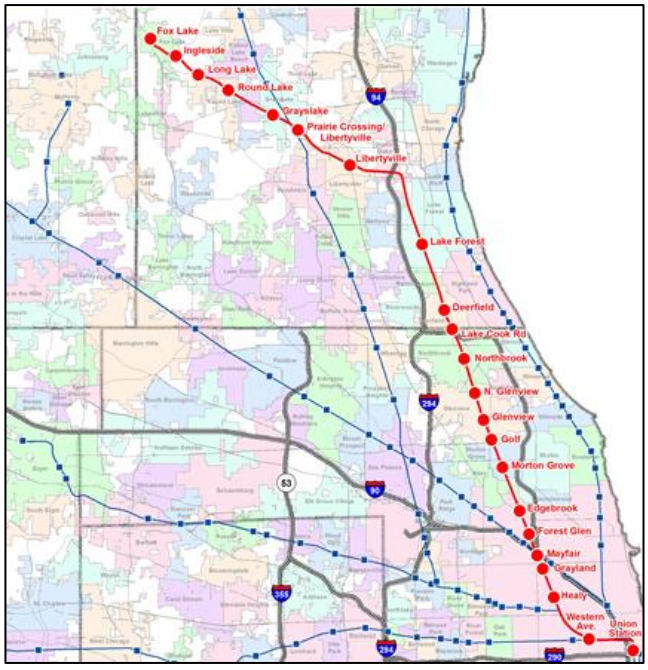


Image source: Metra

The Milwaukee District North (MD-N) and Milwaukee District West (MD-W) Lines were acquired by Metra in 1987 following the bankruptcy of the Milwaukee Road (the Chicago, Milwaukee, St. Paul and Pacific Railroad). Both Milwaukee District Lines are operated and maintained by Metra employees and commuter trains on both lines are dispatched by Canadian Pacific Railway (CP) from Minneapolis. Maintenance and daytime storage of all Milwaukee District trainsets, as well as trainsets serving the Metra North Central Service (NCS) and Heritage Corridor lines, take place at the Western Avenue Yard, located approximately three miles west of CUS. MD-N Line trainsets are stored overnight at the Fox Lake Yard, just east of the station in Fox Lake.

The MD-N line has three distinct segments:

- Fox Lake to Rondout Junction: 17.5-mile single-track branch line, known as the Fox Lake Subdivision
- Rondout Junction to Junction A-5: 26.6-mile double-track main line
- Junction A-5 to CUS: 5.4-mile triple track main

MD-N trains share the last 5.4 miles south of Junction A-5 with the MD-W and North Central Service (NCS) trains. Amtrak owns the final 0.5 miles to CUS. All three lines use the Western Avenue Station (milepost 2.9), in addition to CUS.

Besides Metra commuter service, the main line segment of the MD-N to Rondout handles Amtrak's Hiawatha and Empire Builder trains, which terminate at CUS and also stop in Glenview. In addition, a limited amount of freight traffic is operated by the CP and the Wisconsin & Southern Railroad (WSOR) over the MD-N. The CP's traffic is heaviest between Rondout and Junction A-20 in Northbrook. WSOR also operates over the Fox Lake Branch.

The numbers of trains operated on the line by direction are provided on Table 5-1. Breakdowns by service type/operator indicated that Metra service accounts for 73 percent of the trains.

Table 5-1: Milwaukee North Corridor Weekday Trains

	Inbound	Outbound	Total	% of Total	*Source*
MD-N	31	30	61	73%	*Metra timetable effective February 5, 2018*
Amtrak Hiawatha	7	7	14	17%	*Amtrak timetable effective June 18, 2018*
Amtrak Empire Builder	1	1	2	2%	*Amtrak timetable effective April 29, 2018*
CP Freight	2	2	4	5%	*Metra, Between A-20 and A-5*
WSOR Freight	1	1	2	2%	*Metra*
Total	**42**	**41**	**83**	**100%**	

5.3 Proposed Schedule

As described above in Chapter 3, an evaluation of alternative station sites recommended the location at Jarvis Avenue (milepost 12.9, the distance to CUS). The site is 1.4 miles south of the Morton Grove Station and 1.3 miles north of the Edgebrook Station. The development of a schedule that included service to the proposed Niles Station was based on selecting existing MD-N trains to serve Niles. The general goals that guided the schedule development included:

- Limiting travel time increases on trains serving Niles to two minutes: adding two minutes to southbound trains leaving Morton Grove, and adding two minutes to northbound trains leaving Edgebrook
- Avoiding disruption of express service through this segment of the MD-N Line (i.e., "zone express trains") by minimizing Niles stops for such trains
- Targeting average service levels at the Niles Station of 30-minute headways in the peak and 60 minutes off-peak (headway is the space in minutes between trains)
- Maximizing the number of potential suburban riders who could use the Niles Station to reach local destinations by creating a mix of trains serving Fox Lake Branch stations (i.e., Fox Lake-Libertyville) and Main Line Stations (Lake Forest-Morton Grove)

- Serving the majority of stations in Chicago to maximize the potential reverse commuter origin passengers who could use Niles to reach local destinations.
- Connecting all trains serving Niles with the CUS and Western Avenue Stations to serve the Metra traditional commuter travel market.

Table 5-2 presents the numbers of MD-N trains proposed to serve the Niles Station by service period.

Table 5-2: MD-N Weekday Trains by Service Period, All vs Trains Serving Niles

	Inbound		Outbound		Total	
Service Period*	MD-N	Niles	MD-N	Niles	MD-N	Niles
AM Peak	12	6	5	5	**17**	**11**
Midday	7	7	6	6	**13**	**13**
PM Peak	6	4	13	6	**19**	**10**
Evening	6	6	6	6	**12**	**12**
Total	**31**	**23**	**30**	**23**	**61**	**46**

*Service Periods (based on downtown terminal time): AM Peak-Start of service to 9:15 AM; Midday-9:16 AM to 3:29 PM; PM Peak-3:30 PM to 6:45 PM; Evening-6:46 PM to end of service.

The current MD-N schedule includes 61 trains on weekdays, of which 46 are proposed to stop at the Niles Station. All Saturday and Sunday trains would serve Niles.

Table 5-3 includes the estimated minutes between trains serving the Niles Station. As can be seen, headways during the peak period/peak direction (AM-Peak Inbound and PM Peak Outbound) have the shortest average times between trains (30 and 34 minutes, respectively). Off-Peak period headways are consistent with most Metra station service levels.

Table 5-3: Proposed Niles Station Weekday Headways in Minutes

	Inbound	Outbound
AM Peak	30	30
Midday	56	60
PM Peak	43	34
Evening	56	65

The range in travel times from Niles to CUS is between 31 and 36 minutes, with an average travel time of 34 minutes. Outbound minimum and maximum travel times are 25 and 29 minutes, and an average of 28 minutes. In contrast, drive times for the same trip typically take between 40 and 90 minutes, depending on roadway congestion. Travel by Pace bus and CTA rapid transit service takes roughly one hour. Traveling from the potential Niles Station area by Pace bus to travel from another Metra station also takes roughly one hour.

The potential Niles station would be in Fare Zone C, with associated fares based on 2018 rates shown in Table 5-4. Multi-ride tickets and monthly passes reduce the average fare per ride for frequent users. As a point of comparison, an alternative to Metra for a downtown commute would be a trip that includes a Pace or CTA bus segment and transfer to CTA Rail to reach downtown. This would cost $2.75 to $2.80 depending on the route, and would take over one hour at current service levels (versus 31 to 36 minutes for a Metra trip from Niles). However, Pace-CTA Rail travel times may improve with the implementation of Pace Pulse service along Milwaukee Avenue in 2019.

Unlimited CTA/Pace passes can reduce the average fare per ride for frequent users; a 30-day pass is $105. Monthly per ride figures assume that the pass is used exclusively for twice-daily commutes. CTA rail service on the east end of the Niles market shed is provided by the Yellow Line with stations at Dempster and Oakton, and there are bus connections to the Jefferson Park Blue Line Station to the south.

Table 5-4: 2018 Comparative Transit Fares

	Ticket Type	Ticket	Per Ride
Metra	One-Way	$5.50	$5.50
	Ten-Ride	$52.25	$5.23
	Monthly	$159.50	$3.75
	Weekend	$10.00	
Alternative Transit	CTA Rail	$2.50	$2.50
	CTA Bus	$2.25	$2.25
	Pace Bus	$2.00	$2.00
	Transfer	$0.30	$0.30
	30-day CTA/Pace	$105.00	$2.47

5.4 Travel Demand

Two methodologies were used to estimate potential use of the proposed Niles Station.

- STOPS Model – Ridership was estimated using the Federal Transit Administration (FTA) Simplified Trips-on-Project Software (STOPS) model. A version of STOPS that was adapted to the Chicago metropolitan area by the Regional Transportation Authority (RTA) was used.
- Regression Model – This tool built on work developed for the Metra Station Optimization project, and involved expressing a statistical equation that correlated characteristics of Metra stations to the level of reported boardings.

5.4.1 STOPS Model

The FTA developed STOPS for project sponsors to evaluate and rate proposed major transit projects. The model is fundamentally a conventional “4-step” model that considers zone-to-zone travel markets, uses a conventional mode choice model to predict zone-to-zone transit travel, and assigns trips to fixed guideways in the transit network. The model uses worker flows (i.e., residence and work locations) from the Census Transportation Planning Package (CTPP). To represent the transit system in the model, data from the General Transit Feed Specification (GTFS) that are available from local transit providers is used. It also relies on the regional travel model for estimates of roadway travel times and distances.

The version of the model used for the Niles forecasts was obtained from the RTA, who led an effort to establish a consistent set of inputs to represent a "base case" scenario within the STOPS environment of the entire RTA region. From this base scenario, build and no-build ridership forecast scenarios were prepared (i.e., scenarios with and without a Niles Station). RTA’s objective was to allow transit operators, planners, and advocacy groups to explore transit improvements in a manner that produces reliable and comparable estimates across the Chicago region.

The RTA version of the model already includes 2040 socio-economic data (using CMAP’s 2040 population and employment forecasts). As is discussed below, an alternative scenario was

developed as part of the Touhy Triangle Plan, and was applied in another Build model run. The RTA model also has automobile travel times from CMAP that are built into the STOPS model.

The model output was the estimated boardings at the two stations adjacent to Niles (i.e., Morton Grove and Edgebrook) without Niles, and then the three stations including Niles. Forecasts were made for two time points: 2015 (representing the base year) and 2040 (representing CMAP's planning horizon year at the time the analysis was conducted). A 2040 model run also included a variant where socio-economic forecasts for one travel analysis zone (TAZ) were modified to account for potential growth from the Touhy Triangle development not explicitly in the MPO forecasts. In this part of the Chicago area, zones are one square mile, and the affected zone (TAZ 539) is bounded by Central Avenue on the east, Oakton Street to the north, Nagle Avenue on the east, and Touhy Avenue south (see Figure 5-2).

Figure 5-2: TAZ 539

Table 5-5 shows different population and employment 2040 forecasts for TAZ 539, which encompasses much of the Touhy Triangle planning area. In Chapter 3, this alternative was named Scenario C. It should be noted that the 2015 and 2040 CMAP figures assume the area remains predominantly industrial/office. Scenario C was an outgrowth of the community's intent to transition the Triangle into a mixed-use center (including multi-family residential). The population is based on 1,600 additional multiple family units; employment is based on building footprint growth in office, commercial, and hotel uses.

Table 5-5: 2040 Socio-Economic Scenario for TAZ 539

	Population	Employment
2015	478	10,284
2040 – CMAP	503	11,997
2040 - Scenario C	3,303	13,706

The future-year model runs assumed the existing transportation system without (No-Build) and with (Build) the Niles station. In addition, the Pace Pulse Milwaukee Line Route 270, which is scheduled to open in 2019, was also assumed to be part of the existing transportation network for the 2040 forecasts. The Pulse infrastructure improvements to Milwaukee Avenue between the CTA Jefferson Park Station and Golf Mill Shopping Center will result in faster and more frequent service.

The model results presented in Table 5-6 indicate that the Base Year No-Build estimates for Morton Grove and Edgebrook understated boardings compared to actual reported measurements by 18 percent and 46 percent, respectively. Travel demand models are known to be less reliable in predicting ridership at the individual station level as compared to the route or segment level. In the Base Year Build run (2015 model run with the proposed Niles station), the STOPS model estimates 1,040 boardings per day at Niles, with a ridership reduction of 14 percent (110 boardings) at adjacent Morton Grove and an increase of 3 percent (10 boardings) at Edgebrook. Ridership in 2040 under the Scenario C socio-economic forecast would be 1,380 boardings per day at the Niles Station. Boardings at Morton Grove would be 150 lower with the Niles Station, and Edgebrook

would be 30 boardings higher. The results also indicate a net growth in 2040 boardings for the three stations of 1,260 compared to the 2040 No-Build. The No-Build and Build 2040 forecasts assume that the Pace Pulse Milwaukee Line in in operation.

Table 5-6: Niles Station Weekday STOPS Boarding Forecasts

Base or Forecast Year	Model Run	Morton Grove	Niles Proposed	Edge-brook	Total	Net Change
2016	*Reported Boardings*	*969*	--	*609*	*1,578*	
2015	Modeled No-Build	790	--	330	1,120	
2015	Modeled Build	680	1,040	340	2,060	940
2040	Modeled No-Build	1,010	--	400	1,410	
2040	Modeled Build – CMAP & Scenario C	860	1,380	430	2,670	1,260

Table 5-7 breaks down 2040 Boardings for Niles and the two existing adjacent stations by three access modes, including Walk, Kiss-n-Ride, and Park-n-Ride. As can be seen, the Walk mode accounts for the greatest number of riders; this figure includes those arriving at the station by bus and walking to the platform, thus potentially having negligible impact on area roadways or parking lot usage. Parking demand at Morton Grove is forecasted to decline significantly, the assumption being that most of those Park-n-Ride users are expected to park and board at Niles instead.

Table 5-7: Niles Station 2040 STOPS Boarding Forecasts by Access Mode

Access Mode	Model Run	Morton Grove	Niles (Proposed)	Edge-brook	Total	Net Change
Walk	2040 No-Build	680	--	300	980	
	Build-Scenario C	700	730	270	1,700	720
Kiss-n-Ride	2040 No-Build	160	--	0	160	
	Build-Scenario C	140	20	0	160	0
Park-n-Ride	2040 No-Build	180	--	100	280	
	Build-Scenario C	20	630	150	800	520
Total	2040 No-Build	1,010	--	400	1,410	
	Build-Scenario C	860	1,380	430	2,670	1,260

5.4.2 Metra Ridership Regression Model

This model was created as part of the Metra Station Optimization Study to evaluate whether Metra stations are achieving an expected level of performance based on station area characteristics and service levels. The regression equation was developed using current station- and system-level data gathered as part of the Station Optimization Study; it adapted the statistical approach outlined in "Sketch Models to Forecast Commuter and Light Rail Ridership: Update to TCRP Report 16" (2006) to best suit the data available and goal of that Study. The independent variables for each station that were ultimately used included:

- population in non-overlapping market sheds,
- parking capacity (in spaces),
- average weighted travel time to downtown (in minutes),
- average weighted speed to downtown (MPH),
- midday headway (in minutes),

- zero-car household share in half-mile station area,
- jobs in half-mile station area,
- distance (in miles) to nearest station,
- distance (in miles) to nearest CTA station,
- total inbound trains stopping at station, and
- number of CBD workers living in origin-defined market shed.

Several versions of the regression equation were developed to produce ridership estimates tailored to different station categories, as defined by Metra. Those categories are listed in Table 5-8. Suburban stations are grouped by fare zones to approximate distances and comparative travel costs. Fare zone groupings are effective 2017. Stations were categorized as “residential” if at least 40 percent of the land use within a half mile was classified as residential. Destination stations were defined as stations at which alightings exceed boardings during the AM Peak period. According to these groupings (and without information on the potential ratio of alightings to boardings in the AM Peak), the potential Niles Station would fall in Category 6: Suburban Fare Zone B-D – Non-Residential. Morton Grove was also classified in Category 6, and Edgebrook Category 5, Chicago – Non-Residential.

Table 5-8: Station Categories

Station Category	Definition	Number of Metra Stations
1	Chicago – Residential	39
2	Suburban B-D – Residential	46
3	Suburban E-G – Residential	38
4	Suburban H-M –Residential	14
5	Chicago – Non-Residential	22
6	Suburban B-D – Non-Residential	24
7	Suburban E-G – Non- Residential	18
8	Suburban H-M – Non-Residential	20
9	Destination	13

Source: Metra Station Optimization Study

Data specific to the potential Niles Station and adjacent MD-N stations were input into the category calibrations of the model and the ridership results are summarized in Table 5-9. The original market shed numbers for Edgebrook and Morton Grove were recalculated to match the new station market shed boundaries as developed in the Existing Conditions and Market Assessment Technical Memorandum. Table 5-9 shows that the regression equation estimated No-Build boardings are lower than observed (Morton Grove: 6 percent lower and Edgebrook: 33 percent lower). This variance was smaller than the boardings variance that was estimated using the STOPS model.

For the Base Year Build condition, Table 5-9 indicates that the Niles station would have 450 estimated boardings. The combined boardings for the three stations were estimated at 1,560, or 240 higher than the No-Build scenario.

Table 5-9: Total Boardings Regression Equation Results - Base Year

	Model Run	Morton Grove	Niles Proposed	Edge-brook	Total	Net Change
2016	*Reported Boardings*	*969*	*-*	*609*	*1,578*	
2015	No-Build	910	-	410	1,320	
2015	Build	780	450	330	1,560	240

Similar to the application of STOPS, 2040 boardings were based on CMAP socio-economic forecasts plus the Scenario C adjustment for TAZ 539. For the regression independent variable "CBD workers living in origin-defined market shed," 2040 downtown workers residing in the Morton Grove, Niles, and Edgebrook market sheds were estimated by applying the Base Year share of CBD workers (unique to each station's market shed) to the 2040 total employment by shed. This likely understates the demand for a Niles station, since the presence of the station would make this a more attractive area for downtown Chicago workers to reside, and thus the share would be expected to rise in the future. Table 5-10 reveals that the regression equation forecasts 2040 Niles boardings at 460, assuming the CMAP socio-economic forecasts adjusted for TAZ 539 (Scenario C). This translates to a net growth of 230 with the Niles Station, which is believed to be a conservative estimate due to assumptions made regarding CBD worker share in the station's market shed and the role of the Niles station as a destination station for the reverse commute market. In addition, while the population growth in Scenario C was significant for the affected area of the Triangle, the impact to the market shed overall was comparatively small. Unlike the STOPS model, which considers growth in population and jobs for individual TAZs, the regression approach treated these socio-economic changes on a lump sum basis, and was not sensitive to the location of the changes (i.e., whether they were adjacent to the station or farther away in the market shed).

Table 5-10: Total Boardings Regression Equation Results - Horizon Year

	Model Run	Morton Grove	Niles Proposed	Edge-brook	Total	Net Change
2040	No-Build	930	-	450	1,380	
2040	Build – CMAP + Scenario C	790	460	360	1,610	230

5.4.3 Estimated Destination Riders

As elaborated in Chapters 3 and 4, the Niles station market shed contains a significant amount of employment-based land uses, and stakeholder interviews documented strong interest in the Niles Station from area employers. A regression equation was formulated to estimate the destination ridership market, which would be distinct from the traditional downtown commuter market. In this case the dependent variable was AM peak-period alightings to represent workers in the station area, and numerous independent variables were considered: jobs, acreage of commercial and industrial space, bus connectivity, walkability scores, transit accessibility scores, number of attractions, and number of workers by distance and direction. Nine runs of the model were completed using data for all Metra stations, and after analyzing results for collinearity, significance, outliers, logged variables, etc., the final independent variables included in the optimal version were:

- high-wage jobs within one-mile non-overlapping destination market shed
- number of AM trains (inbound and outbound)

- walkability index values

The output of this model resulted in an R-squared value of 0.69 and standard error of 65. Ninety-two percent of stations had modelled AM alightings within 100 of observed AM alightings, and 75 percent of stations were within 50 alightings. Inputting the data for the potential Niles and adjacent MD-N stations generated the results in Table 5-11. While it slightly overestimates AM Peak alightings for Morton Grove, the results appears reasonable, with an estimated 190 weekday AM peak alightings at the proposed Niles Station.

Table 5-11: AM Alightings Regression Equation Results (Base Year)

	2015 Observed AM Peak Alightings	Estimated AM Peak Alightings (No-Build)	Estimated AM Peak Alightings (Build)
Edgebrook	30	30	20
Niles	--	--	190
Morton Grove	90	150	130
Total	**120**	**180**	**350**

In order to project the AM alightings out to 2040, it was necessary to estimate the future number of high-wage jobs in the one-mile non-overlapping destination market shed. To accomplish this, Scenario C Development Program office and retail inventory square footage was used to derive counts of workers using industry-typical average numbers of commercial square feet per worker. The summary of the results for the proposed Niles station is in Table 5-12. This yielded growth in Niles AM alightings from 190 to 240—a net change of 50 daily passengers alighting at the station.

Table 5-12: Projection of 2040 Niles Boardings Using AM Alightings Regression Model

	High-Wage Jobs in Niles Non-Overlapping Work Shed	Estimated Niles Station AM Alightings
Base Year (2015)	8,175	190
Scenario C (2040)	10,089	240
2015-2040 Growth	**+1,914**	**+50**

In order to best represent the potential ridership performance at the Niles station as a potential origin *and* destination station using the regression analysis approach, it appears reasonable to combine the regression modelled boardings with the regression modelled AM Peak alightings at the station. Note that AM Peak alightings are assumed equivalent to PM Peak boardings (i.e., local worker return trips using the affected stations). These destination trips were not specifically included in the Category 6 equation used to estimate Morton Grove Station boardings or the Category 5 equation for estimating Edgebrook Station boardings. Combining the two regression methods yields the estimated daily boardings presented on Table 5-13. The combined equations result in Niles station boardings of 640 in the Base Year and 700 in the Horizon Year.

Table 5-13: Combined Regression Equation Boardings – Category + Destination

		Morton Grove			Proposed Niles			Edgebrook			All Three Stations		
		Cat 6	Dest.	Total	Cat 6	Dest.	Total	Cat 5	Dest.	Total	Catg.	Dest.	Total
2015	No-Build	910	150	**1,060**				410	30	**440**	1,320	180	**1,500**
	Build	780	130	**910**	450	190	**640**	330	20	**350**	1,560	340	**1,900**
2040	No-Build	930	190	**1,020**				450	50	**500**	1,380	240	**1,620**
	Build – Scnr. C	790	140	**930**	460	240	**700**	360	20	**380**	1,610	400	**2,010**

5.4.4 Comparison of STOPS and Regression Results

Table 5-14 compares the forecasted station boardings between STOPS and the regression equations. The results show that the STOPS model predicts higher ridership for the proposed Niles station than predicted from the regression approaches. In addition, STOPS underestimated 2015 observed ridership by a greater degree than the regression approach. The average between the both methods is also shown.

Table 5-14: Comparison of Niles Boardings Estimates by Model

		Morton Grove			Proposed Niles			Edgebrook			Total		
		Regres-sion	Avg.	STOPS	Regres-sion	Avg.	STOPS	Regres-sion	Avg.	STOPS	Regres-sion	Avg.	STOPS
2015	*Observed*		***969***						***609***			***1,578***	
	No-Build	1,060	**930**	790				440	**390**	330	1,500	**1,320**	1,120
	Build	910	**800**	680	640	**840**	1,040	350	**350**	340	1,900	**1,990**	2,060
2040	No-Build	1,020	**1,020**	1,010				500	**450**	400	1,520	**1,470**	1,410
	Build – Scnr. C	930	**900**	860	700	**1,040**	1,380	380	**410**	430	2,030	**2,350**	2,670

Each method has certain strengths and weaknesses.

- The STOPS model is a standard, widely accepted model used for forecasting transit project ridership. However, there are limitations, including that as a sketch model, results are less precise at the station level. STOPS represents non-work trips less reliably than for work trips. Finally, future travel is based on existing travel patterns.
- The regression analysis is a simplified methodology that relies on comparable Metra station data. However, while Metra stations include common characteristics, there can be subtle differences that are not easily captured in a statistical analysis. Additionally, without actual origin data available (for a prospective station) to more precisely define the market shed, the model may be influenced by the estimated boundaries of the station's shed vis-à-vis neighboring stations. As noted above, the CBD employment variable for the future case was inferred by assuming the current proportion of local residents who work downtown. Finally, since the regression approach does not consider socio-economic changes at the individual zone level, the analysis was not sensitive to the assumption of new high density residential near the proposed station (i.e., Scenario C).

Since each approach offers comparative advantages over the other, it is recommended that the average be used as the estimated boardings for the proposed Niles station. The Metra Station

Optimization study addressed station forecasts in a similar fashion, presenting both STOPS model and regression results. In addition, use of the 2040 forecast that is based on the future Scenario C development is also recommended. Table 5-15 summarizes the average 2040 boardings. The difference between the Build and No-Build is 880 boardings per day or 160 less than the Niles station forecast. This amount represents future diversions from the two current stations.

Table 5-15: Summary of Forecasted 2040 Boardings (Average of STOPS & Regression Methods)

	No-Build	Build	Difference	% Diff.
Morton Grove	1,020	900	-120	-12%
Niles	--	1,040	1,040	--
Edgebrook	450	410	-40	-9%
Total	**1,470**	**2,350**	**880**	**60%**

Figure 5-3 shows the data in Table 5-15 in a bar chart form. Figure 5-4 compares 2015 and 2040 average modelled boardings by station.

Figure 5-3: 2040 Average Modelled Boardings by Station – Build versus No-Build

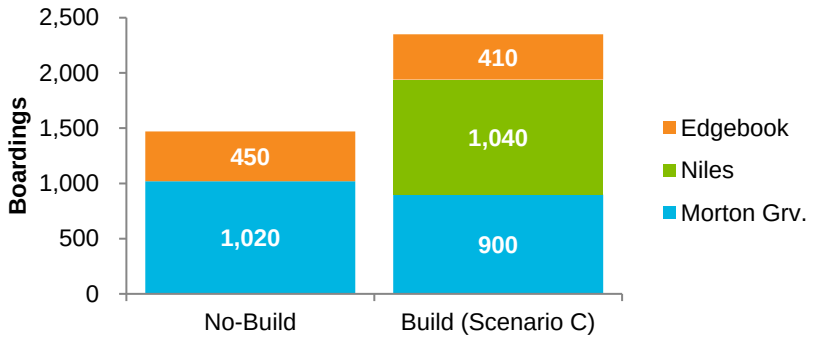
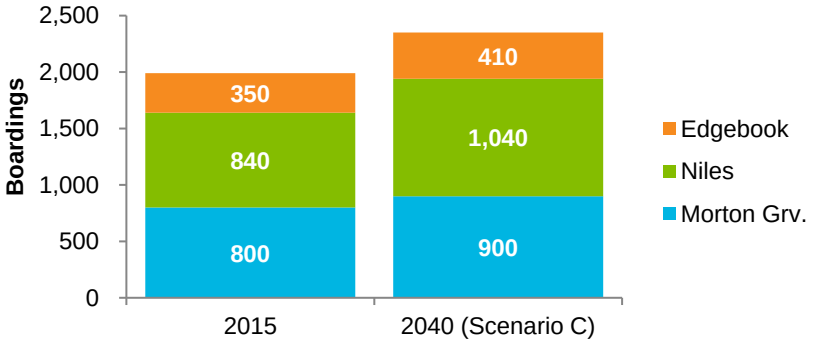


Figure 5-4: Average Modelled Boardings by Station – 2015 versus 2040



Compared to 2016 reported boardings, the Niles station at 1,040 would rank 50th among Metra's 234 non-downtown stations, or in the top 20% of all stations. Of other MD-N stations, Niles would rank sixth highest, exceeded by 2016 boardings at Glenview, Northbrook, Deerfield, Lake Cook Road, and Glen of North Glenview. The estimated 240 AM Peak alightings at Niles would be the tenth highest of all Metra non-downtown stations based on 2016 counts. AM Peak alightings were higher at Lake Cook Road (MD-N), Davis Street (UP-N), and Lake Bluff (UP-N).

5.5 Station Access and Egress

A key factor in successful station performance is the provision of infrastructure and services to facilitate convenient access and egress for users. The STOPS model results can offer insight into how riders would access the station, as shown on Table 5-16. Note that these mode percentages from STOPS were applied to the "combined model" estimated boardings presented in Chapter 5.4. The three modes are discussed below, along with another mode: bus service.

Table 5-16: Estimated 2040 Niles Station Boardings by Access Mode

Access Mode	STOPS 2040 % Share of Boardings	Estimated 2040 Boardings
Walk	54%	550
Kiss-n-Ride	2%	20
Park-n-Ride	45%	470
Total	**100%**	**1,040**

5.5.1 Walk Mode

The STOPS model predicted that the walk mode would have the highest proportion of riders at 54 percent. Riders using a bicycle are included here, as are those arriving at the station area via bus and walking to the station. Pedestrian and cycling recommendations include:

- Development designs of the Touhy Triangle that are sensitive to providing convenient pedestrian routes to the station
- A continuous sidewalk system along Lehigh Avenue
- Defined pedestrian connections to Shure and FedEx worksites and other walkable destinations
- Identification of a continuous system of sidewalks east on Jarvis Avenue
- Bike pathways to the station from within the Touhy Triangle plan
- A bikeway link to the station from the proposed bike lanes on Howard Street

Improved bus connections are likely to support non-automobile access to the station. Pace Bus has voiced its support for a Metra station at the desired location on Lehigh to improve transit access for the Village and spur economic development plans for the Touhy Triangle. The agency also reviewed bus-related recommendations developed as part of this study, including:

- Rerouting or extension of the Niles Free Bus route (Pace Route 410/411) to connect Village residents to the station and as a last-mile connection for local employees. Figure 5-5 shows the existing bus service in the station area.
- Formation of a partnership with the Village of Skokie to initiate a feeder bus route connecting Skokie residents east of the Eden's Expressway with the Niles Station. Alternatively, the existing Pace Routes 225 and 226 could be rerouted to include a stop at or near the Niles Station. These services could also be designed to serve as shuttles to local work locations.
- Development of employer- and/or municipality-sponsored shuttles to connect disembarking commuters to area employment centers.

Pace comments on the bus-related recommendations included the following points:

- Pace typically avoids deviating lower-frequency, regular fixed routes (such as the Niles Free Bus) to serve Metra stations when the associated wait times render linked trips unattractive for passengers and increase travel times for other through passengers.
- Changes to Routes 410 and 411 were implemented in 2016 to support the future Pulse Milwaukee Line.
- Route 290 Pulse Touhy Avenue may offer better options of transfers due to higher frequency levels. The intersection of Touhy and Lehigh is a potential site for the proposed Pulse Touhy stations.
- Routes 225 and 226 were proposed for restructuring as part of the *Pace / CTA North Shore Transit Service Coordination Study* (December 2017). Route 226 was proposed for discontinuation of service south of Oakton Street in Niles, and instead would extend east to the Howard CTA Station in Chicago (Figure 5-6). The portion of Route 226 with discontinued service would be served by Route 225, which would have all-day bi-directional service.

The issues raised by Pace will be carefully considered as part of future studies, should the Niles Station proposal advance.

Figure 5-5: Existing Bus Routes Serving the Station Area

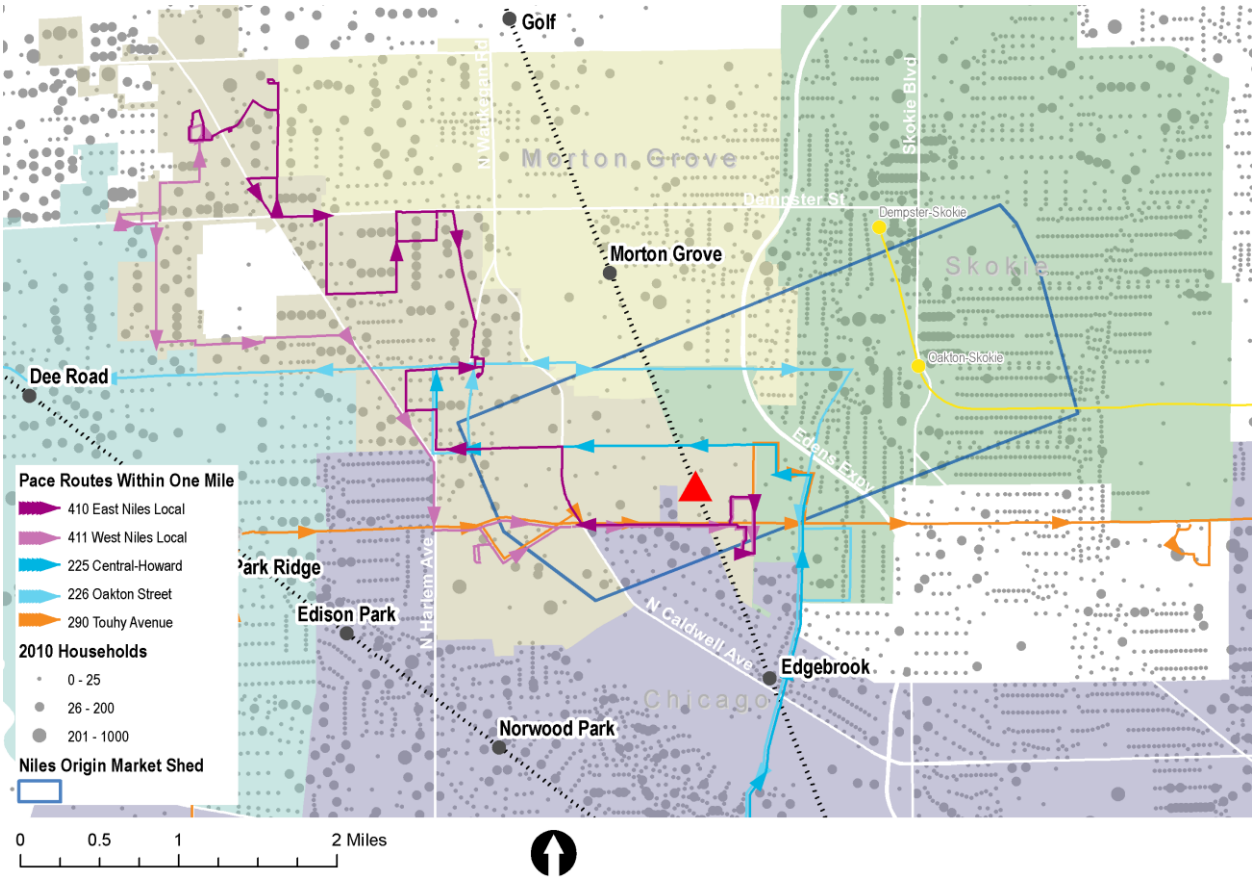
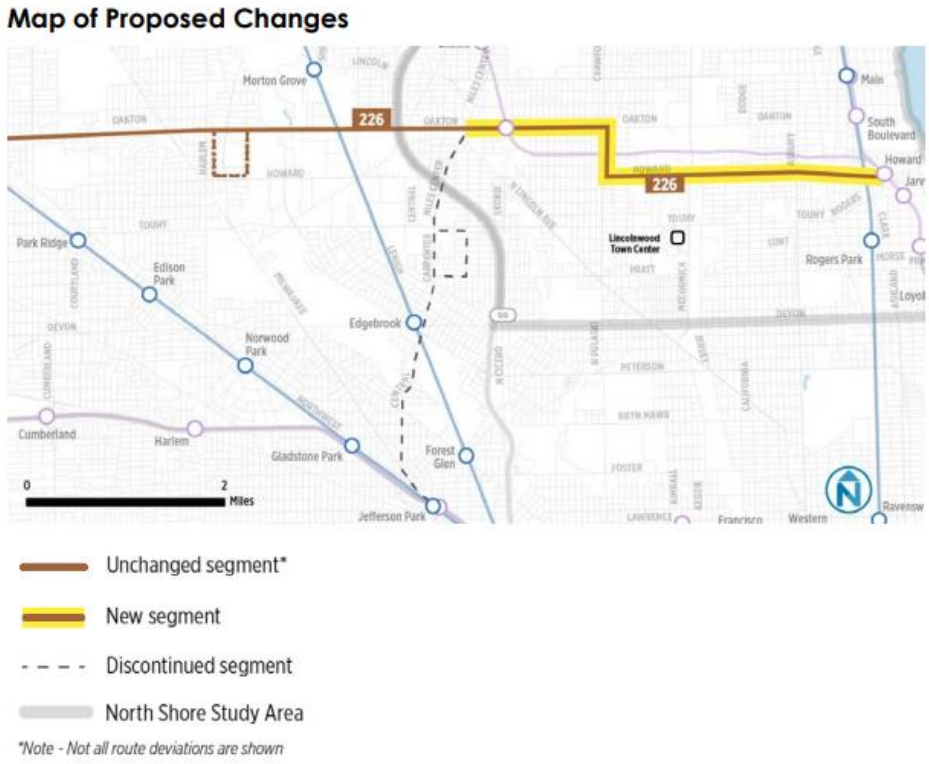


Figure 5-6: Proposed Changes to Pace Route 226 (Pace/CTA North Shore Transit Coordination Study)



Source: North Shore Transit Coordination Plan, December 2017.
http://www.pacebus.com/pdf/initiatives/NSCP/Route-by-Route_Summary_of_Changes.pdf

5.5.2 Kiss-n-Ride / Drop-Off

This access mode could be significantly more important than suggested by the STOPS modelling results (i.e., 2 percent share). Although the STOPS model indicated few passengers using this mode, this is a common way that Metra commuters access stations, accounting for 15 percent of riders based on the Metra 2016 Origin Destination survey. There are a whole host of variations within this mode, including car pool, van pool, transportation network company (TNC) / shared ride services (e.g., Uber or Lyft), and taxi. Considering the 2040 time horizon, other emerging technologies may also prove feasible, including automated vehicles, carshare, dynamic carpools, and Mobility-as-a-Service (MaaS) systems. Vehicle accommodation for these types of services will need to be incorporated into the station's infrastructure, on both the east and west sides of station area.

5.5.3 Park-n-Ride

Driving and parking at stations is the most common means that Metra riders (like most suburban commuter rail passengers nationally) use to access stations, totalling 57% of all riders from the 2016 Origin Destination survey. The STOPS modelling indicated a share of 45% of boardings, or 470. This would represent demand on a typical day, and variation by day-of-week and season should be addressed in the sizing the parking facilities to be constructed. As such, a design factor of 15% was assumed, which would translate to a total of 540 parking spaces needed by 2040. The proposed station layout included about 90 spaces on the east side of the railway, leaving 450 spaces to be built on the west side. This split in capacity should be revisited in later phases of the station's development. The construction of parking can be phased, with opening-day capacity less than what is forecast to be required in 2040. As noted above, potential changes in transportation mobility options may impact all-day parking needs, but the extent is yet uncertain.

5.6 Train Operational Impacts

The introduction of a Niles Station could potentially have impacts on the following areas:

- Current Metra MD-N ridership
- Reliability of Metra service
- Reliability of Amtrak service
- Freight operations

5.6.1 Travel Time Impacts to Current Metra Riders

Current MD-N passengers who will be on trains that stop at the proposed Niles Station will see their travel times lengthened by approximately two minutes. Riders impacted are represented by passenger loads on inbound trains at Morton Grove, and loads on outbound trains at Edgebrook. Table 5-17 indicates that 5,644 inbound passengers would be impacted based on station counts taken in fall 2016. Outbound passengers impacted would total 4,425.

Table 5-17: MD-N Passengers Impacted by Niles Station

	Route Segment	Trains Serving Niles	Trains Total	Psngr. Loads at Niles	Total MD-N Psngr. Trips
IN	Fox Lake-Morton Grove	23	30	5,644	11,907
OUT	CUS-Edgebrook	23	30	4,425	11,536
	Total	46	60	10,069	23,443

Source: Metra 2016 Boarding-Alighting Count.

The addition of two minutes to station travel time in the systemwide regression analysis reveals that estimated boardings could decline by 2.2 percent on affected MD-N trains. This could translate to a drop in weekday boardings of 220 per day not including the gain in boardings at Niles (i.e., 10,069 loads at Niles multiplied by 2.2 percent).

Another way of assessing the larger impact of longer travel times due to stopping at Niles is to review STOPS model results at the line level for the entire transit system. Table 5-18 reveals that the MD-N shows a slight increase of 73 trips in 2040. Adjacent lines see growth, especially NCS (500) and UP-N (253). Overall, Metra is forecasted to gain 869 weekday boardings when the Niles is added to the network. CTA rail shows small declines on the Blue Line (negative 0.3 percent) and Yellow Line (negative 1.0 percent). Estimated demand on the Pace Pulse Milwaukee Line is forecasted to decrease by 1.0 percent in 2040 if the Niles station is built.

Table 5-18: Metra Line STOPS 2040 Boardings

Route	No-Build	Build	Diff.	No-Build	Build	Diff.
MD-North	**32,090**	**32,160**	**70**			
UP-Northwest	50,020	50,060	40			
NCS	9,900	10,400	500			
UP-North	43,300	43,600	300			
Sub-Total Metra				135,310	136,220	910
CTA Yellow Line	8,000	7,900	-100			
CTA Blue Line	222,800	222,200	-600			
Sub-Total CTA				230,800	230,100	-700
Pace Pulse				2,749	2,718	-30
Grand Total				**368,860**	**369,040**	**180**

5.6.2 Metra Service Impacts

As a way of assessing the impacts a new Niles station could have on Metra MD-N operations, the 1,089 reported delays in 2017 were reviewed by cause. (Metra considers a train to be delayed if it reaches its final destination six minutes or more after scheduled arrival.) As shown on Table 5-19, many reported delays would have no link to the introduction of a new station in Niles, including, for example, Human Error, Track Work, or Weather. For the most common reason (Signal/Switch Failure at 16 percent), there are no switches in the immediate area of the proposed station site, and the functioning of signals for train control and roadway crossing protection would not be affected by a Niles station. The level of Freight Interference would also not be expected to change with a Niles station, since most freight traffic occurs between Rondout and Junction A-20 in Northbrook, as discussed in further detail in Section 8.4 below. In summary, the proposed Niles station would not negatively impact the quality of the Metra MD-N service.

Table 5-19: 2017 MD-N Train Delays by Cause

Cause of Delay	Delays	Percent
Signal/Switch Failure	177	16%
Human Error	142	13%
Track Work	116	11%
Freight Interference	111	10%
Mechanical Failure	111	10%
Weather	95	9%
Passenger Loading	80	7%
Sick, Injured, Unruly Passenger	72	7%
Lift Deployment	66	6%
Obstruction/Debris	39	4%
Passenger Train Interference	32	3%
Other	29	3%
Accident	19	2%
Total	**1,089**	**100%**

5.6.3 Amtrak Intercity Service Impacts

Amtrak operates eight weekday trains each direction on the MD-N main line between Union Station and Rondout. Unlike Metra service, which is concentrated in the peak period, Amtrak service is spread throughout the day. As a result, many Amtrak trains operate during Metra off-peak periods, when MD-N frequencies are lower, providing the ability to maintain maximum separation. Based on Metra and Amtrak schedules in effect as of September 2018, most Amtrak trains are scheduled to arrive or depart Union Station by more than ten minutes from the prior or following MD-N train (i.e., 26 of 32 trains). Current Amtrak schedules are therefore unlikely to be impacted by selected MD-N trains serving the proposed Niles station.

5.6.4 Freight Rail Impacts

As stated previously, the MD-N corridor is shared with CP and WSOR freight trains. The level of CP traffic is highest between Rondout and Junction A-20 in Northbrook north of Niles, averaging 13 to 15 trains per day. For the Niles segment of the MD-N corridor (i.e., south of Junction A-20), traffic

averages three trains per day. The Metra-CP Trackage Agreement requires that CP give priority to commuter service operations during weekday peak periods. The WSOR is authorized to operate two trains per day (one in each direction) on the MD-N, but is restricted to the night time period. Given the limited freight service on the MD-N at the location of the proposed Niles Station, the additional time required to stop, dwell, and resume selected existing MD-N trains would have no discernible impact on freight operations.

The existing freight siding south of Howard Street would not be impacted by a Niles Station sited near Jarvis Avenue.

5.7 Summary of Operational Impacts

As a way of summarizing these analyses, Table 5-20 recaps key findings. The potential station shows significant advantages for Niles area residents and workers in terms of non-automobile travel times to major employment centers, at a reasonable fare increment. Ridership on this segment of the MD-N (Edgebrook to Morton Grove) is expected to grow significantly, from 1,578 in 2016 to over 2,300 by 2040, though there will be impacts on other portions of the MD-N, as the additional deceleration, acceleration, and dwell time at the Niles station will add roughly 2 minutes to MD-N trips that stop at the station. Impact to Metra, Amtrak, or freight operations in terms of delay is expected to be negligible or non-existent.

Table 5-20: Summary of Operational Impacts

Category	Impact	Metric	
Schedule	Metra Inbound Average Travel Time	34 min.	
	Metra Outbound Average Travel Time	28 min.	
	Fastest Alternative Transit Travel Time	60+ min.	
Fares	One-way Metra Fare	$5.50	
	Monthly on per Day Basis	$3.75	
	Alternative Transit Monthly-to-Daily Fare	$2.47	
Demand	Expected 2040 Boardings - Morton Grove	900	*(969 in 2016)*
	Expected 2040 Boardings - Edgebrook	410	*(609 in 2016)*
	Expected 2040 Boardings - Niles	1,040	
	Expected 2040 Total Boardings	2,350	*(1,578 in 2016)*
Impacts	Estimated Decrease in Existing MD-N 2015 Boardings due to Slower Service (Regression. Equation)	-220	*Based on +2mins for current loads*
	Estimated MD-N 2040 Ridership Change (STOPS)	+70	
	Metra Service/Delays	negligible	
	Amtrak Intercity Service	none	
	Freight (CP, WSOR)	negligible	

6. Site Impacts

6.1 Introduction

This chapter will address impacts and costs of the proposed station. Specifically, the following areas will be addressed:

- Further definition of the station and parking concept plans and the immediate station area, including general land use, building massing, and parking / transportation improvements.
- Traffic analysis of major roadways anticipated to be used by commuters to access the stations and the potential impacts on the at-grade crossings at Howard and Touhy due to longer gate down times.
- Storm water impacts and need for storm water control systems, using available data and a high level analysis.
- Estimated capital costs for the proposed station and parking improvements, changes to the signalling systems required by the station, roadway improvements, and other ancillary improvements associated with the station.
- Estimated operations and maintenance (O&M) costs to Metra for train operations and platform maintenance, and for the Village or other entities to operate and maintain the station building, parking, and other improvements associated with the station.
- Estimated revenues that could be expected to be generated, including additional passengers fares for Metra and parking and vendor revenues that would accrue to the Village or another entity.
- The identification of potential funding sources to build, operate and maintain the station and parking facilities.

6.2 Station Conceptual Designs

As indicated in Chapter 3, the recommended location for the Niles station is where Jarvis Avenue dead-ends on the east-side of the MD-N tracks. Figure 6-1 provides a schematic drawing of the proposed station facility's various elements. These station elements are described in more detail in Section 6.5, and serve as the basis for estimating capital costs. Note that some of the assumed elements may change as the area develops, and the station is more fully integrated into adjoining land uses.

Figure 6-1: Conceptual Niles Station Layout

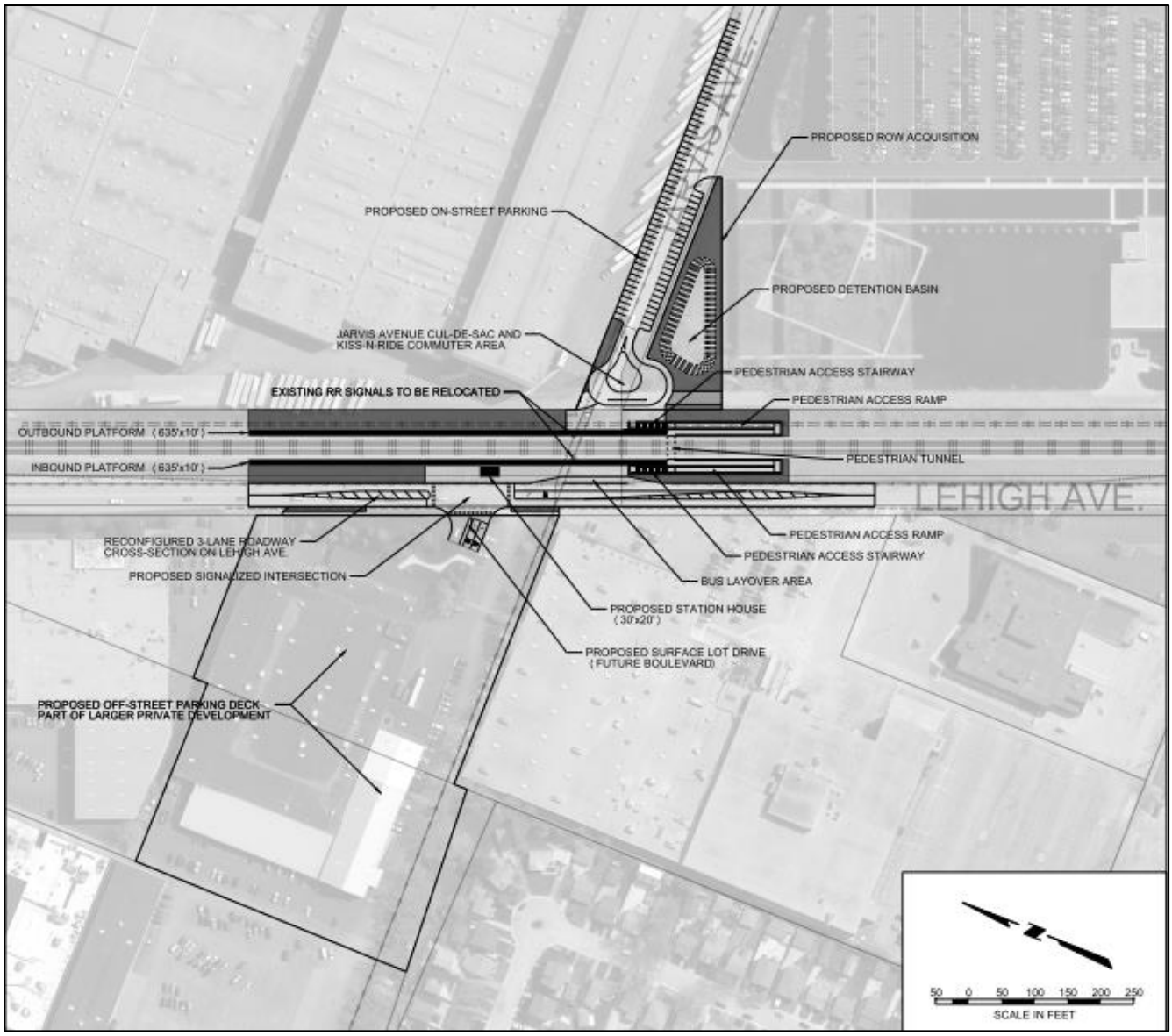


Figure 6-2 depicts the TOD Master Plan Concept, an illustration of how the Touhy Triangle area west of the station can develop following principles of TOD, that is, adding higher density, mixed-use development and improvements to encourage a walkable environment. This is a refined version of "Concept C," which was used as the basis for an alternative socio-economic future to the Chicago Metropolitan Agency for Planning's (CMAP) adopted 2040 growth forecasts (see Chapters 3 and 5). The plan is a high-level development concept, but has addressed critical issues such as access/circulation, parking, density, and overall urban design to ensure that it is viable and represents the vision for the Station Area.

Key TOD Master Plan Concept considerations include the following:

- Proposed building heights generally range from 5 to 7 stories, with flexibility provided. The Master Plan also provides for a range of building and unit types (and associated unit values).
- It is anticipated that TOD area densities could range up or down (e.g., 40 to 50 units per acre), depending on market and community preferences without dramatically impacting or invalidating the TOD Plan as shown.
- Typical residential parking ratios range from 1.1 to 1.3 spaces per unit with parking provided through a mix of internal and surface lots. Additional on-street parking is also provided through the introduction of a new street and block network.
- Multi-level and/or under-ground parking structures have been kept to a minimum to improve overall feasibility and allow for a wider range of unit values. There are no decks over 2 stories high.
- Approximately 550 commuter spaces have been provided within the immediate vicinity of the proposed station. Roughly half of these spaces are provided in two internal parking decks, with the rest provided as surface spaces distributed on both the east and west sides of Lehigh Avenue (see Figure 6-2, items A, C, F and J).
- Roughly 20 short term/kiss-n-ride parking spaces have been provided on the west side of Lehigh Avenue. A small drop-off/kiss-n-ride loading zone has been provided on the east side as well.
- Retail use has been limited to key locations along the Lehigh Avenue frontage to avoid oversaturation.
- Additional commercial, office, and residential development is envisioned in the Core Entertainment District area of the Touhy Triangle Plan that lies to the immediate west/southwest of the TOD Plan area shown in Figure 6-2. The projected future residential and office development figures used in Chapter 5 for ridership modeling purposes include a combination of both Core Entertainment District and TOD Master Plan area unit totals.

The following is a summary of metrics for the proposed TOD Master Plan Concept (Figure 6-2) shown on the following page:

- Retail Use: 81,500 square feet
- Residential Use: 1,120 to 1,390 units (typical unit size equals 1,000 SF)
- Residential Density: 40 to 50 units per acre (gross)
- Residential Parking: 1,486 total spaces (1.07 to 1.33 spaces / unit)
- Commercial Parking: +/- 300 spaces (3.68 spaces / 1,000 SF)
- Commuter Parking: 550 total spaces

Figure 6-2: TOD Master Plan Concept for the Niles Station Area

Station Area Plan Notes

A. Mixed-Use Development
- 5,000 SF Retail Space
- Upper-story Residential Use (116 to 138 units)
- 130 commuter parking spaces

B. New plazas / Open Spaces

C. Mixed-Use Development
- 10,000 SF Retail Space
- Upper-story Residential Use (102 to 128 units)
- 372 commuter parking spaces

D. Proposed Station House

E. Bus Layover Area / Transit Plaza

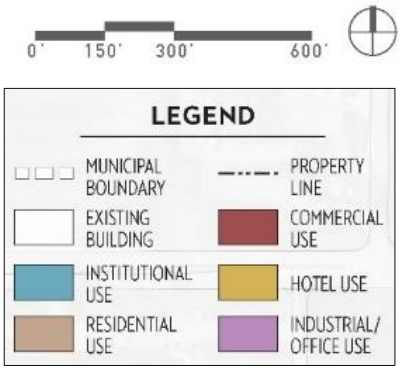
F. West Side Commuter Lot
- 222 commuter parking spaces

G. Kiss-N-Ride Area

H. Pedestrian Underpass

I. Jarvis Avenue Drop-off Area

J. East Side Commuter Parking
- 70 commuter parking spaces



6.3 Traffic Impacts

6.3.1 Traffic Analysis Background

A planning level analysis of the study area was completed in order to gain a better understanding of the traffic impacts associated with the implementation of a Niles station. The analysis involved impacts on traffic volumes on area roadways and to traffic at the Howard Street and Touhy Avenue railroad crossings due to longer gate down times.

Existing traffic data were obtained from the Illinois Department of Transportation's (IDOT) Traffic Count Database System. All counts were collected in 2014 and are representative of an extended roadway segment. Daily traffic volumes for each of the major roadways expected to be used by Niles station commuters (e.g., Howard Street, Touhy Avenue and Lehigh Avenue) are shown in Appendix A. Background traffic was projected to 2040 using traffic growth rates identified in the Touhy Triangle Master Plan for Lehigh Avenue and Touhy Avenue, which revealed a relatively flat growth rate, ranging from zero growth up to three percent for the span 2015 to 2040. To approximate traffic growth for Howard Street, which was not available from the Master Plan analysis, the average of the traffic growth rates for Lehigh Avenue and Touhy Avenue was used as a surrogate indicator. For vehicle travel volumes generated by the new station, projected 2040 boardings were identified by origin Travel Analysis Zone (TAZ), and assigned to the three key roadways. Additional information on the basis for the modeling results can be found in Chapter 5.

6.3.2 Level of Service Analysis

Each major roadway impacted by the additional traffic generated by the Niles station was assigned a Level of Service (LOS) in accordance with Exhibit 16-16 of Chapter 16 of the *Highway Capacity Manual (HCM) 6th Edition* (Transportation Research Board, 2016). These LOS evaluations should be used in the context of a planning study only and should not be used to make final decisions on important design features. Outputs from this model help identify locations where future roadway improvements may be needed to facilitate additional traffic volume. Table 6-1 excerpts the applicable portions of the LOS table shown in Exhibit 16-16 of the *HCM*.

Table 6-1: Generalized Daily Service Volumes for Urban Street Facilities

K-factor	D-factor	Two-Lane Street			Four-Lane Street		
		LOS C	LOS D	LOS E	LOS C	LOS D	LOS E
Posted Speed = 30 mph							
0.09	0.55		11,800	17,800		24,700	35,800
	0.60		10,800	16,400		22,700	32,800
0.10	0.55		10,700	16,100		22,300	32,200
	0.60		9,800	14,700		20,400	29,500
0.11	0.55		9,700	14,600		20,300	29,300
	0.60		8,900	13,400		18,600	26,900
Posted Speed = 45 mph							
0.09	0.55	7,700	15,900	18,300	16,500	33,600	36,800
	0.60	7,100	14,500	16,800	15,100	30,800	33,700
0.10	0.55	7,000	14,300	16,500	14,900	30,200	33,100
	0.60	6,400	13,100	15,100	13,600	27,700	30,300
0.11	0.55	6,300	13,000	15,000	13,500	27,500	30,100
	0.60	5,800	11,900	13,800	12,400	25,200	27,600

Source: Condensed from Exhibit 16-16 HCM 6th Edition. The term K-factor is the proportion of daily traffic occurring in the max hour, and is used for analyzing traffic flows. D-factor is the percentage of traffic moving in the peak travel direction. It is calculated by dividing the higher directional volume by the total roadway volume for that hour. Level of Service (LOS) is a qualitative measure used to relate the quality of traffic service. LOS uses six levels of performance, where A is free flow and F is breakdown.

It is important to note that the following assumptions have been made in accordance with the *HCM* to develop preliminary analysis for the proposed station. An operational analysis will need to be completed to determine final mitigation strategies that may be necessary.

- No roundabouts or all-way stop-controlled intersections along the facility
- Coordinated, semi-actuated traffic signals; Arrival Type 4; 120-s cycle time; protected left-turn phases; 0.45 weighted average g/C ratio (effective green time per cycle ratio for lane group)
- Exclusive left-turn lanes with adequate queue storage provided at traffic signals
- No exclusive right-turn lanes provided
- No restrictive median
- 2-mile facility length
- 10 percent of traffic turns left and 10 percent turns right at each traffic signal
- Peak hour factor = 0.92
- Base saturation flow rate = 1,900 passenger car per hour per lane (pcphpl)
- 30mph facility: signal spacing = 1,050 feet and 20 access pts/mi
- 45mph facility: signal spacing = 1,500 feet and 10 access pts/mi

Assuming a linear relationship between the values listed in Table 6-1, the planning level LOS summary shown in Table 6-2 details the anticipated metrics for each segment within the study limits.

Table 6-2: Planning Level of Service Assessment

	Background Volumes				2040 Total Traffic			
	vpd	K-Factor	D-Factor	LOS	vpd	K-Factor	D-Factor	LOS
Howard West of Lehigh Ave	13,454	0.11	0.54	D	13,660	0.11	0.54	D
Howard, Lehigh to Menard	14,780	0.11	0.50	D	14,904	0.11	0.50	D
Howard East of Menard Ave	12,935	0.11	0.52	E	13,421	0.11	0.51	E
Touhy West of Lehigh Ave	29,618	0.07	0.52	D	29,770	0.07	0.52	D
Touhy East of Lehigh Ave	41,752	0.07	0.49	E	41,931	0.07	0.49	E
Lehigh North of Parking Lot	6,318	0.09	0.62	D	6,648	0.09	0.61	D
Lehigh South of Parking Lot	6,318	0.09	0.62	D	6,517	0.09	0.62	D

vpd=vehicles per day

Based on Table 6-2, the additional daily traffic generated by the proposed Niles train station will not over-burden the existing roadway system to adversely affect the LOS. The additional traffic generated by this facility is minimal, as illustrated in Figure 6-3 (comparison to current year) and Figure 6-4 (comparison to future year). The majority of the roadways within the project area see very little additional traffic, even during peak-hour periods. It is anticipated that minimal mitigation efforts would be necessary to remedy the impacts of this additional traffic. However, if operations need to maintain a higher LOS, modifications to the roadway network may be necessary, and as previously indicated, a full operational analysis would be required.

It should be noted that these numbers relate only to forecasted users of the station who access by a vehicle. Impacts associated with adjacent planned development have not factored into this analysis.

Figure 6-3: Niles Station Estimated Traffic Volumes versus Current Traffic Levels

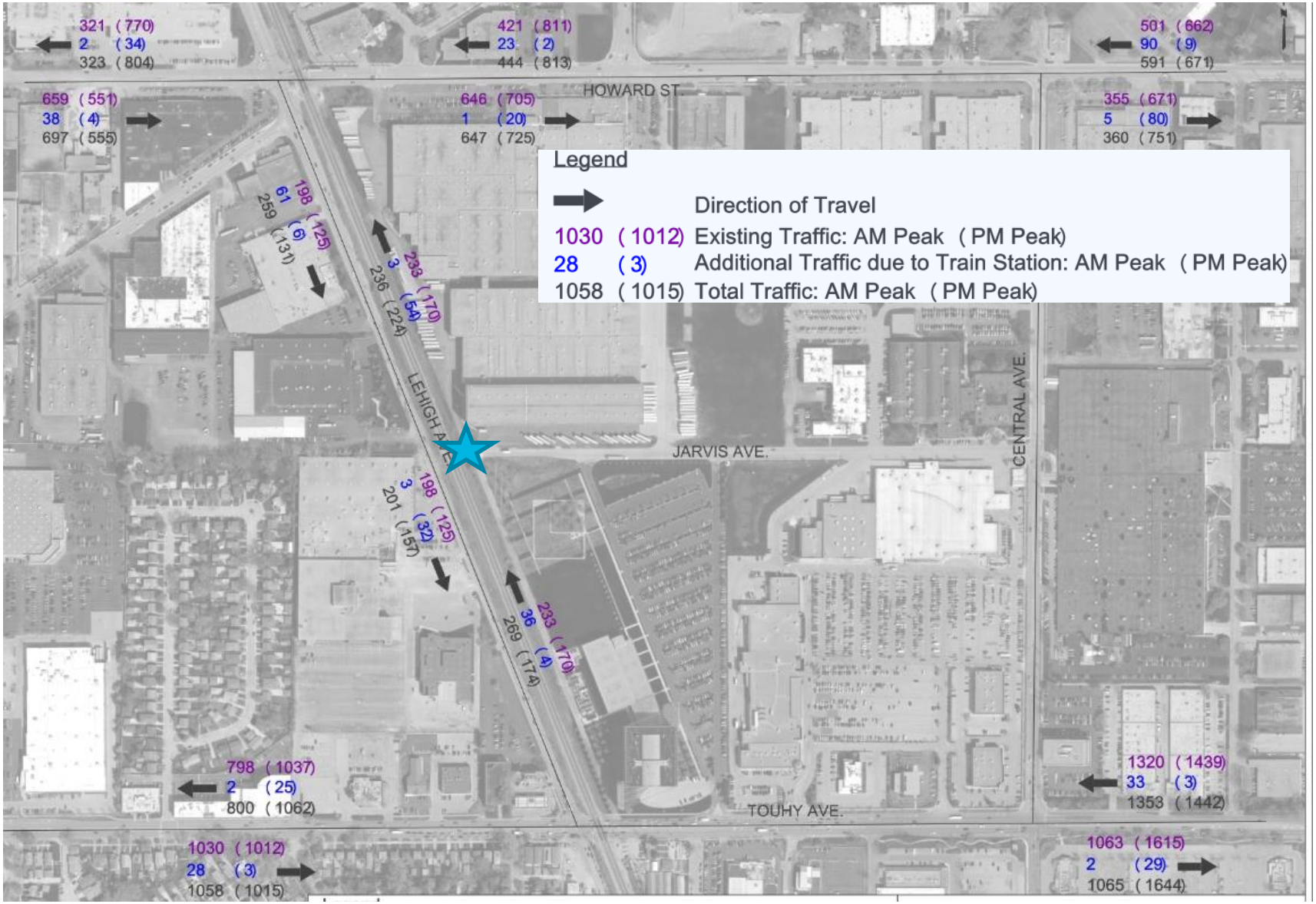
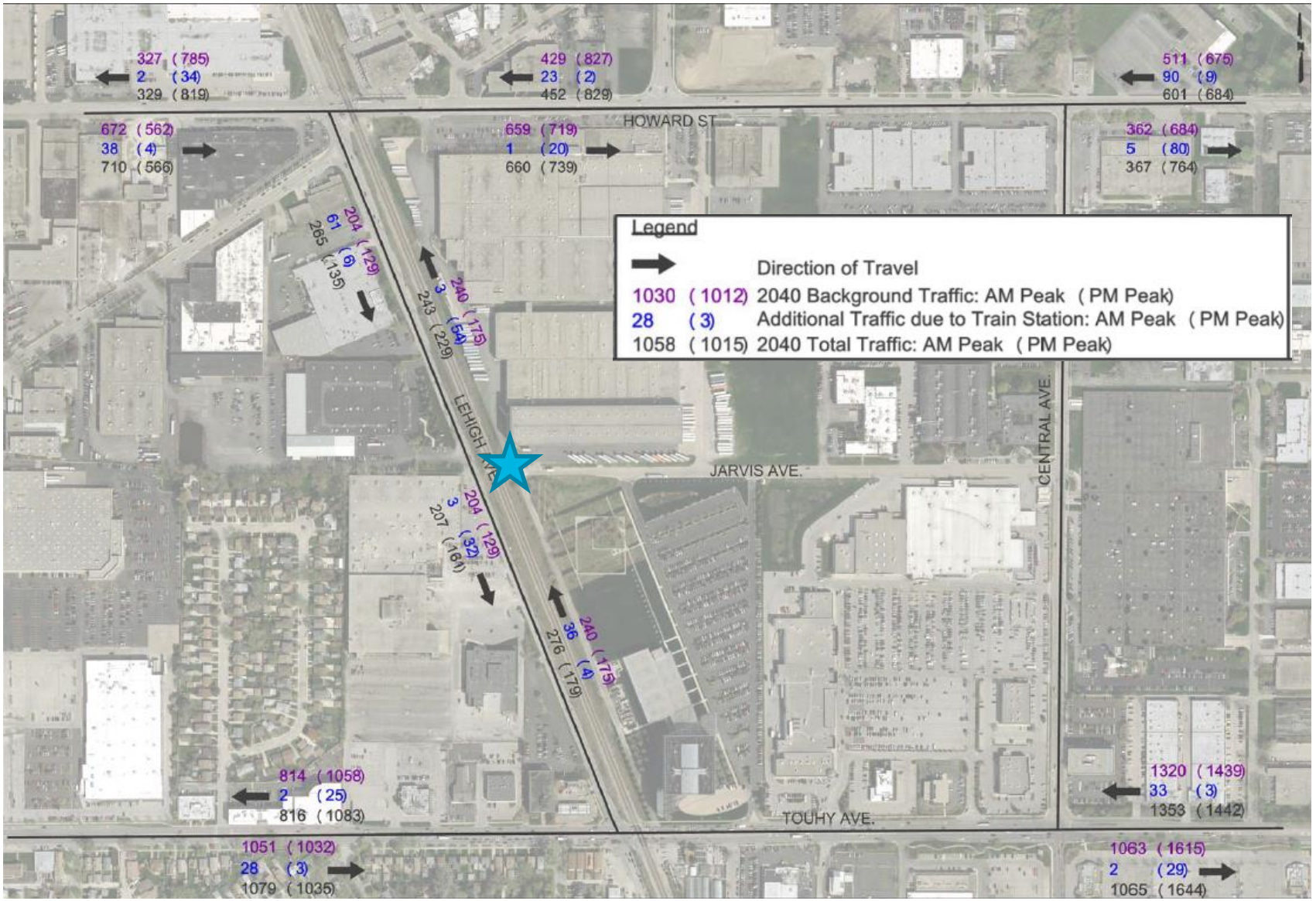


Figure 6-4: Niles Station Estimated Traffic Volumes versus 2040 Traffic Levels



6.3.3 Railroad Crossing Gate Impacts

It is understood that the addition of the proposed Niles station will increase the amount of time railroad crossing gates are down, impacting the traffic queueing along both Howard Street and Touhy Avenue. For inbound trains that stop at the proposed Niles station, crossing gates will be down at Howard Street for approximately the same duration as currently exists (an estimated 45 seconds). At Touhy Avenue, crossing gates will drop as the train approaches the Niles station and rise once the train has come to a complete stop to board and alight passengers (gates down an estimated 25 seconds). As the train departs the Niles station, gates will again drop until the train clears the Touhy crossing (an estimated 45 seconds). Each inbound train stopping at Niles is estimated to increase gate downtime a total of 45 seconds at Howard Street and 70 seconds at Touhy Avenue.

Outbound trains serving the Niles station would have similar effects; Touhy would be unchanged and Howard would see an additional 25 seconds per train stopping at the Niles station.

Table 6-3 presents the breakdown in estimated additional gate downtime for trains stopping at the Niles station during the AM peak hour (7:00-8:00 AM) and PM peak hour (5:00–6:00 PM). For inbound AM peak hour trains, gates will be down at Touhy an additional 0.83 minutes (50 seconds), increasing the total estimated downtime from 11.3 percent to 12.6 percent during that 60-minute period. For outbound AM peak hour trains, the impact to Howard from gates down will be an additional 1.25 minutes (75 seconds) over the hour. Total AM peak hour gate downtime at Howard would increase from 11.3 percent to 13.3 percent. PM peak hour impacts would be comparable. Note that the count of existing trains shown on Table 6-3 includes Metra and Amtrak trains. It has been assumed that freight train operations are limited to off-peak periods.

Table 6-3: Estimated Gate Downtime Comparison

		Touhy			Howard		
		Inbound	Outbound	Total	Inbound	Outbound	Total
7-8:00 AM	Existing Trains WO Niles Sta.	6	3	9	6	3	9
	Gate Downtime (mins)*	4.5	2.25	6.75	4.5	2.25	6.75
	% Gate Down			11.3%			11.3%
	Trains w/Niles Stop Impacts	2	--	2	--	3	3
	Added Gate Downtime (mins)**	0.83		0.83		1.25	1.25
	% Gate Down			1.4%			2.1%
	Total Gate Downtime	5.33	2.25	7.58	4.50	3.50	8.00
	Total % Gate Downtime			12.6%			13.3%
5-6:00 PM	Existing Trains WO Niles Sta.#	3	7	10	3	7	10
	Gate Downtime (mins)*	2.25	5.25	7.5	2.25	5.25	7.5
	% Gate Down			12.5%			12.5%
	Trains w/Niles Stop Impacts	2	--	2	--	3	3
	Added Gate Downtime (mins)**	0.83		0.83		1.25	1.25
	% Gate Down			1.4%			2.1%
	Total Gate Downtime	3.08	5.25	8.33	2.25	6.50	8.75
	Total % Gate Downtime			13.9%			14.6%

**Gate Downtown without Niles Stop=0.75 mins (45 secs) per train*
***Added Gate Downtime to Stop at Niles=0.42 mins (25 secs) per train*
#Included two Amtrak trains.

These impacts seem to be comparatively small, although to quantify the increase in queue length for the two roadways would require a more detailed operational analysis at each crossing. This analysis would need to consider the signal timing and turning movement counts at each crossing.

6.4 Storm Water Impacts

To assess the need for storm water control systems as a result of the proposed station and parking facilities, a field inspection was performed on October 30, 2018. It was determined that the existing detention facility located just east of the project improvement limits and south of Jarvis Avenue at Menard Avenue drains a good portion of the tributary area from the existing tracks, the grass infield area located east of the tracks, and other existing properties and parking lots north and south of this basin.

Detention facility south of Jarvis

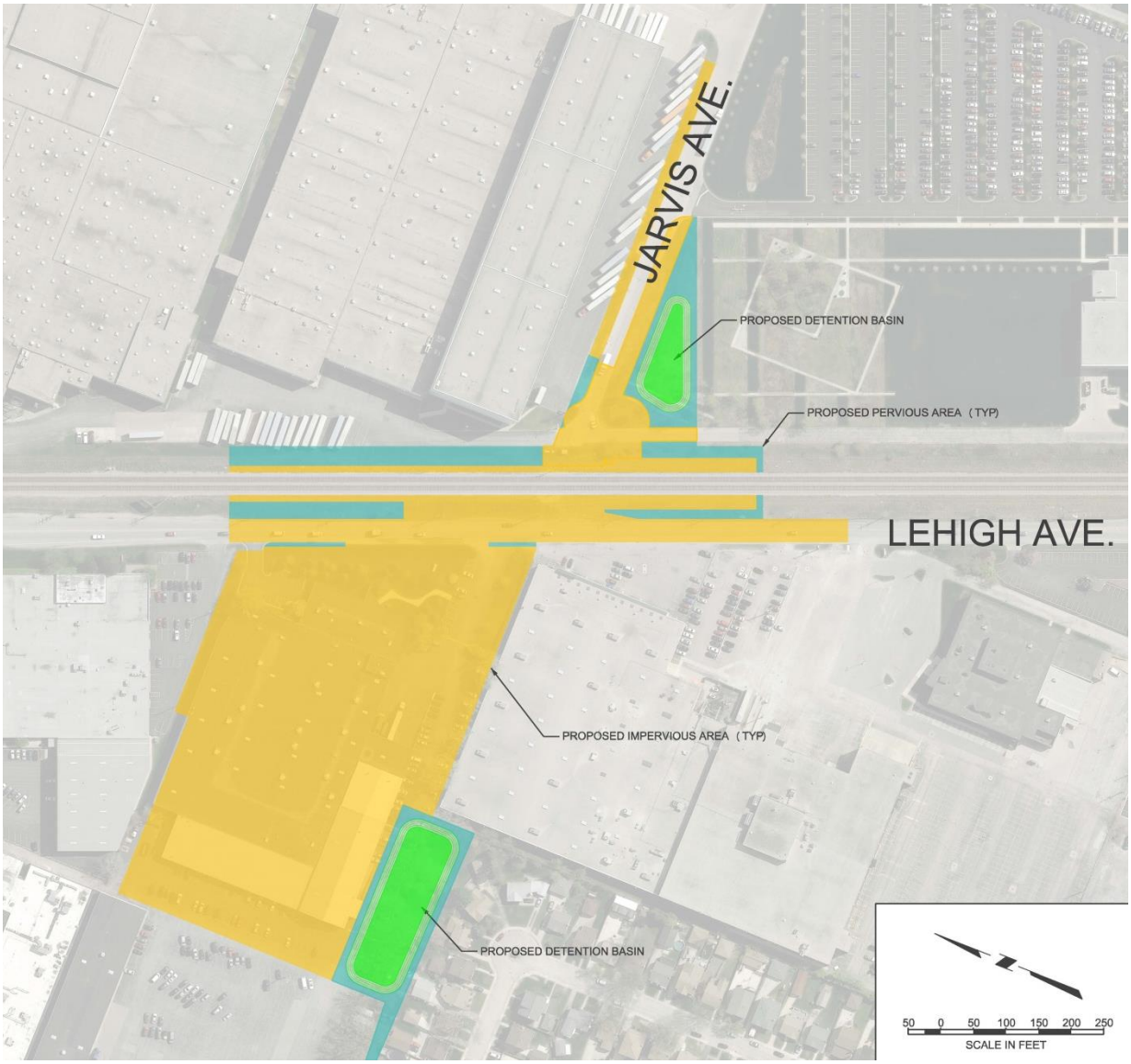
There is an existing 30” pipe that drains the existing grass infield area (near the proposed station east access stairway) directly into this detention facility. The grass infield area located at the southeast corner of the MD-N tracks and Jarvis Avenue has some vegetation growth but is mostly flat.

30” Storm Sewer pipe

Vegetation SE MD-N and Jarvis

The disturbed area for the proposed Niles Station and the proposed adjacent parking west of Lehigh Avenue is approximately 10.2 acres (see Figure 6-5). This disturbed development area currently includes approximately 8.2 acres of paved impervious area and 2.0 acres of grassed pervious area. Applying the Metropolitan Water Reclamation District’s (MWRD) Modified Rational Formula method for calculating detention storage, the required storm water detention volume for the proposed disturbed area is approximately 2.8 ac-ft. This is based on multiplying the disturbed area in acres by 0.30 cubic feet per sec/acre ratio (per MWRD guidelines). Storm water calculations are included in Appendix B.

Figure 6-5: Niles Station and Parking Conceptual Facility Drawing



The proposed 5.8 acre surface parking lot west of Lehigh Avenue would require approximately 0.95 ac-ft of detention storage, which can be provided on vacant land immediately north of the residential properties within the City of Chicago. The remaining additional 1.85 ac-ft can be provided using above ground detention ponds on land southeast of Jarvis Avenue and the MD-N tracks.

The inlet spacing and storm sewer system design for the proposed surface parking lot will be performed during the design phase.

Review of the FEMA maps determined that there are no floodplain impacts associated with the proposed improvement.

An MWRD storm water permit will be required for the proposed work.

6.5 Capital Costs

The process of estimating the cost to build the Niles station and related facilities follows the Federal Transit Administration's (FTA) Standard Cost Category (SCC) costing structure and methodology. This process involved quantifying the units associated with each project improvement element, and applying a unit cost to each to estimate the capital costs. It should be noted that these costs are intended as planning estimates. As the project advances, the project designs will be more detailed (e.g., based on engineering surveys), allowing for more refined estimates. Furthermore, it is likely that some of the access-related improvements will be part of the larger Touhy Triangle development. Without knowing the specific phasing of this planned development, a more conservative approach assumed station improvements would be constructed on a standalone basis.

6.5.1 Capital Improvements

The conceptual station layout (Figure 6-1) served as the basis for determining the quantity take-offs used in estimating capital costs. The improvement elements costed represent what has been assumed for the initial roll-out of the station, and include the following:

Passenger Waiting Space – A 600-square-foot station building was assumed to serve as passenger waiting space on the inbound side (west). An 80-square-foot waiting shelter was assumed for the outbound platform (east).

Platform – Two 10'-wide, 635'-long low-level platforms to accommodate eight-car trains were assumed. This improvement includes the structure, surface, tactile strips, signage, and lighting. Installation of Metra's Visual Information System (VIS) was also assumed.

Pedestrian Circulation – A system of pedestrian improvements were assumed that included a tunnel, ADA-compliant ramps, retaining walls, stairs, and sidewalks.

Parking and Roadway – East of the MD-N tracks, Jarvis Avenue would be reconfigured to include on-street parking, and a cul-de-sac turnaround to allow for kiss-n-ride activity. West of the MD-N tracks, a surface parking lot would be constructed northwest of the station on the west side of Lehigh Avenue. Lehigh would be widened to a 3-lane cross section through the station limits, with a new signalized intersection at the driveway leading to the west side surface parking lot. This drive entrance would ultimately be extended west as a boulevard serving the planned TOD. Lehigh would also include a northbound left-turn lane and dedicated space for northbound buses (stops and layover). Southbound buses and shuttles would layover, drop-off, and pick-up within a dedicated off-street facility within the surface parking lot. (See Figure 6-6.)

Figure 6-6: Niles Station Cross Section Schematic

It should be noted that some of these improvements west of Lehigh are planned to be integrated into the Touhy Triangle development, including the new east-west boulevard and a structured parking facility for commuters. Without the benefit of knowing the timing of these private investments, these elements of the station were assumed to be constructed on a standalone basis for the purpose of these cost estimates.

Railroad Signals – Existing MD-N train control signal infrastructure immediately west of the Jarvis Avenue (see photo) would require relocation. In concert with this modification, changes to the grade crossing control systems at both Touhy and Howard would be necessary. Metra has advised the Village that the costs for these changes may rise as the federally mandated Positive Train Control (PTC) system is implemented. This safety overlay system is currently targeted for installation on the MD-N in the fourth quarter of 2019.

Train Control Signals near Jarvis; view SE from Lehigh

Land Acquisition – To accommodate parking and detention on the east side and parking west of Lehigh, land would need to be acquired. This includes 0.7 acres on the east side of the MD-N, two parcels west of Lehigh totalling 6.5 acres, and a 0.3 acre parcel immediately north of the residential properties within the City of Chicago.

Utilities – A storm sewer, water main, and electric lines are known to exist within the immediate station area. During this planning level of analysis, an allowance was assumed to relocate or mitigate the impacts of known and unknown utilities adjacent to the proposed station. As the station design advances, a more precise estimate of costs can be determined.

Drainage – Based on the initial review of storm water impacts of the station and parking facilities described in Section 6.4, detention facilities would be developed south of Jarvis and at or near the proposed surface parking facility west of Lehigh.

Professional Services – Various project development, design, construction management, permits, surveys, etc. costs would be required, and are estimated using percentages applied to construction costs.

Contingencies – The FTA SCC methodology assumes two forms of project contingency:

- Allocated – a percentage that is applied to each project element. Rates vary by element type and are affected by the degree of uncertainty for a given element; for example, Allocated Contingency for Utilities is high due to the minimal information known at this time.
- Unallocated – an overall percentage (ten percent) that is applied to total estimated costs. This factor is applied as an allowance for unknowns and uncertainties, but on a broader level than Allocated Contingencies, and typically allows for changes in scope and schedule.

6.5.2 Estimated Capital Costs

Table 6-4 presents the estimated capital costs to construct the Niles station and associated improvements. As noted above, it is expected that some of these improvements could be made jointly with the expected adjacent development, which would reduce the costs shown. Also, it should be emphasized that these costs are considered planning-level estimates; a higher level of precision will require more detailed analysis in subsequent design phases of the station development project.

Table 6-4: Estimated Niles Station Capital Costs (in 2018 dollars)

Cost Category	Project Element	Quantity	Unit of Measure-ment	2018 Unit Cost*	2018 Base Cost	Allocated Contingency	Total Cost
Wait Space	Warming house (one, inbound)	600	sq ft	564	$338,400	15%	$389,160
	Shelter (one, outbound)	80	sq ft	265	21,200	15%	24,400
Platform	Structure, surface, tactile, signage, lighting	1,270	feet	2,602	3,304,540	15%	3,800,200
	Visual Information System (VIS)	1	each	40,597	40,597	15%	46,700
Circulation	Stairs	50	risers	3,947	197,350	20%	236,800
	Ped Ramp (8' wide, covered + retaining walls)	700	feet	3,383	2,368,100	20%	2,841,700
	Sidewalk	21,000	sq ft	16.0	336,000	20%	403,200
	Tunnel	39	feet	20,816	811,824	30%	1,055,400
Parking & Roadway	Surface Parking Lot on west side of Lehigh	450	space	8,878	3,995,100	20%	4,794,100
	Reconfigured Jarvis for Head-end Parking	77	space	4,439	341,803	20%	410,200
	Traffic Signal Lehigh and new Blvd.	1	each	311,198	311,198	15%	357,900
	New Roadway	26,000	sq ft	20.0	520,000	20%	624,000
	Resurface Roadway	23,000	sq ft	5.0	115,000	20%	138,000
Railroad Signaling	Relocate Train Control Signal	1	each	2,000,000	2,000,000	included	2,000,000
	Modify Crossing Protection Systems	2	each	500,000	1,000,000	included	1,000,000
Land Acquisition	east-side	0.66	acre	364,279	238,638	30%	310,200
	west-side	6.78	acre	364,279	2,469,812	30%	3,210,800
Utilities	Utility work (along RR & Jarvis)	1,000	feet	700	700,000	0%	700,000
Drainage	Stormwater Detention	1	lump sum	300,000	300,000	30%	390,000
Total Construction Costs							**$22,732,760**
Soft Costs			% of Const. Costs				
PROFESSIONAL SERVICES (applies to Construction Costs)							
	Subtotal Professional Services		25%				5,569,526
	Total wo/Unallocated Contingency						**$28,302,286**
	10% Unallocated Contingency						2,830,229
	Total Cost (rounded to nearest thousand)						**$31,133,000**

**Sources: Metra and Federal Transit Administration's (FTA) Recommended Unit Cost Guide.*

6.6 Operational & Maintenance (O&M) Costs

The costs to operate and maintain the station and parking facilities, including the components of each (e.g., building, platforms, ramps, tunnel, access ways, etc.) will involve several activities, including janitorial/cleaning services, snow removal, utilities, security, parking lot fee collection/enforcement, and refuse pick-up. In addition, stopping and starting trains to serve the Niles station will impact Metra's operational costs. Metra prefers to partner with local governments (usually municipalities) to take on many of the responsibilities for maintaining and operating station and parking facilities. Many municipal costs are offset by station vendor revenues and parking fees. Estimates of annual costs and responsibilities follow.

6.6.1 Train Costs

Isolating a single station's contribution to the O&M costs of a line or system is difficult, since much of the costs to operate a train are not affected by the stations served. However, one variable cost that is affected by stations is the estimated extra diesel fuel required to stop and start a train. Based on Metra research (*Metra Mechanical Department Fuel Test*, April 2012), it is estimated that diesel fuel consumption to stop and start a train averages 6.6 gallons. As shown in Table 6-5, the estimated fuel cost to Metra to serve a Niles station based on 2018 fuel prices is $182,300 per year.

Table 6-5: Estimated Annual Fuel Costs to Stop/Start Trains at Niles

	Niles Train Stops per Day	Service Days per Year	Annual Stops & Cost
Weekday	46	255	11,730
Saturday	20	52	1,040
Sunday Holiday	18	58	1,044
Total Niles Stops per Year			13,814
Gallons per Stop			6.6
Cost per Gallon (2018)			$2.00
Estimated Annual Fuel Costs			$182,300

6.6.2 Station Costs

As noted above, most of the ongoing costs associated with stations are for the maintenance and upkeep of facilities. It is assumed that the station will not have a ticket agent or ticket vending machines, due to Metra's success with passenger use of its mobile ticketing application, Ventra. It is also assumed that Metra will cede responsibilities for the operation and maintenance to a local entity, most likely the Village of Niles. Typically, however, Metra retains responsibility for maintaining platforms, which primarily includes snow removal and salting. Based on Metra data, the 2018 costs to operate and maintain a station averages $48,000 per year. It is further estimated that of this cost, $8,000 are Metra costs to maintain platforms. The Village could defray some of their station costs using revenues from contracting with vendors at the station (e.g., a coffee stand), as noted below.

6.6.3 Parking Costs

Metra has expressed a clear preference for not being responsible for the operating and maintenance of parking facilities. This can be a responsibility of the Village of Niles, likely through a combination of its Public Works and Police Departments. Alternatively, parking can be handled by a

private entity as part of the Touhy Triangle development west of Lehigh Avenue. Parking operations will involve handling the collection and enforcement of user fees, and maintenance (principally, snow removal).

Operating and maintaining the commuter parking facilities at the station will involve discrete costs. However, it can be assumed that the revenues generated through parking fees will more than offset these costs. As part of the price-setting for the parking, the estimated revenue stream should also be used to service a sinking fund to finance the renewal of the facilities in the future. For these reasons, no operating and maintenance costs are assumed for parking.

6.6.4 Summary O&M Costs

Table 6-6 summarizes the estimated annual O&M costs that would be associated with a new Niles station.

Table 6-6: Estimated Summary O&M Costs

	Village of Niles	Metra	Total
Diesel Fuel	$0	$182,300	$182,300
Station Costs	40,000	8,000	48,000
Parking Costs (net)	0	0	0
Total	$40,000	$190,300	$230,300

6.7 Revenues

Additional Metra fare revenues attributed to a Niles Station were estimated based on the net change in boardings for Niles and adjacent stations (Morton Grove and Edgebrook) applied to Metra current fares. In addition, revenues derived from parking fees and from possible station vendors are addressed.

6.7.1 Fare Revenues

Estimating fare revenue impacts was based on the projected future boardings at the MD-N Morton Grove, Niles, and Edgebrook Stations, as documented in Chapter 5. Forecasted 2040 boardings without Niles (e.g., No-Build) and with Niles (Build) were annualized by using a factor derived from MD-N passenger loads by service day for the period July 2017 – June 2018 (*FY19 Metra Operating and Capital Program & Budget* (Metra, 2018)). Average fares were derived from the distribution of MD-N sales by ticket type and Zone C fares effective in 2018. Table 6-7 reveals that the Niles station would generate nearly $2.5 million based on 2040 passenger use and 2018 fare levels. Factoring in declines in station boardings at Morton Grove and Edgebrook, results in a next positive revenue change of $2.1 million.

Table 6-7: Estimated 2040 Fare Revenue Impacts of Niles Station

		Morton Grove	Niles	Edgebrook	Total
No-Build	Weekday Boardings	1,020	--	450	1,470
	Estimated Annual Passengers[1]	559,000	--	247,000	806,000
	Estimated Annual Revenue[2]	$2,433,000		1,075,000	3,508,000
Build	Weekday Boardings	900	1,040	410	2,350
	Estimated Annual Passengers[1]	493,000	570,000	225,000	1,288,000
	Estimated Annual Revenue[2]	$2,146,000	$2,481,000	$979,000	5,606,000
Annual Fare Revenue Difference		-$287,000	$2,481,000	-$96,000	$2,098,000

[1]*Annualization factor (273.6) based on MD-N passenger loads by service day for July 2018-June 2018.*

[2]*Based on average Fare Zone A-C rates, weighted by ticket sales.*

6.7.2 Other Revenue

Most Metra stations provide parking facilities to accommodate riders, and most are available on a fee basis. As noted in Section 6.6.3, the standard practice at Metra stations is for the host community to be responsible for the operation and maintenance of parking. The setting of parking fees for users is determined partly to generate sufficient revenues to fully cover costs, plus some additional amount that can be used to fund a sinking fund for the eventual renewal of the facilities. Another factor is to be comparable to fees set at other nearby stations. If fees are comparatively lower, a station may be overwhelmed by demand, while pricing comparatively too high can result in facilities being underused. Stations near the proposed Niles station have daily fees set at $2.00 per day, including MD-N stations Golf, Morton Grove, and Edgebrook, and UP-NW stations Park Ridge and Edison Park. Some communities also offer permit passes, which can be sold for varying time periods (month, quarter, semi-annual, or annual).

Another potential Village revenue stream associated with the station is leasing space in the station building to a vendor, which can include a coffee/news stand.

6.8 Potential Funding Sources

In order to advance the proposed Niles station to implementation, a potential funding source or sources will need to be identified. Several potential funding programs are identified below, and the degree of compatibility and applicability to the station is assessed.

6.8.1 FTA Capital Investment Grants Program (CIG)

The FTA's Section 5309 CIG program includes New Starts, Small Starts and Core Capacity Improvements grants. These discretionary grants fund transit capital investments, including heavy rail, commuter rail, light rail, streetcars, and bus rapid transit. The process for securing these grants requires agencies to complete a series of steps over several years. These programs are intended to fund major new or extended fixed-guideway or bus rapid transit (BRT) projects. The scale of a single commuter rail station would not seem consistent with the projects typically funded by these programs.

6.8.2 Better Utilizing Investments to Leverage Development (BUILD)

The Better Utilizing Investments to Leverage Development (BUILD) grant program administered through the US Department of Transportation (DOT) replaced Transportation Investment Generating Economic Recovery (TIGER) grants in 2017. This very competitive program is intended to invest in road, rail, transit and port projects that will achieve national objectives. In each competition, DOT receives hundreds of applications to build and repair critical pieces of freight and passenger transportation networks. The eligibility requirements of BUILD allow project sponsors at the state and local levels to obtain funding for multi-modal, multi-jurisdictional projects that are more difficult to support through traditional DOT programs. BUILD can provide capital funding directly to any public entity, including municipalities. Projects for BUILD are evaluated based on merit criteria that include safety, economic competitiveness, quality of life, environmental protection, state of good repair, innovation, partnership, and additional non-Federal revenue for future transportation infrastructure investments.

This may be a funding program to consider, although the highly competitive nature of the grant process at the national level should be taken into account, as should coordination at the local level (both state and region) as stakeholders and political leaders consider which projects in the region to promote. The effort of preparing a compelling and visually attractive application can be extensive, requiring an economic analysis of benefits and costs. If a decision is made to develop a station in Niles, a more comprehensive assessment of this funding source should be performed.

6.8.3 Congestion Mitigation and Air Quality Improvement (CMAQ)

The Congestion Mitigation and Air Quality Improvement (CMAQ) is a federal program that funds surface transportation improvements designed to improve air quality and mitigate congestion. In northeastern Illinois the Chicago Metropolitan Agency for Planning (CMAP) is the programmer of the funds through the MPO Policy Committee. Northeastern Illinois is a moderate non-attainment area for the 8-hour ozone standard and a non-attainment area for annual fine particulate matter standard (PM2.5). Therefore, federal guidance and the CMAQ Project Selection Committee give priority to projects that reduce emissions that contribute to ground level ozone or reduce PM2.5. To carry out these goals of improving air quality and reducing congestion, CMAP uses four objectives in its project selection process:

- Localized Congestion Relief
- Operational Improvements
- Mode Shift
- Direct Emissions Reduction

Among eligible projects, the program will fund the capital costs of transit facility projects that enhance the existing transit system through adding or improving facilities such as stations.

6.8.4 Surface Transportation Program (STP)

The Surface Transportation Program (STP) provides federal flexible funding that may be used by localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects. Funds are programmed locally and administered through CMAP and the Illinois Department of Transportation (IDOT). The Village of Niles is in the Northwest Council of Mayors / Northwest Municipal Conference, which has a self-determined method for selecting projects.

6.8.5 Value Capture

Value capture is a type of public financing that recovers some or all of the value that public infrastructure generates for private landowners. There are several different variations of value capture funding mechanisms that can be considered, including: tax increment financing (TIF) districts, benefit assessment district, real property transfer tax, and joint development.

Tax Increment Financing (TIF)

TIF districts are a common form of value capture. A TIF district with specific geographic boundaries is created for a specific time period—often around 20 years. Over this time period, the property tax revenue income from the increase (or "increment") in assessed value from the base year is set aside in a separate fund which can only be used to pay for or finance improvements within the TIF district. In many capital improvement projects, there is insufficient upfront funding to pay for the infrastructure needed to encourage uplift, which is why TIF is often used to finance the debt that is taken on to enable construction.

The growth in assessed real estate value is typically attributed to public investment in the area, such as the construction of a major piece of infrastructure like a train station, which nearby private landowners benefit from when their property values increase from better transportation access. The mechanism is typically more politically palatable because it does not involve implementing any new taxes, but still creates a dedicated future revenue stream to service construction debt. It also ensures that some of the public benefit from the investment feeds back into the project—i.e., when nearby landowners' property rises in value thanks to the investment, their taxes help support the project.

Much of the Niles station area is already in a TIF district (the Gross Point – Touhy TIF), which includes all of the Touhy Triangle. This is the area that is anticipated to see redevelopment, so no further action would need to take place to enable this potential revenue stream. The TIF district allows most public investment activities, but funds cannot be used for the construction of new privately owned buildings or for retail development that would result in closing nearby existing facilities of the same retailer. In a TIF redevelopment study carried out in 2015, the TIF District's equalized assessed value was nearly $80 million, and the study expected the value to increase to between $130 million and $170 million at the end of the 23-year life cycle of the TIF, assuming that the anticipated private development was completed.

Benefit Assessment District

A benefit assessment district, also known as a special assessment district, involves a new tax levy within a specific geographic area (the "benefit zone," which is typically a half-mile radius), where the property owners can be identified as receiving a direct benefit from a public investment project. Rather than being tied to the assessed value of the parcel, the levy is proportional to the benefit received from the investment.

Since it involves an additional tax on citizens, it can be difficult to gain support for this mechanism. Benefit assessment districts do have proponents, however, due the assumption that that those who benefit the most from an investment, should pay the most—though left unchecked this can lead to increasing concentration of public investment in areas that can afford higher taxes to offset some, but not all, of the costs.

Sales Transaction Tax

In locations that expect to see increased uplift and real estate transaction activity, a tax on sales transactions—or a real property transfer tax—can be another source of revenue. As developers or individuals purchase, renovate, and sell properties, a tax on the transaction can be levied and revenues dedicated to specific purposes, such as financing transportation investments. However, given that there is a need to encourage private investment in Niles station area, it appears premature to propose such a measure at this time.

Joint Development

Joint development can take many different forms, but generally covers the integrated development of transit and non-transit improvements. A common form is the construction of a transit station coordinated with the development of physically adjacent and supporting commercial, residential, or mixed-use development. In such an example, the public agency often contributes the land and some or all of capital costs for the transit/infrastructure component, while the private developer contributes funding and professional expertise to ensuring a successful and profitable project. This may be accomplished using a public-private partnership, and is predicated on sharing both the risks and rewards across the public and private partners. Terms of the joint development must be negotiated on a case-by-case basis, including items such as ownership or lease terms, as well as the divisions of rights and responsibilities among parties. FTA promotes joint development by allowing FTA funds to be contributed to eligible joint development activity.

Appendix

A Impact of Proposed Niles Station on Area Roadway Traffic Volumes

B MWRD Method – Detention Storage Calculations

Impact of Proposed Niles Station on Area Roadway Traffic Volumes

	Howard St West of Lehigh Ave				Howard St Between Lehigh Ave and Menard Ave				Howard St East of Menard Ave			
Time of Day (hr)	Existing Volume	2040 Background Volume	2040 Traffic Added by Niles Station	2040 Total Traffic	Existing Volume	2040 Background Volume	2040 Traffic Added by Niles Station	2040 Total Traffic	Existing Volume	2040 Background Volume	2040 Traffic Added by Niles Station	2040 Total Traffic
0:00-1:00	47	48		48	46	47		47	41	42		42
1:00-2:00	35	36		36	28	29		29	23	23		23
2:00-3:00	34	35		35	25	26		26	19	19		19
3:00-4:00	29	30		30	25	26		26	21	21		21
4:00-5:00	88	90		90	89	91		91	75	77		77
5:00-6:00	269	274	10	284	262	267	6	273	218	222	24	246
6:00-7:00	681	695	28	723	639	652	17	669	493	503	67	570
7:00-8:00	980	1,000	40	1,040	1,067	1,088	24	1,112	856	873	95	968
8:00-9:00	1,005	1,025	16	1,041	1,084	1,106	10	1,116	814	830	39	869
9:00-10:00	722	736	3	739	630	643	2	645	533	544	6	550
10:00-11:00	556	567	1	568	675	689	1	690	582	594	3	597
11:00-12:00	630	643	1	644	699	713	1	714	656	669	3	672
12:00-13:00	708	722	2	724	901	919	1	920	875	893	3	896
13:00-14:00	687	701	2	703	871	888	1	889	828	845	5	850
14:00-15:00	894	912	2	914	915	933	1	934	811	827	4	831
15:00-16:00	1,035	1,056	5	1,061	1,162	1,185	3	1,188	1,004	1,024	11	1,035
16:00-17:00	1,403	1,431	17	1,448	1,383	1,411	10	1,421	1,222	1,246	40	1,286
17:00-18:00	1,321	1,347	38	1,385	1,516	1,546	22	1,568	1,333	1,360	89	1,449
18:00-19:00	845	862	30	892	953	972	18	990	842	859	71	930
19:00-20:00	433	442	4	446	597	609	3	612	563	574	11	585
20:00-21:00	322	328	3	331	367	374	2	376	382	390	8	398
21:00-22:00	215	219	2	221	289	295	1	296	256	261	4	265
22:00-23:00	170	173	1	174	152	155	1	156	123	125	2	127
23:00-24:00	81	83	1	84	115	117	-	117	111	113	1	114
Total Daily Volume	13,190	13,454	206	13,660	14,490	14,780	124	14,904	12,681	12,935	486	13,421
K-factor	0.11			0.11	0.11			0.11	0.11			0.11
D-Factor	0.54			0.54	0.50			0.50	0.52			0.51
Growth Rate	2%				2%				2%			
2040 Daily Traffic Volume												
AADT				11,800				13,500				11,800
Road Cross-section	4 lane				4 lane				2 lane			
Speed	40mph				40mph				40mph			
LOS	**D**			**D**	**D**			**D**	**E**			**E**

	Touhy Avenue West of Lehigh Ave				Touhy Avenue East of Lehigh Ave				Lehigh Ave North of Parking Lot				Lehigh Ave South of Parking Lot			
Time of Day (hr)	Existing Volume	2040 Background Volume	2040 Traffic Added by Niles Station	2040 Total Traffic	Existing Volume	2040 Background Volume	2040 Traffic Added by Niles Station	2040 Total Traffic	Existing Volume	2040 Background Volume	2040 Traffic Added by Niles Station	2040 Total Traffic	Existing Volume	2040 Background Volume	2040 Traffic Added by Niles Station	2040 Total Traffic
0:00-1:00	223	226		226	298	298		298	43	44		44	43	44		44
1:00-2:00	121	123		123	132	132		132	29	30		30	29	30		30
2:00-3:00	99	101		101	151	151		151	37	38		38	37	38		38
3:00-4:00	93	94		94	155	155		155	62	64		64	62	64		64
4:00-5:00	218	221		221	297	297		297	98	101		101	98	101		101
5:00-6:00	520	528	8	536	863	863	9	872	267	275	16	291	267	275	10	285
6:00-7:00	1,294	1,314	21	1,335	1,715	1,715	24	1,739	354	365	45	410	354	365	27	392
7:00-8:00	1,828	1,856	30	1,886	2,383	2,383	35	2,418	431	444	64	508	431	444	39	483
8:00-9:00	1,910	1,939	12	1,951	2,322	2,322	14	2,336	538	555	26	581	538	555	16	571
9:00-10:00	1,681	1,707	2	1,709	2,058	2,058	3	2,061	466	480	5	485	466	480	3	483
10:00-11:00	1,636	1,661	1	1,662	2,208	2,208	1	2,209	452	466	2	468	452	466	1	467
11:00-12:00	1,735	1,762	1	1,763	2,454	2,454	1	2,455	475	490	2	492	475	490	1	491
12:00-13:00	1,721	1,747	1	1,748	2,756	2,756	2	2,758	436	449	3	452	436	449	2	451
13:00-14:00	1,710	1,736	2	1,738	2,603	2,603	2	2,605	346	357	3	360	346	357	3	360
14:00-15:00	1,763	1,790	2	1,792	2,764	2,764	2	2,766	287	296	3	299	287	296	3	299
15:00-16:00	1,984	2,014	3	2,017	2,761	2,761	4	2,765	316	326	8	334	316	326	4	330
16:00-17:00	2,017	2,048	12	2,060	2,874	2,874	15	2,889	265	273	27	300	265	273	16	289
17:00-18:00	2,049	2,080	28	2,108	3,054	3,054	32	3,086	295	304	60	364	295	304	36	340
18:00-19:00	1,920	1,949	22	1,971	2,755	2,755	26	2,781	305	314	48	362	305	314	29	343
19:00-20:00	1,545	1,569	3	1,572	2,276	2,276	4	2,280	158	163	7	170	158	163	4	167
20:00-21:00	1,263	1,282	2	1,284	1,865	1,865	2	1,867	157	162	5	167	157	162	3	165
21:00-22:00	930	944	1	945	1,452	1,452	1	1,453	126	130	3	133	126	130	1	131
22:00-23:00	549	557	1	558	967	967	1	968	103	106	2	108	103	106	1	107
23:00-24:00	362	368	-	368	589	589	1	590	82	85	1	86	82	85	-	85
Total Daily Volume	29,171	29,618	152	29,770	41,752	41,752	179	41,931	6,128	6,318	330	6,648	6,128	6,318	199	6,517
K-factor	0.07			0.07	0.07			0.07	0.09			0.09	0.09			0.09
D-Factor	0.52			0.52	0.49			0.49	0.62			0.61	0.62			0.62
Growth Rate	2%				0%				3%				3%			
2040 Daily Traffic Volume																
AADT				26,100				39,000				4,850				4,850
Road Cross-section	4 lane				4 lane				2 lane				2 lane			
Speed	35 mph				35 mph				35 mph				35 mph			
LOS	**D**			**D**	**E**			**E**	**D**			**D**	**D**			**D**

MWRD METHOD - DETENTION STORAGE CALCULATIONS

(Bulletin 70 NE Sectional Rainfall Intensities)

PROJECT: Niles Station Study
JOB NO.: 60571511
FILENAME: NilesStationStudy_ModifiedRationalMethod.xls
DATE : 27-Nov-18

TRIBUTARY AREA = 10.18 acres
COMPOSITE RUNOFF COEFFICIENT = 0.81
ALLOWABLE RELEASE RATE = 3.05 cfs

COMPUTED DETENTION STORAGE = **2.802 acre-ft**

DURATION (hours)	TIME (min.)	RAINFALL INTENSITY (in/hr)	INFLOW RATE (cfs)	STORED RATE (cfs)	RESERVOIR SIZE (ac-ft)
0.08	5	10.90	89.80	86.75	0.597
0.17	10	10.02	82.55	79.50	1.095
0.25	15	8.20	67.55	64.50	1.333
0.33	20	7.30	60.14	57.09	1.573
0.50	30	5.60	46.14	43.09	1.780
0.67	40	4.58	37.73	34.68	1.911
0.83	50	3.97	32.71	29.66	2.042
1	60	3.56	29.33	26.28	2.172
1.5	90	2.68	22.08	19.03	2.359
2	120	2.24	18.45	15.40	2.545
3	180	1.62	13.35	10.30	2.553
4	240	1.40	11.53	8.48	***2.802*** ←
5	300	1.17	9.64	6.59	2.722
6	360	0.95	7.83	4.78	2.369
7	420	0.83	6.84	3.79	2.191
8	480	0.75	6.18	3.13	2.067
9	540	0.68	5.60	2.55	1.894
10	600	0.63	5.19	2.14	1.766
11	660	0.59	4.86	1.81	1.642
12	720	0.55	4.53	1.48	1.464
18	1080	0.39	3.21	0.16	0.233
24	1440	0.32	2.64	-0.41	-0.820
36	2160	0.22	1.81	-1.24	-3.699
48	2880	0.17	1.40	-1.65	-6.559

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