Pace Central Harlem Avenue Corridor Study

Transportation and Land Use Improvement Plan

REVISED NOVEMBER 2, 2018

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CENTRAL HARLEM AVENUE CORRIDOR

pace

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Acknowledgements

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More than 40 individuals took part in stakeholder interviews as part of this project. The interviews conducted are listed in Appendix C.

This report was prepared by the following consultant team:

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Introduction

Harlem Avenue is one of seven Chicagoland corridors that Pace Suburban Bus has identified as a priority for developing Pulse arterial rapid bus transit over the next 10 years. Pulse is a new rapid transit network, which will provide fast, frequent and reliable bus service using the latest technology and streamlined route design. To advance this vision, Pace and RTA initiated the Central Harlem Avenue Corridor Study with the objectives of preparing the corridor for eventual Pulse arterial rapid bus transit service, enhancing pedestrian connectivity to current and future bus stop locations, increasing passenger and pedestrian safety, improving bus speed and reliability, and promoting transit-oriented development.

The Central Harlem Avenue Corridor Study focuses on the segment of Harlem Avenue between 71st Street and North Avenue – one of Pace's busiest bus corridors. The project began with an Existing Conditions Assessment that examined transit access, performance of all travel modes, demographic patterns, land use and development conditions within this corridor. The full Existing Conditions Assessment can be found in Appendix A, but a summary of its findings is included below. This assessment, in addition to public feedback and extensive stakeholder interviews, informed recommendations to improve access to transit.

Our Existing Conditions Assessment showed that Central Harlem Avenue is a diverse corridor linking 14 municipalities over 10 miles. Approximately 85,000 people live in the corridor study area and approximately 25,000 people work there. Both jobs and residents tend to be concentrated in the north end of the corridor. Population density is greatest in Oak Park and Forest Park, and the largest cluster of jobs is in downtown Oak Park. Demographic factors that support transit, such as younger age and lower incomes, are more prevalent toward the south end of the corridor. The south end of the corridor also tends to see employment that is focused in the industrial/goods sector, while the north's jobs are more in the service sector.

Central Harlem Avenue accommodates a wide variety of transportation options. Although driving is the most popular commuting option (75%), public transit is used by 16% of commuters, which is higher than for the overall metropolitan area (13%). Transit options in the corridor include two CTA rail stations, two Metra rail stations, and numerous Pace and CTA bus routes as shown in Figure 1b. Conditions for walking vary throughout the corridor, with the north section of the corridor being quite walkable and the south of the corridor being more auto-oriented. (Pedestrian accommodations are an essential element of transit access.) There is very little bicycling on the corridor due to heavy auto traffic and high speeds. The corridor also includes significant freight trucking activity, concentrated at the south end of the corridor. Trips in this corridor tend to be less than 5 miles long, occur during off-peak times, be for non-commute purposes, and be more east-west than north-south.

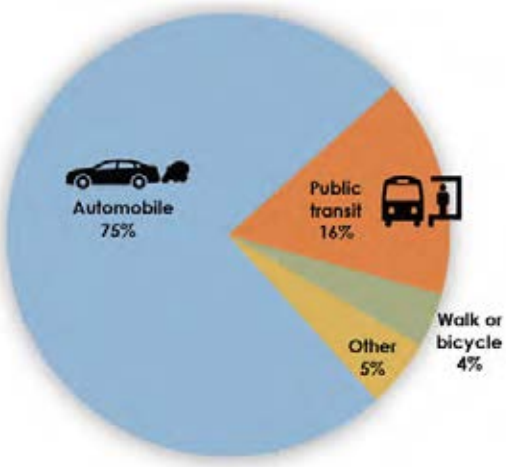


Figure 1a – Mode of transportation used by commuters in the corridor. Source: American Community Survey, 5-year Estimates (2011-2016)

Figure 1b. Transit Service in the Study Area

A number of issues were identified in the Existing Conditions Assessment that this Improvement Plan will seek to address where possible. First, the review of public transit performance indicated that bus trips along the corridor take 40-50% longer on average than auto trips. The next section of this report will discuss strategies for speeding up transit service. Another issue identified was a shortage of pedestrian crossing opportunities. Eight areas were identified where pedestrian crossing opportunities are spaced ½ mile apart or more. Finally, the review of zoning policies found that zoning could be more transit-supportive and could encourage a more walkable urban form. Fortunately, many projects are underway to improve specific locations along Central Harlem Avenue – these all represent opportunities for coordination to address the corridor's issues.

Central Harlem Avenue serves many competing local and regional needs. From the perspective of Pace's emerging arterial-based rapid transit system, Harlem Avenue provides a crucial north-south connection. It could one day link rapid transit service in the region's north suburbs, west suburbs, and south suburbs. Harlem Avenue is under the jurisdiction of the Illinois Department of Transportation (IDOT), which classifies the corridor as a Strategic Regional Arterial (SRA). This means that Harlem is intended to carry large volumes of traffic at higher speeds, and IDOT carefully restricts access points to optimize vehicular level of service. This stretch of Harlem is also designated as a Class Two Truck Route, with some major intermodal freight facilities at the south end of the corridor. This study seeks to find ways for these different uses of the corridor to work in harmony.

As mentioned above, Pulse arterial rapid bus transit service is a new rapid transit network, which will provide fast, frequent and reliable bus service using the latest technology and streamlined route design. It includes limited-stop express service with stops approximately every half mile. Buses will utilize transit signal priority (TSP) to improve bus speed and reliability at traffic signals by requesting a shorter red light or extended green light. Pulse stations will be easy to find with vertical markers, and will incorporate real-time arrival signage and weather protection. Pulse vehicles will be equipped with Wi-Fi and USB charging ports.

Figure 1c - Pulse station example. Source: Pace

This corridor study represents the second step in the process of developing this corridor for Pulse Line implementation. As Figures 1d and 1e illustrate, Pulse Lines begin with visioning and then have a corridor study with interim improvements. Following this corridor study, Harlem would require a project definition, environmental review, design, and construction before Pulse service could become a reality. Because of the significant development work that lies ahead for this corridor, all recommendations from this corridor study should be understood as preliminary and contingent upon the outcome of more detailed review.

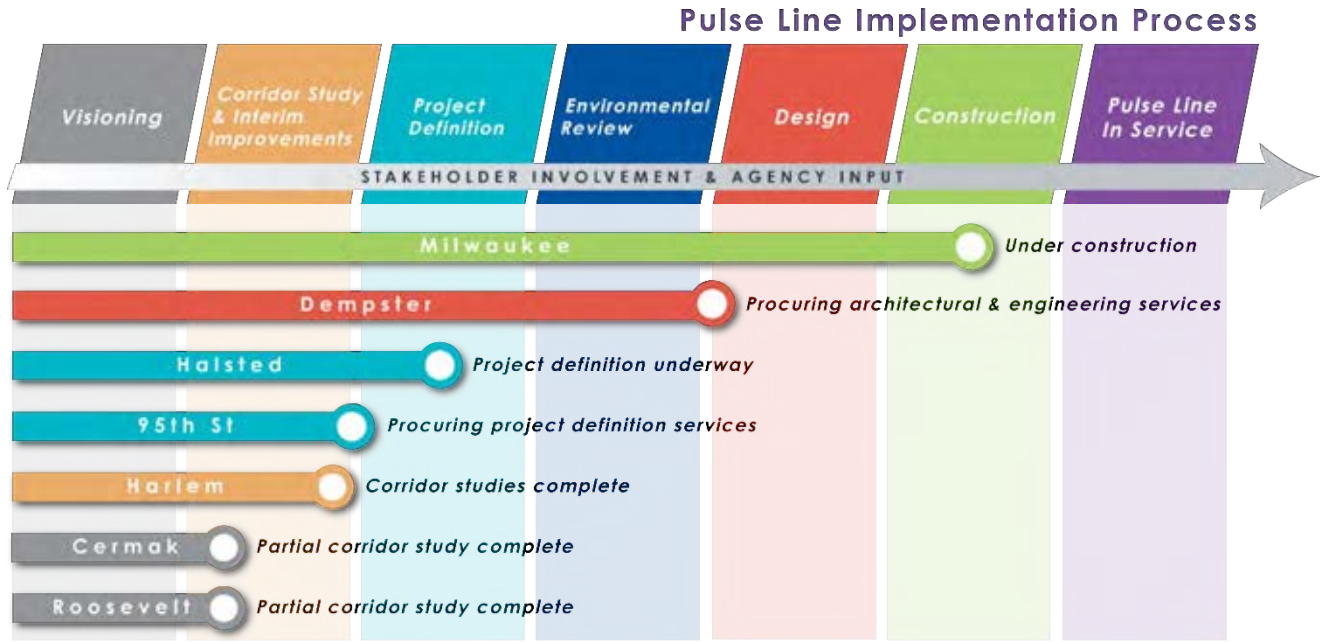


Figure 1d – The Pulse Line Implementation Process. Harlem is in the second stage, Corridor Study and Interim Improvements. Source: Pace

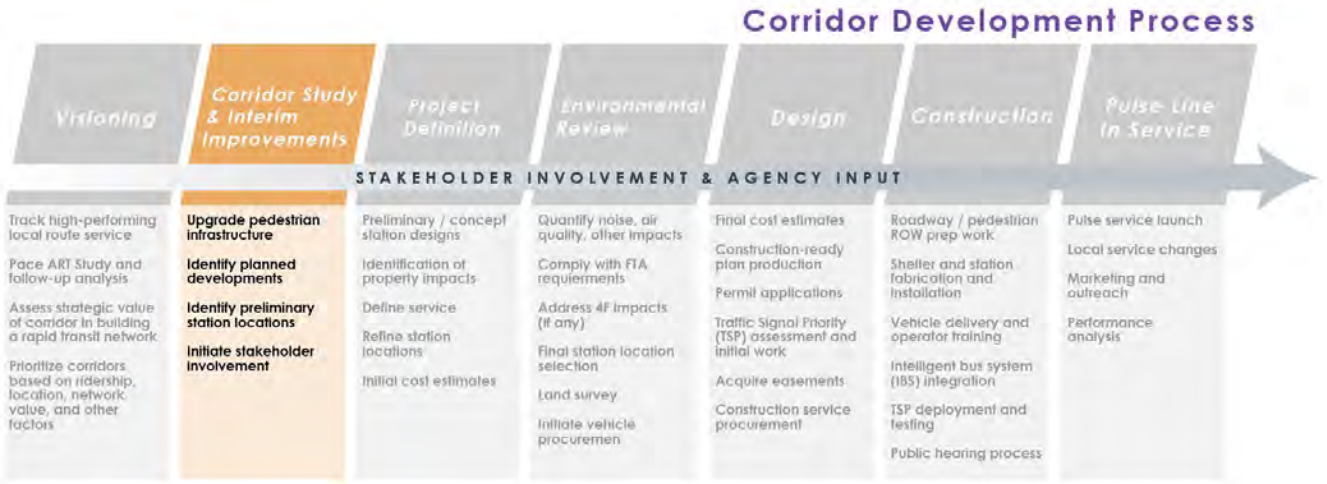


Figure 1e – The Corridor Development Process. Harlem is in the second stage, Corridor Study and Interim Improvements. Source: Pace

This plan will continue with two core sections of analysis and recommendations. First, it will present analysis of potential Pulse station locations and other features of the service. This will recommend which stations ought to be prioritized and where changes may be needed to justify a station. Then the plan will explore the conditions of each individual station area. Station area recommendations will suggest improvements to enhance transit access and specific sites of potential stations. The plan will conclude with a summary of action items needed for implementation within each community.

Creating Pulse Transit Service

Transit Station Location Analysis and Recommendations

One of the most important decisions in the design of future Pulse rapid transit service is the selection of locations for Pulse stations. Stations should be placed in areas with strong demand for public transit, spaced far enough apart to preserve the speed of Pulse service, but also distributed to ensure coverage of existing riders and destinations. Detailed analysis of these considerations was conducted to provide a rigorous foundation for station location decisions. The analysis was carried out for nineteen candidate locations identified by the project team.

In addition to informing station selection decisions, the station location analysis will also provide insight into the needs for other improvements. The analysis can show where infrastructure improvements may have the greatest impact on a potential station's competitiveness, or where new development or redevelopment may have the most value. While the following analysis focuses on the corridor's current condition, the potential for change should be considered based on the recommended improvements in the following sections of this report, "Expanding Access to Transit" and "Development Market Analysis and Typology".

Transit Competitiveness

A mapping exercise was used to visualize the overall competitiveness of public transit throughout the corridor. First the study area was divided into a grid of ¼ mile by ¼ mile squares for analysis. Maps were created that represented transit competitiveness throughout this grid. A dozen different factors related to public transit demand were combined into an overall indicator. The factors were weighted to reflect their relative importance; several weighting scenarios were used to represent various perspectives.

The factors that contributed to the evaluation of transit competitiveness are summarized in Table 1. They fall into three categories: Demographic/Land Use, Walkability/Bikeability, and Transit Access. Demographic/Land Use factors include population and employment concentration, level of transportation disadvantage, transit conducive land use, potential for redevelopment, the level of travel demand based on the CMAP regional model, and scarcity of on-street parking. Walkability/Bikeability factors include the density of blocks, the density of pedestrian crossing opportunities, and the length with a raised median. Finally, Transit Access factors include the connectivity with rail transit service, the Transit Friendliness Index presented in Appendix A, and connectivity with existing or planned east-west bus service.

The weightings of each factor under each scenario are summarized in Table 2. The first two scenarios seek to create a composite measure by weighting the different factors equally on an individual basis (Flat scenario) or on a categorical basis (Evenly Weighted.) The next three scenarios prioritize different categories. People and Places prioritizes the Demographic/Land Use category, Take a Hike prioritizes Walkability/Bikeability, and All Aboard prioritizes Transit Access. The final three scenarios go a step further and give 100% of weighting to the same categories.

Table 1 – Criteria that influence transit competitiveness

Criteria	Description/Definition	Scoring strategy
Demographic/Land Use		
Population and Employment	Total people (population + jobs) in each grid cell.	The higher the people, the higher the score.
Transportation Disadvantaged Index	An index relative to the total households in poverty, population over age 5 with limited english proficiency, people of color, seniors, youth, zero-car households, and households with one or more persons with a disability in each grid cell.	The higher the index, the higher the score.
Land Use Typology	A qualitative description based on the mix of land uses and corridor characteristics in a given area.	Typologies that are more conducive to transit receive a higher scsore.
Redevelopment Potential	Total acreage of redevelopment sites within each grid cell.	The more redevelopable land, the higher the score.
Travel Demand	Total trip ends (origins and destinations) within each grid cell.	The higher the trip volume, the higher the score.
On-Street Parking Availability	Qualitative measure of parking supply within each area.	Limited parking supply = 1, Not limited = 0.
Walkability/Bikeability		
Block Density	Number of census block centroids per grid cell.	The higher the density, the higher the score.
Pedestrian crossing opportunities	Number of crossing opportunities (along the corridor) within 100 feet of each grid cell. Crossing opportunities can include signalized intersections, marked crosswalks and other legally designated locations.	The greater the number of crossing opportunities, the higher the score.
Raised Median	Percent of grid cell fronted by a raised median.	The higher the percentage, the higher the score.
Transit Access		
Rail Access/Connectivity	Metra station or CTA station within within grid cell (Y/N).	Metra/CTA station present = 1; Not present = 0.
Transit Friendliness Index	An index relative to traffic volume (AADT), truck volume (HCV), number of lanes, speed limit, lane width, parking, bicycle connectivity, sidewalk coverage and tree coverage along the corridor.	The higher the index, the higher the score.
East-West Bus Service	Presence of existing Pace or CTA bus service or planned Pulse service on intersecting east-west corridors.	Existing OR proposed service = 1; Existing AND proposed service = 2; No service = 0

Table 2 – Weighting of each transit competitiveness factor under each weighting scenario

Criteria	Weighting Scenarios															
	Flat		Evenly Weighted		People and Places		Take a Hike		All Aboard		People and Places (Full Weight)		Take a Hike (Full Weight)		All Aboard (Full Weight)	
Demographic/Land Use	**5**	**45%**	**4**	**33%**	**10**	**79%**	**2**	**21%**	**2**	**24%**	**10**	**100%**	**0**	**0%**	**0**	**0%**
Population and Employment	5	9%	4	7%	10	16%	2	4%	2	5%	10	20%	0	0%	0	0%
Transportation Disadvantaged Index	5	9%	4	7%	10	16%	2	4%	2	5%	10	20%	0	0%	0	0%
Land Use Typology	5	9%	4	7%	10	16%	2	4%	2	5%	10	20%	0	0%	0	0%
Redevelopment Potential	5	9%	4	7%	10	16%	2	4%	2	5%	10	20%	0	0%	0	0%
Travel Demand	5	9%	4	7%	10	16%	2	4%	2	5%	10	20%	0	0%	0	0%
On-Street Parking Availability	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Walkability/Bikeability	**5**	**27%**	**7**	**34%**	**2**	**10%**	**10**	**64%**	**2**	**15%**	**0**	**0%**	**10**	**100%**	**0**	**0%**
Block Density	5	9%	7	11%	2	3%	10	21%	2	5%	0	0%	10	33%	0	0%
Pedestrian crossing opportunities	5	9%	7	11%	2	3%	10	21%	2	5%	0	0%	10	33%	0	0%
Raised Median	5	9%	7	11%	2	3%	10	21%	2	5%	0	0%	10	33%	0	0%
Transit Access	**5**	**27%**	**6.7**	**33%**	**2.3**	**11%**	**2.3**	**15%**	**8.3**	**61%**	**0**	**0%**	**0**	**0%**	**8.3**	**100%**
Rail Access/Connectivity	5	9%	8	13%	3	5%	3	6%	10	24%	0	0%	0	0%	10	40%
Transit Friendliness Index	5	9%	6	10%	2	3%	2	4%	7.5	18%	0	0%	0	0%	7.5	30%
East-West Bus Service	5	9%	6	10%	2	3%	2	4%	7.5	18%	0	0%	0	0%	7.5	30%

Figures 2 through 9 show the transit competitiveness maps resulting from each of the eight weighting scenarios. Each map visualizes transit competitiveness using colors from red to green. The candidate station locations are identified for reference, and the grid cells with scores in the top ten for each scenario are highlighted. A summary of how each candidate station location performs in each evaluation scenario is shown in Table 3.

Most of the candidate station locations perform strongly in at least some scoring scenarios. These include North Avenue, Chicago Avenue, Circle Avenue/South Boulevard, Madison Street, Eisenhower Expressway, Cermak Road, 26th Street, Longcommon Road/Riverside Drive, Harlem Metra BNSF Station, and Ogden Avenue. It is noteworthy that the strongly performing stations are concentrated towards the north end of the corridor, and none are located south of Ogden Avenue.

Pulse stations would certainly be needed south of Ogden Avenue to provide reasonable access to the service. To avoid having the analysis be dominated by the northern section, a secondary round of transit competitiveness analysis was conducted only for the area south of Ogden Avenue. The resulting maps are presented in Appendix B. These indicate that, within the southern portion of the corridor, Archer Avenue and Joliet Road show the greatest potential demand for public transit.

Table 3 – Results of transit competitiveness analysis for each station candidate under each weighting scenario

Ref. No.	StationName	Flat	Evenly Weighted	People and Places	People and Places (Full Weight)	Take a Hike	Take a Hike (Full Weight)	All Aboard	All Aboard (Full Weight)	Total Top Ten
1	North							●	●	2
2	Division									0
3	Chicago			●	●					2
4	Circle/South	●	●	●	●	●		●	●	7
5	Madison	●	●	●	●	●	●	●		7
6	Eisenhower	●	●			●	●	●	●	6
7	Roosevelt				●					1
8	16th			●	●					2
9	Cermak	●	●	●	●	●	●	●	●	8
10	26th	●	●	●		●	●			5
11	Long Common/ Riverside				●	●	●			3
12	Harlem Ave. Metra	●	●					●	●	4
13	Ogden					●	●			2
14	41st									0
15	47th									0
16	Stevenson									0
17	Archer									0
18	63rd									0
19	71st									0

● = Borders zone with top 10 TC score

Figure 2 - Transit Competitiveness under "Flat" Scenario

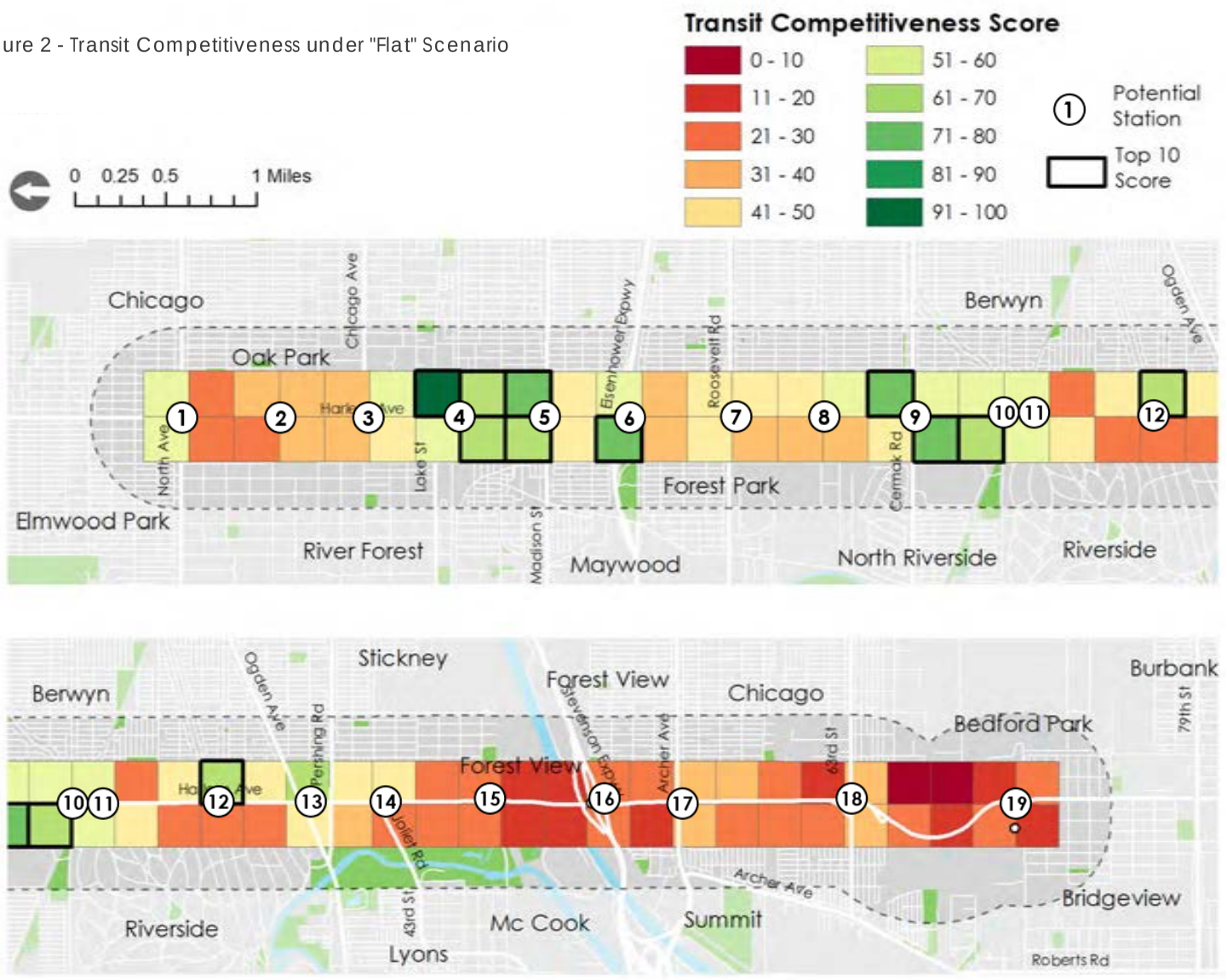
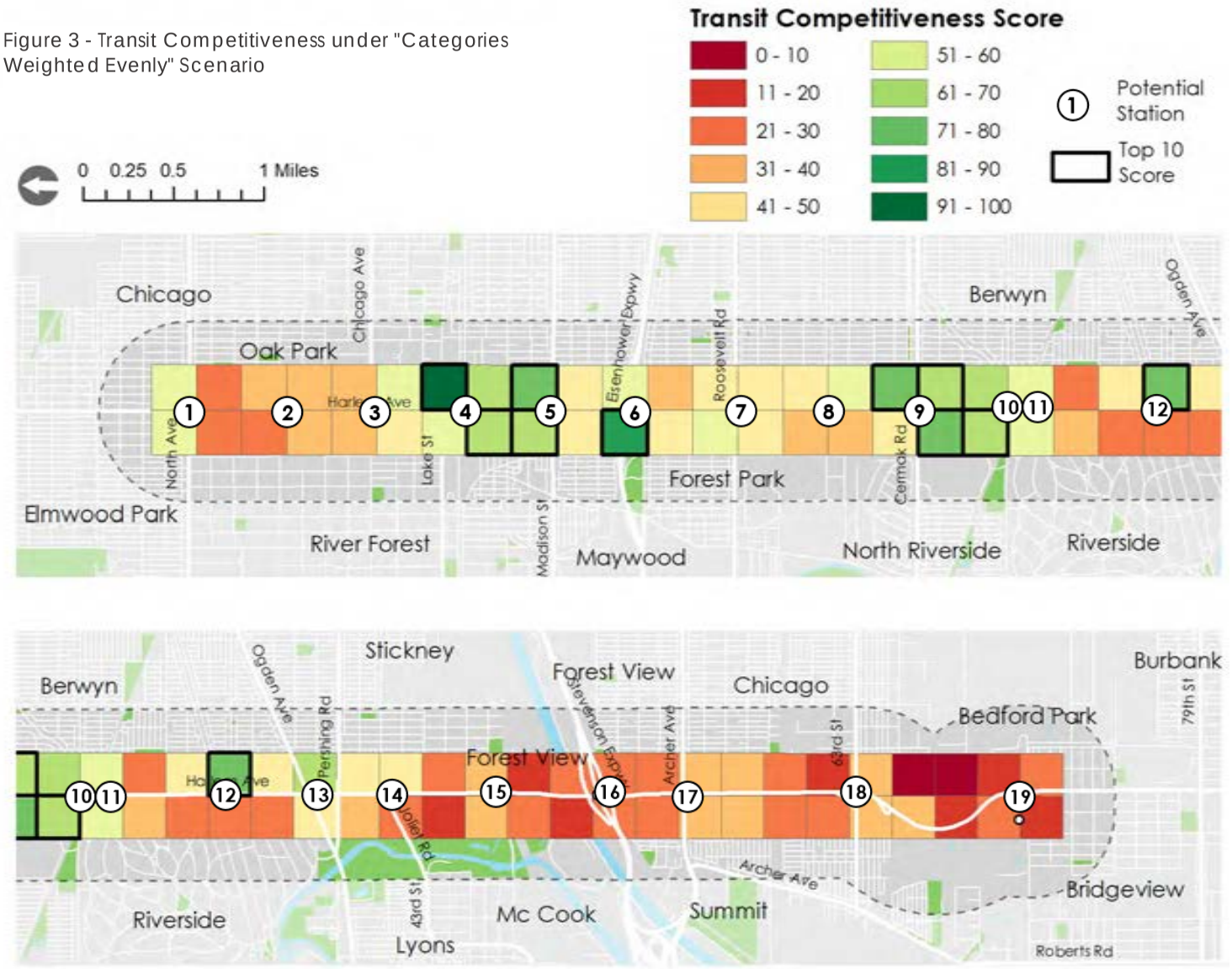


Figure 3 - Transit Competitiveness under "Categories Weighted Evenly" Scenario



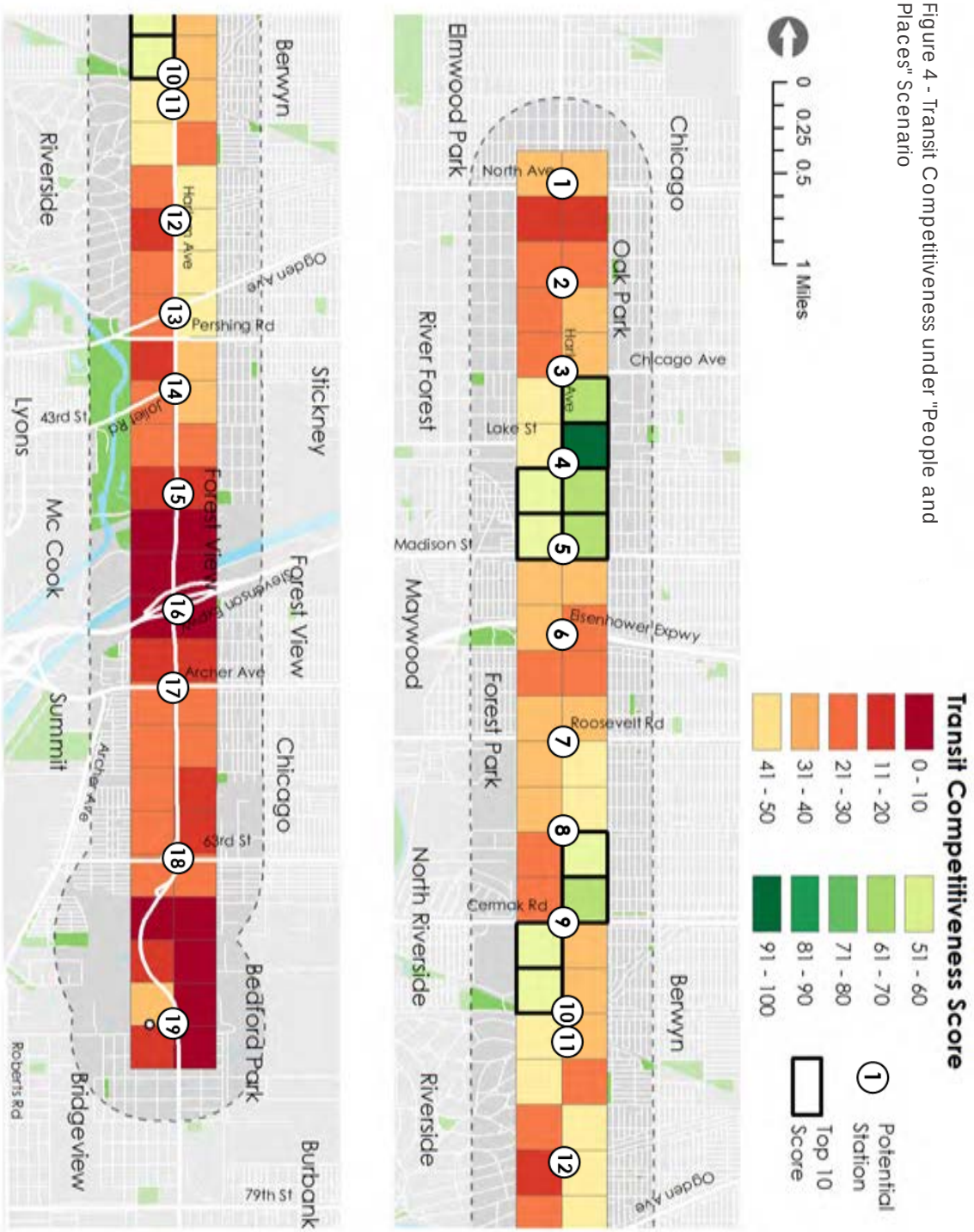


Figure 4 - Transit Competitiveness under "People and Places" Scenario

Figure 5 - Transit Competitiveness under "People and Places Absolute" Scenario

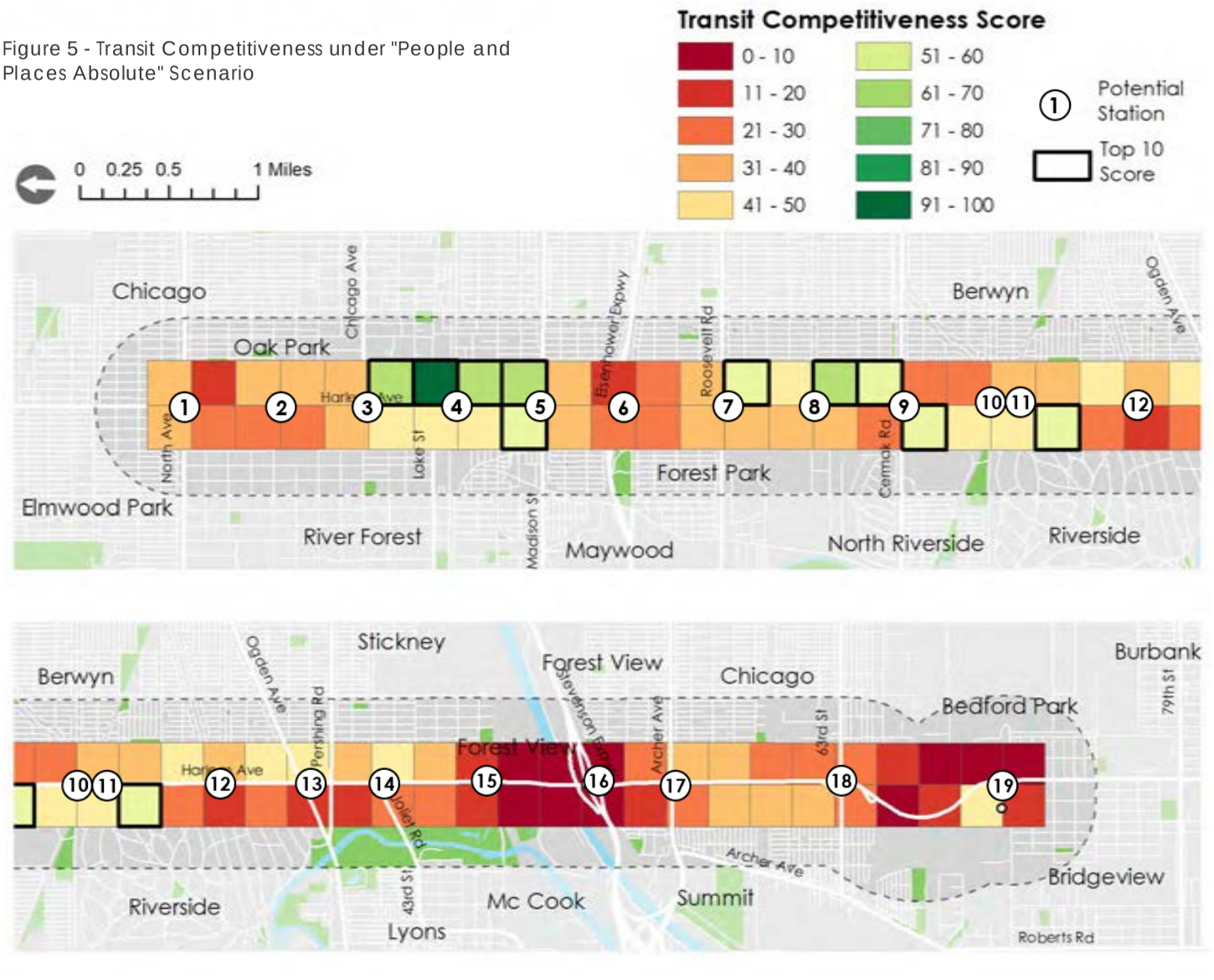
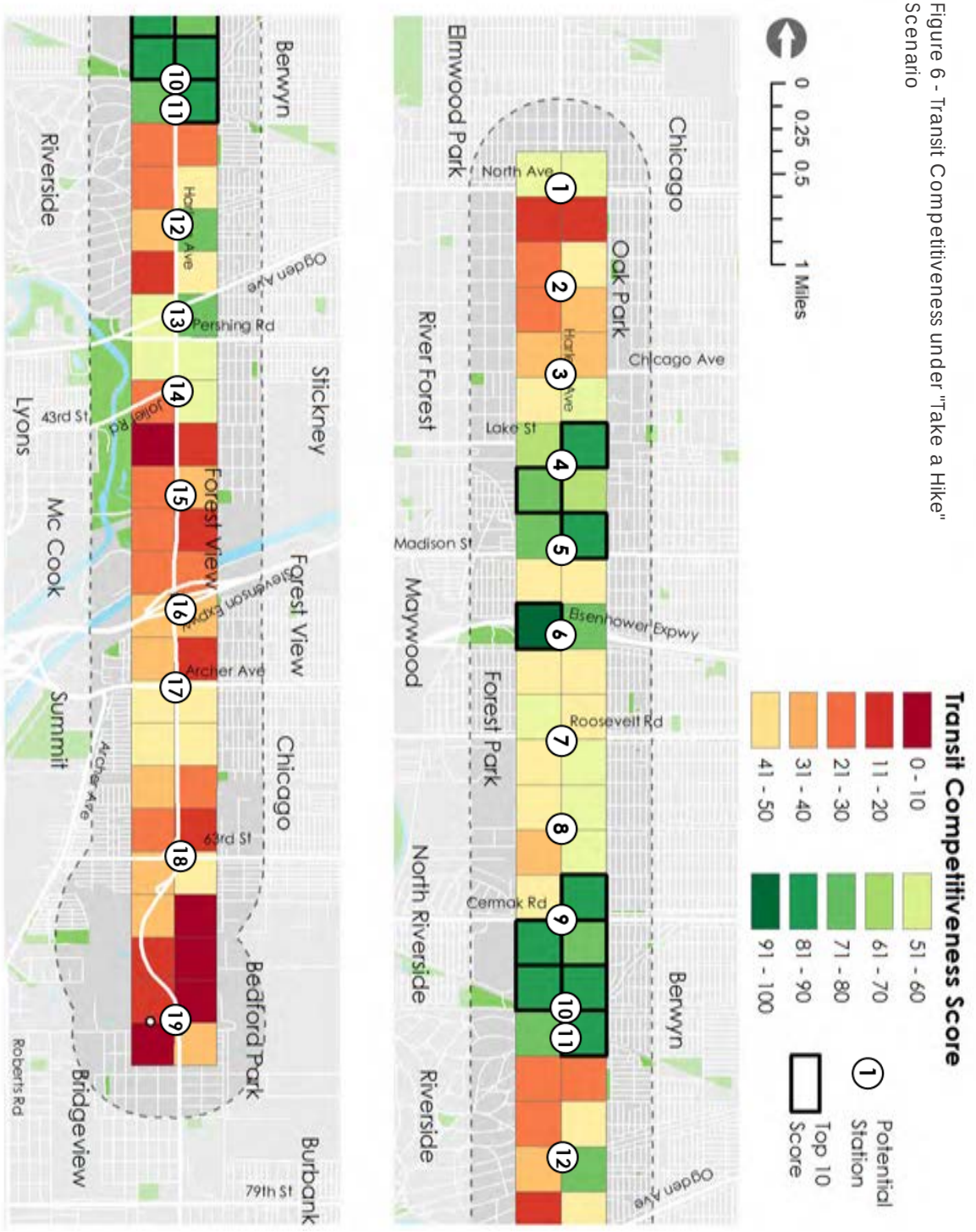


Figure 6 - Transit Competitiveness under "Take a Hike" Scenario



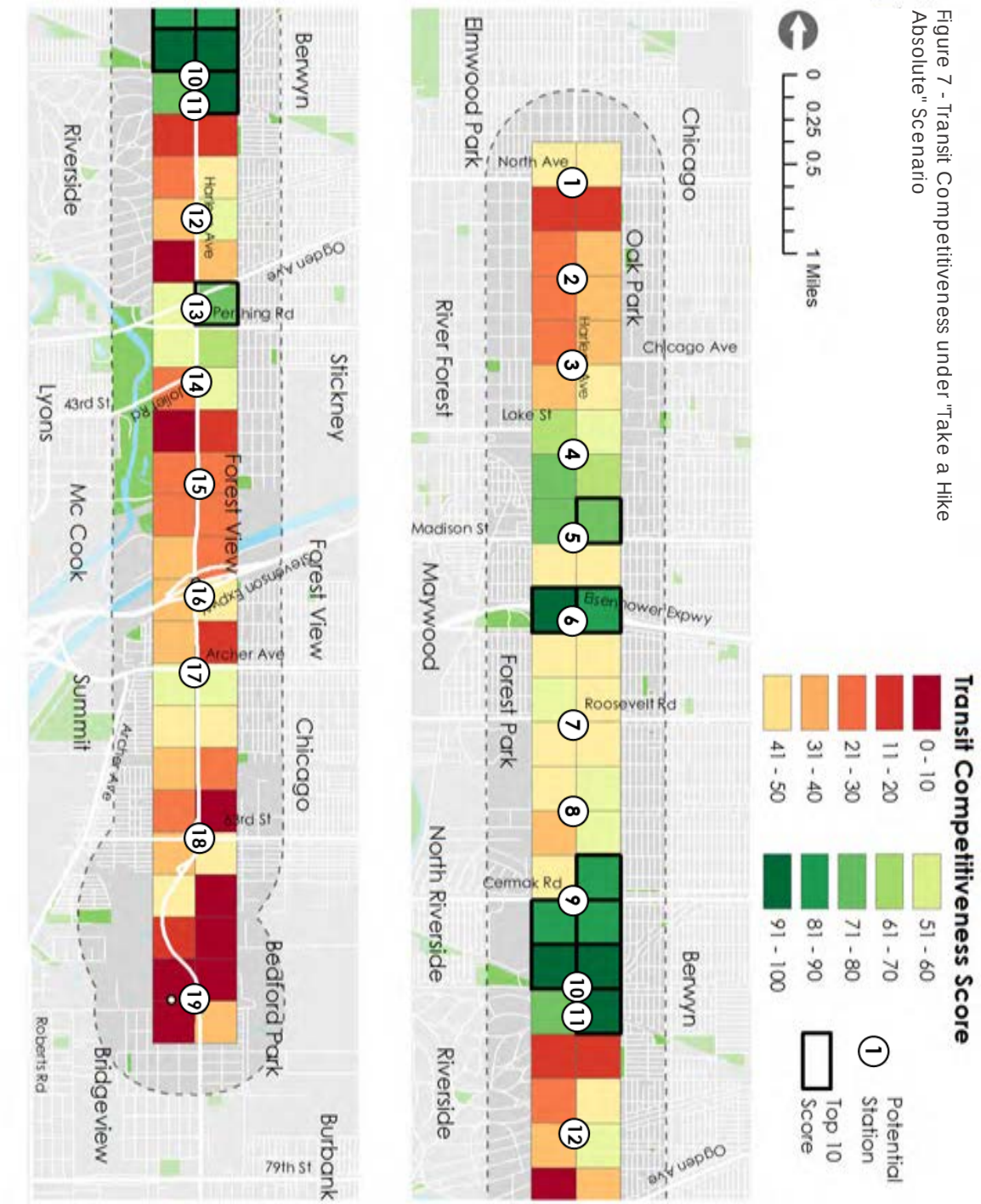


Figure 7 - Transit Competitiveness under "Take a Hike Absolute" Scenario

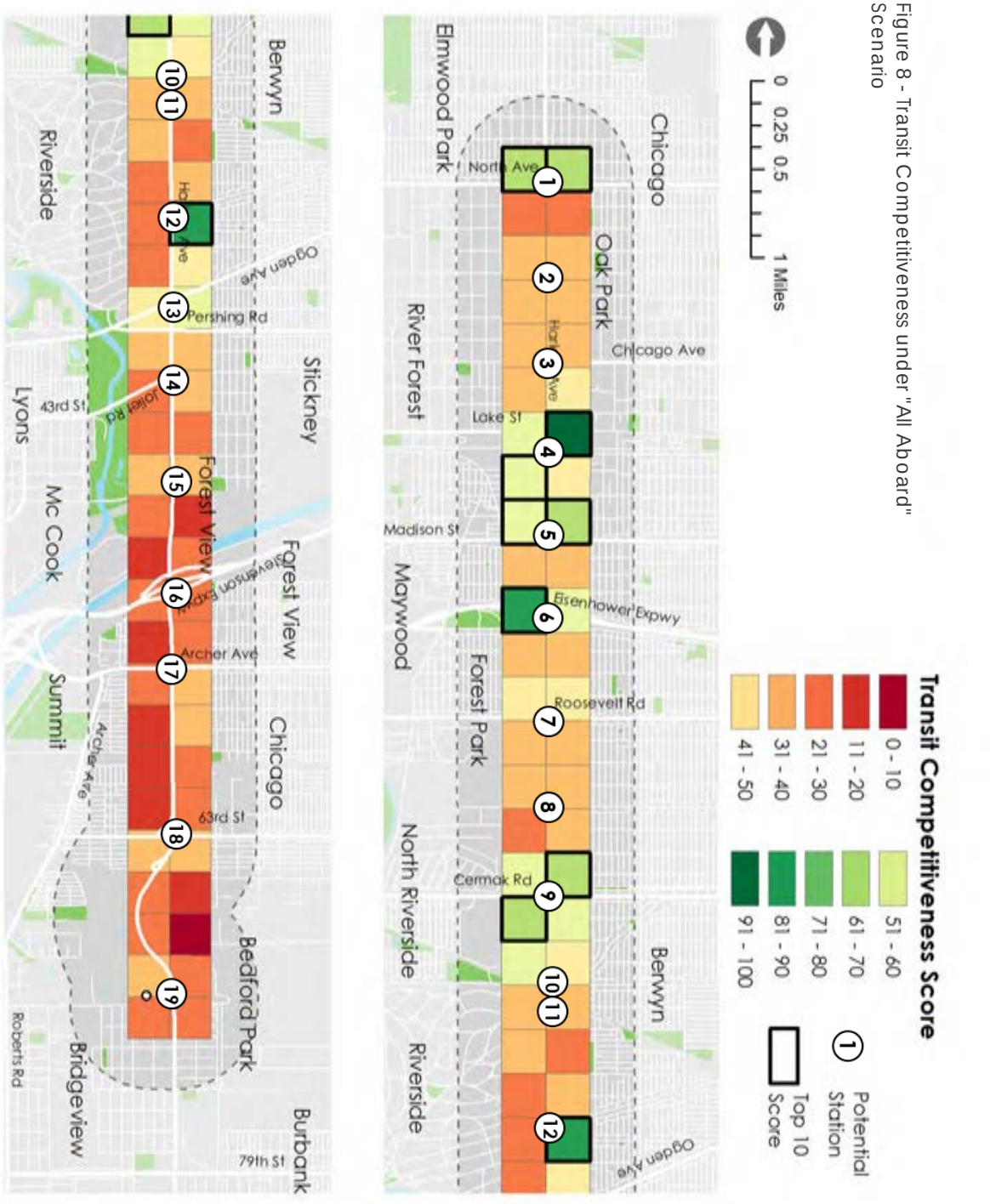


Figure 8 - Transit Competitiveness under "All Aboard" Scenario

Figure 9 - Transit Competitiveness under "All Aboard Absolute" Scenario

In addition to the analysis of transit competitiveness, analysis of several other factors was conducted. This included measuring the coverage of population, employment, current bus ridership, and community destinations within walking distance of the candidate stations. It also included analyzing the spacing of potential stations, and reviewing the connections with existing and planned east-west transit service. All of these factors ultimately contribute to a subjective prioritization of potential station locations.

Coverage of Destinations

The station coverage of key destinations was assessed based on local walksheds that show the area that can be reached within a certain walking distance using the street network. Within 1/8 mile and 1/4 mile walksheds, we calculated the coverage of population and employment based on Census Bureau counts. The share of existing daily transit riders within walking distance of each station was also calculated. (This is based on the ridership from corridor bus routes 307, 318, and 386 within ¼ mile of the study corridor.) Table 4 summarizes the coverage results.

Table 4 – Coverage of population, employment, and transit ridership within station walksheds

Ref. No.	StationName	Pop+Emp (1/8 Mi)	Pop+Emp (1/4 Mi)	Share of Daily Riders (1/8 Mile)	Share of Daily Riders (1/4 Mile)
1	North	555	1,747	9.9%	10.2%
2	Division	233	801	1.4%	1.8%
3	Chicago	265	1,249	0.7%	1.9%
4	Circle/South	484	3,811	21.9%	27.9%
5	Madison	698	2,336	3.4%	4.8%
6	Eisenhower	95	522	6.6%	7.3%
7	Roosevelt	516	2,001	3.5%	3.8%
8	16th	780	1,976	1.1%	2.3%
9	Cermak	729	1,326	10.0%	12.3%
10	26th	104	371	0.4%	2.2%
11	Long Common	287	983	0.5%	1.2%
12	Harlem Ave. Metra	460	1,217	2.7%	3.3%
13	Ogden	420	1,836	4.0%	5.9%
14	41st	261	899	0.9%	1.4%
15	47th	70	175	0.5%	0.9%
16	Stevenson	48	92	0.0%	0.0%
17	Archer	739	1,973	3.1%	3.8%
18	63rd	618	2,114	4.6%	5.0%
19	71st	34	227	0.5%	0.7%

Spacing of Stations

The spacing of potential Pulse stations was also evaluated. The distance to the nearest station was measured in each direction, as was the gap between stations that would occur should any candidate station be removed. These results are shown in Table 5. Pace's preferred station spacing for Pulse stations is approximately ½ mile – this aligns well with the spacing of arterial streets at the north end of Central Harlem Avenue, but towards the south end of the corridor the arterial intersections become spaced further apart. Table 5 also identifies connections with existing and planned east-west transit services, which are important to consider when recommending station locations.

Table 5 – Spacing of candidate Pulse stations

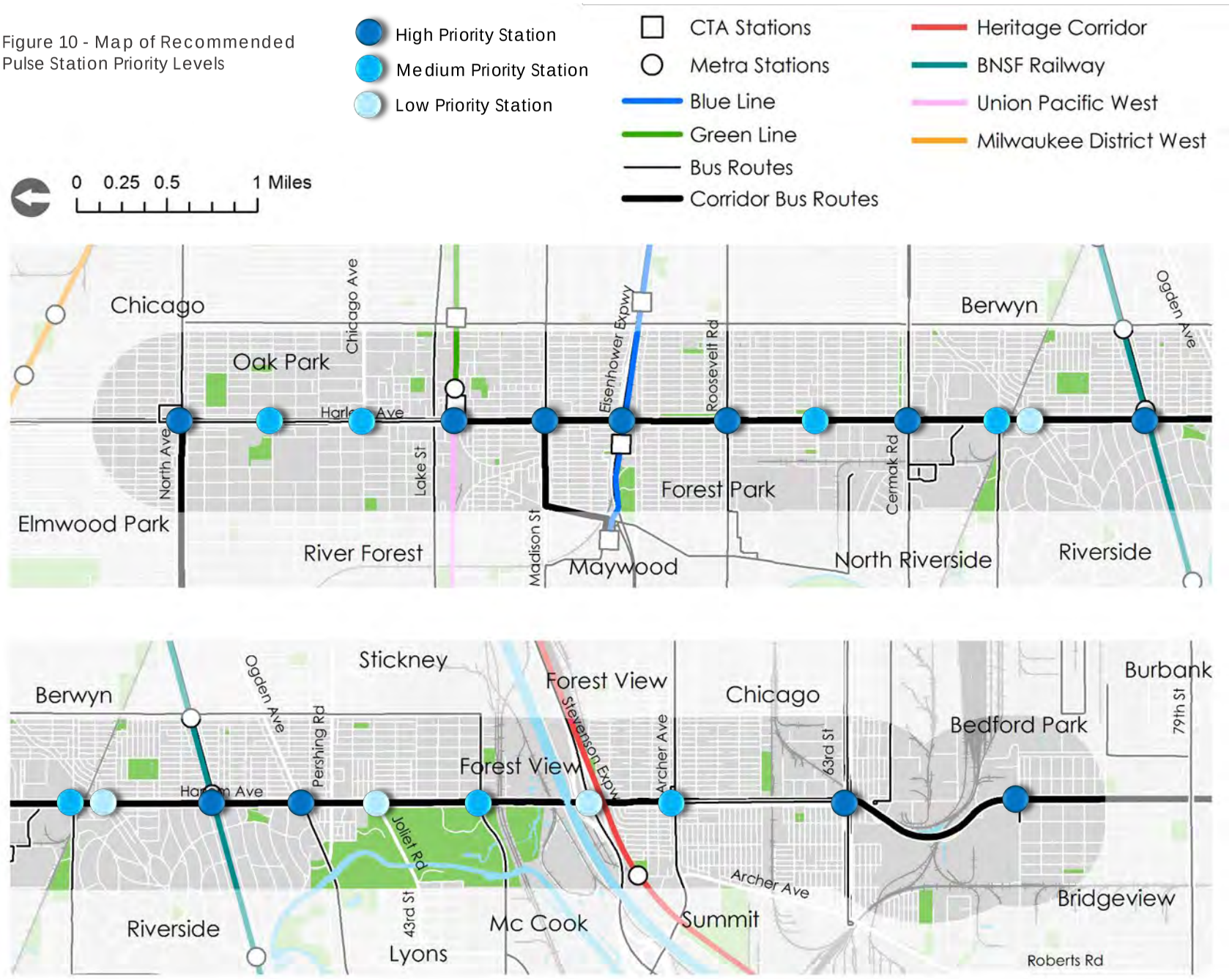
Ref. No.	StationName	Nearest Station (NB) (mi)	Nearest Station (SB) (mi)	Gap if Removed (mi)	E-W Service	E-W Pulse Service Planned
1	North	N/A	0.5	0.5	Pace/CTA	Long-Term
2	Division	0.5	0.5	1	No	No
3	Chicago	0.5	0.5	1	No	No
4	Circle/South	0.5	0.5	1	Pace	No
5	Madison	0.5	0.45	0.95	Pace	No
6	Eisenhower	0.45	0.6	1.05	Pace	No
7	Roosevelt	0.6	0.5	1.1	Pace	No
8	16th	0.5	0.5	1	No	No
9	Cermak	0.5	0.5	1	Pace/CTA	Near-Term
10	26th	0.5	0.15	0.65	Pace	No
11	Long Common/ Riverside	0.15	0.7	0.85	No	No
12	Harlem Ave. Metra	0.7	0.5	1.2	Pace	No
13	Ogden	0.5	0.4	0.9	Pace	No
14	41st	0.4	0.6	1	No	No
15	47th	0.6	0.65	1.25	Pace	No
16	Stevenson	0.65	0.5	1.15	Pace	No
17	Archer	0.5	1	1.5	Pace/CTA	No
18	63rd	1	1.15	2.15	Pace/CTA	No
19	71st	1.15	N/A	1.15	No	No

Finally, the quantitative analysis above was synthesized into a qualitative rating of each potential station's level of priority. The prioritization makes a subjective judgement about how a station's level of transit competitiveness raises its priority, the importance of avoiding long gaps between station, what community destinations are essential to serve, coordination with the east-west transit corridors, and other factors described above. The recommended station prioritization is listed in Table 6; all candidate stations are rated as "high," "medium," or "low" priority. A map illustrating the station prioritization is shown in Figure 10.

Table 6 – Recommended prioritization of each candidate station location, along with justification for each recommendation

Ref. No.	Station Name	Priority	Reasoning
1	North	High	Major east-west corridor - Scores in the moderate range on transit access and bikeability/walkability. Important to providing service to north corridor and making sure stops are spaced equitably. Serves existing Pace and CTA east-west routes and planned Pulse service.
2	Division	Medium	Does not score well, but is most accessible to universities.
3	Chicago	Medium	Scores reasonably well across all measures. Important to station spacing (especially if Division is not kept).
4	Circle/South	High	Scores high across all measures. Reasonably spaced with other stops.
5	Madison	High	Scores high across all measures. Reasonably spaced with other stops.
6	Eisenhower	High	Scores high on transit competitiveness. Important connection to CTA Blue Line
7	Roosevelt	High	Proximity to population and employment and high passenger activity. Important to station spacing (especially if 16th is removed). Serves existing Pace east-west routes.
8	16th	Medium	Scores comparably to Roosevelt but does not serve existing east-west transit or planned Pulse Service.
9	Cermak	High	Scores highly across all measures. Access to east-west routes and Planned Pulse service. Important to station spacing.
10	26th	Medium	Scores higher in transit competitiveness assessment, but lower population and employment proximity and lower passenger activity. Will be important to station spacing, especially if Long Common/ Riverside is not chosen.
11	Long Common	Low	Performs well across most measures, but too close to stop at 26th. Consider consolidation with 26th.
12	Harlem Ave. Metra	High	Higher scores in transit competitiveness assessment. Serves a large amount of population and employment and existing passenger activity. Important to station spacing.
13	Ogden	High	Higher scores in transit competitiveness assessment. Serves a large amount of population and employment and existing passenger activity. Important to station spacing.
14	41st	Low	Scores higher than 47th but is close to Ogden.
15	47th	Medium	Low scores in transit competitiveness assessment, but would create a significant service gap if not present.
16	Stevenson	Low	Low scores in transit competitiveness assessment. Station placement on freeway overpass is inaccessible to pedestrians. Could become a priority if a transfer station connecting existing or future Pace Express routes using bus-on-shoulder along I-55 to future Pulse Harlem service is determined to be feasible.
17	Archer	Medium	Low scores in transit competitiveness assessment but serves a large amount of population and employment and existing passenger activity. Offers important connections with Pace Route 330 and CTA Routes 62 and 62H. Will leave significant service gap if not present.
18	63rd	High	Low scores in transit competitiveness assessment but serves a large amount of population and employment and existing passenger activity. Offers important connections with CTA Routes 62H and 63W. Will leave major service gap if not present.
19	71st	High	Low scores in transit competitiveness assessment but Toyota Park is a critical destination and location is important to providing service to south corridor and making sure stops are spaced equitably.

Figure 10 - Map of Recommended Pulse Station Priority Levels



Transit Speed Improvements

Pace Pulse corridors use multiple strategies to optimize the speed of transit service. These include operating limited-stop service, the implementation of Transit Signal Priority (TSP), and other more targeted strategies. Before making recommendations to improve transit speeds, it is helpful to examine the current performance of buses along the corridor and understand where there are opportunities for improvement.

The following analysis will describe the average bus speeds at various points along the corridor and at different times of day. This is based upon real-world bus on-time performance data from Fall 2016. The data include actual arrival and departure times from Routes 307 and 386 at timepoints throughout the study area. Once the patterns of bus delays are understood, we can consider potential causes of delay and explore potential solutions.

Figures 11–14 visualize average bus speeds in the northbound and southbound directions during both AM and PM peak periods. These maps color code each segment of the corridor according to bus speeds, with red segments representing the slower areas. Note that the red brackets along each segment indicate the average time between bus stops – it is the travel time divided by the number of bus stops. Several segments stand out as having underperforming bus speeds (defined as more than 10% below the average):

- Ogden to Cermak (Northbound during both peaks, Southbound in the PM)
- Lake to North (Southbound in the AM)
- Cermak to South (Northbound during both peaks, Southbound in the PM)
- South to Lake (Northbound in the PM, Southbound during both peaks)

Some of these underperforming locations may be a result of bus stops placed too closely together. Reviewing the stop spacing in different parts of the corridor suggests that the segments from Ogden to Cermak and Lake to North have an above-average concentration of bus stops – this likely contributed to reduced bus speeds. However, we should note that in March 2018 Pace implemented service changes to convert bus service in this corridor to serving Posted Stops Only. This reduced the number of bus stops, and likely improved bus speeds.

The other two segments with underperforming bus speeds, from Cermak to South and from South to Lake, appear to be more related to factors such as traffic operational conditions. We recommend that these segments be examined further to identify targeted opportunities to improve transit speed.

Figure 11 – Average Bus Speeds headed Northbound during the AM Peak

Figure 12 – Average Bus Speeds headed Northbound during the PM Peak

Figure 13 – Average Bus Speeds headed Southbound during the AM Peak

Figure 14 – Average Bus Speeds headed Southbound during the PM Peak

Several interventions can be effective in improving bus speeds throughout the corridor. For example, Pulse service makes limited stops spaced approximately ½ mile apart to avoid the delays associated with frequent stopping. Pulse corridors are also equipped with Transit Signal Priority (TSP), which allows buses to request a shorter red light or extended green light when passing through traffic signals. The CMAP Smart Corridors Study endorses this approach along Harlem Avenue along with a range of other Intelligent Transportation Systems (ITS) strategies. When TSP is introduced, signal timings are also updated, which also improves the flow of traffic and buses. These strategies should produce considerable improvement in transit speed along the Central Harlem Avenue Corridor.

More targeted interventions to improve bus speeds should be explored at certain "hot spots" where transit objectives and design opportunities align. These strategies might include short bus-only lanes that provide a queue jump, as shown in Figure 15. This tool can work well to address transit delays at major intersections where there are significant right-turn queues. Another strategy to consider is a bus and right turn lane, as shown in Figure 16. This allows buses to proceed straight using a low-volume right turn lane, as long as a bus-only lane can be provided on the receiving side of the intersection.

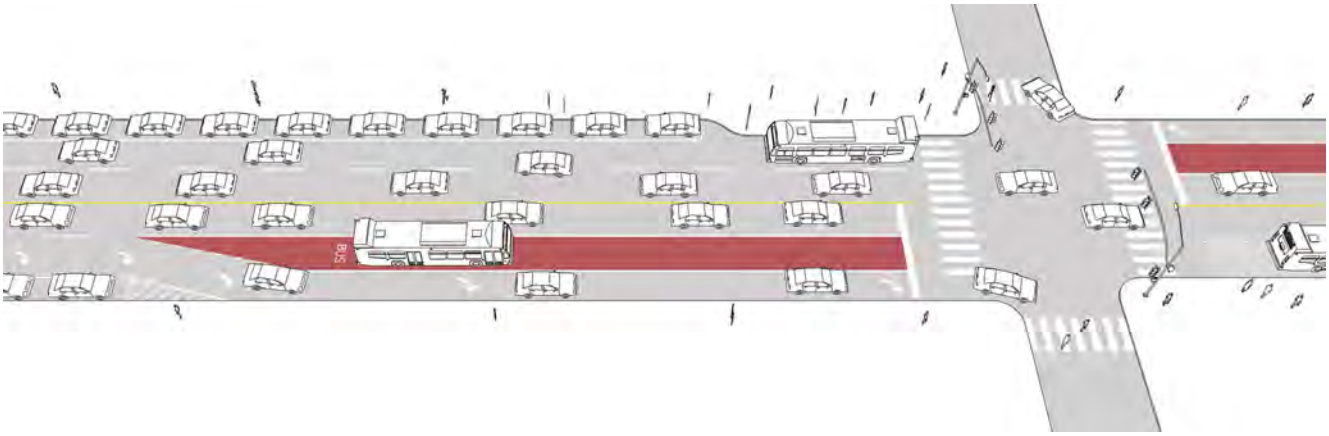


Figure 15 – Short transit lane to provide a queue jump. Note that applying this type of design would be subject to capacity analysis. Source: NACTO

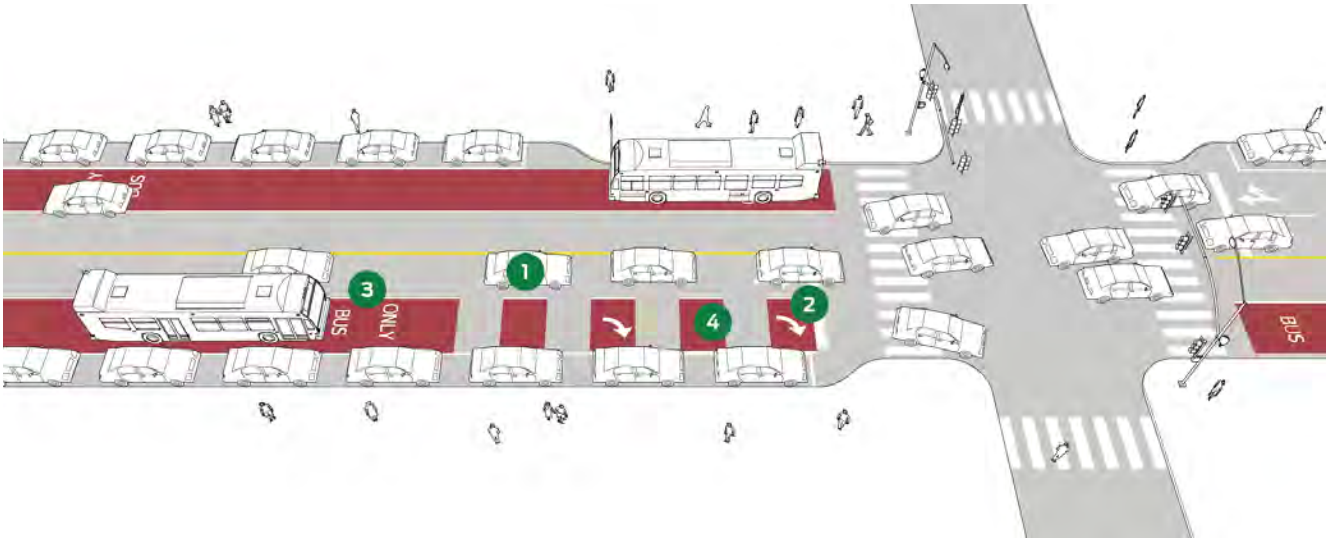


Figure 16 - Bus and right turn lane. Note that applying this type of design would be subject to capacity analysis. Source: NACTO

These sorts of "hot spot" transit speed improvements require detailed traffic engineering analysis to assess their viability within specific traffic patterns. This analysis may be worth pursuing at the following locations:

- Harlem and Ogden Avenue
- Harlem and 34th Street
- Harlem and Windsor Avenue/Stanley Avenue
- Harlem and 32nd Street
- Harlem and 26th Street
- Harlem and 25th Street
- Harlem and Entrance to Cermak Plaza
- Harlem and Cermak Avenue
- Harlem and Roosevelt Road
- Harlem and Lake Street
- Harlem and Ontario Street

Final Recommendations

All recommendations presented in the following section are preliminary concepts, and various requirements would have to be addressed before any improvements could proceed to implementation. While the recommendations were developed based on input from project stakeholders and the public, further discussions and agreements will be needed with local communities, public agencies such as IDOT, and local property owners to pursue changes. Coordination with private property owners will be crucial for any changes that would involve acquiring right-of-way or reconfiguring a property's roadway access. Coordinating with local municipalities will be crucial for any new pedestrian facilities, which require a local entity to provide maintenance and funding for the improvement.

IDOT also has specific engineering considerations that must be analyzed before any design changes can be approval. These would be examined during the preliminary engineering and design of a project. These considerations might include capacity analysis, queuing analysis, and autoturn analysis, depending on the type of improvement being considered. IDOT approval is also needed to establish Transit Signal Priority (TSP), which is subject to review by the Bureau of Traffic. Several locations along the project corridor are already subjects of ongoing or planned IDOT studies, and the recommendations of this project will be considered as part of those efforts.

Strategies for Expanding Access to Transit

Almost all public transit riders access transit service by walking to and from transit stops and stations. Thus, expanding access to transit must involve overcoming the barriers that discourage people from walking. The Existing Conditions Assessment identified issues such as areas that lack sidewalk, areas with no buffer between sidewalk and high-speed traffic, long distances between pedestrian crossing opportunities, intersections with high concentrations of pedestrian crashes, and intersection crossings that give pedestrians limited protection to cross six lanes or more of traffic.

Some of these challenges are inherent in the functioning of a major regional arterial and the needs of freight trucking. For example, trucks require certain turning radii that have the effect of lengthening pedestrian crossings. In other cases, though, pedestrian conditions can be improved without diminishing the corridor's performance for other users.

This section will introduce a 'toolbox' of such strategies that have been selected based on a review of best practices from organizations such as the Illinois Department of Transportation (IDOT), the Federal Highway Administration (FHWA), the National Association of City Transportation Officials (NACTO), and the Chicago Metropolitan Agency for Planning (CMAP). Most of these tools are in common use, but some applications may be appropriate for evaluation in the form of a pilot. A temporary or interim implementation can be a low-risk approach to test new design concepts before fully committing to a change.

The following tools can improve access to transit while balancing the needs of all users.

Tool 1: Use high visibility Continental-style crosswalks at all signalized intersections and select unsignalized locations.

Crosswalks are an important tool to warn drivers of a pedestrian crossing point. They also help pedestrians find an appropriate location to cross. Different types of crosswalks have been used over the years, ranging from two parallel painted lines to colored paver materials. In 2010, FHWA evaluated the performance of different crosswalks at the key task of alerting drivers and prompting yielding behavior.[1] Their result showed that a series of alternating bars (also known as the Continental style) performs far better than a pair of parallel transverse lines. This type of crosswalk is thus recommended as the best practice to

Figure 17 – Example of a high visibility continental crosswalk at night. Source: Dan Burden, CMAP Complete Streets Toolkit

[1] FHWA Crosswalk Marking Field Visibility Study, 2010.

enhance visibility and ease pedestrian crossings, as illustrated in Figure 17.

The ITE Pedestrian Safety Toolbox estimates that use of high visibility crosswalks is associated with a crash reduction factor of 18%. IDOT has already made this type of high-visibility crosswalk standard practice for new crosswalk facilities in the district containing Harlem Avenue. As of this writing, many locations along the Central Harlem Avenue Corridor still have outdated crosswalks whose designs are less effective at drawing the attention of motorists.

Tool 2: Use enhanced pedestrian signals with countdown indication, leading pedestrian intervals, and accessible features at all signalized intersections.

Pedestrian signals are important at signalized intersections so that people on foot know when it is their turn to cross. Countdown signals add to this by showing pedestrians the amount of time remaining to safely cross the street. This countdown is especially relevant for intersections with wide crossing distances. The Crash Modification Factor (CMF) Clearinghouse estimates that the use of pedestrian countdown signals is associated with a crash reduction factor of 25%. The Pace Transit Supportive Guidelines recommend that pedestrian crossing signals be installed at every signalized intersection, and promotes the use of countdown signals.

IDOT has already made pedestrian countdown signals standard practice in the district containing Harlem Avenue. Unfortunately, it takes significant time before existing traffic signals are updated. None of the traffic signals along Central Harlem Avenue Corridor yet have countdown signals, and six traffic signals along the corridor have no pedestrian signal at all (Cermak, Pershing, 41st, 46th/47th, Forest View Terminal, and 65th.)

Accessible pedestrian signals supplement the visual signal with audible or other messages to make crossing information accessible for pedestrians with visual disabilities.[2] IDOT currently allows Accessible Pedestrian Signals only if a need for this treatment can be demonstrated based on visually impaired pedestrians living near the crossing.[3] In the interest of inclusivity, it is recommended that the use of accessible pedestrian signals be expanded throughout the Central Harlem Avenue corridor while ensuring that IDOT policy is fully applied.

Finally, pedestrian signals should offer a leading pedestrian interval (LPI) that provides pedestrians with a few seconds of lead time prior to the onset of the matching vehicle phase.[4] This small head start allows pedestrians to begin crossing and to make their intentions clear before vehicles start to cross. It is especially relevant where vehicle turning movements are high. FHWA considers the leading pedestrian interval a “Proven

Figure 18 - Countdown Signals and Accessible Pedestrian Signals. Source: IDOT Bicycle and Pedestrian Toolbox and MNDOT

[2] CMAP Complete Streets Toolkit
[3] IDOT Bicycle and Pedestrian Toolbox
[4] CMAP Complete Streets Toolkit

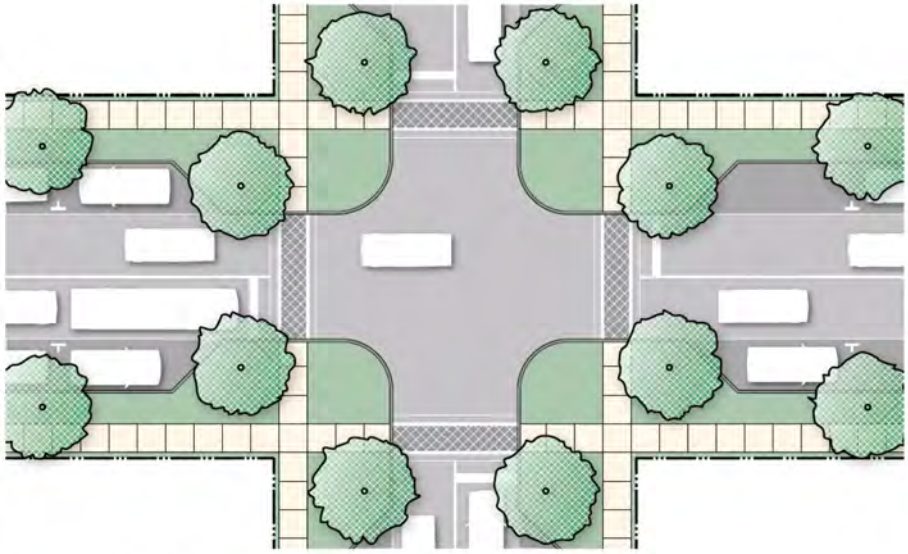
Safety Countermeasure" and notes that it is associated with a 60% reduction in pedestrian-vehicle crashes at intersections.[5]

Tool 3: Create curb extensions to shorten pedestrian crossing distances.

Pedestrian accessibility is enhanced whenever the effort needed to cross an intersection is lowered. Curb extensions, also known as bumpouts, bulbouts, or neckdowns, directly reduce the distance needed to cross a street by extending the curb of the sidewalk into the street. Typically this is used on streets with a parking lane, and the extension will use the same width used for the parking. An example from the Pace Transit Supportive Guidelines is shown to the right.

In addition to reducing pedestrian crossing distances, curb extensions have the safety benefit of making pedestrians more visible to drivers.[6] They also prevent cars from parking in locations that would obscure the crosswalk.[7] On an SRA such as Harlem Avenue, it is important that any potential curb extensions maintain proper turning movements and traffic flow for cars and trucks.

Curb extensions are typically designed with the aim of helping pedestrians cross a street, but they can also become excellent places for bus stops. When this is desired, the "bus bulb" should be sized appropriately so that both doors of the bus can access the curb. Most of the curb extensions recommended in this document do not align with bus stops, but in the few cases where curb extensions align with a potential stop, the design should take care to accommodate buses.



Intersection Bulbout

Figure 19 – Illustration of curb extensions from the Pace Transit Supportive Guidelines

[5] FHWA Proven Safety Countermeasures, 2017
[6] NACTO Urban Street Design Guide, 2013.
[7] FHWA Pedestrian Facilities Users Guide, 2002.

The IDOT Bureau of Local Roads and Streets Manual notes that bus bulbs are most effective in the following conditions:

- The street provides arterial service with lower speeds (e.g., posted speeds of 35 mph or less).
- Bus volumes are 10 or less during the peak hour.
- Passenger volumes do not exceed 20 boardings an hour.
- The average bus dwell time is generally less than 30 seconds per stop.
- During peak hour traffic, there are less than 250 vehicles per hour in the travel lane.
- Sight distances allow traffic to stop safely behind the bus.

Figure 20 – Aerial view showing two example curb extensions, one of which includes a bus stop. Source: Nearmap, 2017.

Tool 4: Create pedestrian refuge islands.

A powerful way to reduce the difficulty of crossing an intersection on foot is to provide a refuge space that splits the crossing into shorter segments. This allows pedestrians to focus on a single crossing at a time, and it also makes pedestrians more visible to motorists.[8] The CMF Clearinghouse estimates that the use of pedestrian refuge islands is associated with a crash reduction factor of 56%. On a corridor like Harlem Avenue where some crosswalks exceed 100 ft, refuge islands that break up such crossings can enhance both accessibility and safety.

One type of pedestrian refuge island uses **space in the median** of a roadway. The crosswalk should "cut through" the raised median at street level, and should include a "nose" that extends beyond the crosswalk. The nose enhances protection from turning vehicles, and should be designed to avoid conflict with turns. Larger medians can be planted with landscaping to improve the aesthetics of a roadway.[9] [10]

Figure 21- Example of a crosswalk through a median refuge island. Note the nose that extends beyond the crosswalk. Source: NACTO Urban Street Design Guide, 2013.

Figure 22 – Example of a median refuge island at a signalized intersection. Source: visionzerostreets.org

[8] CMAP Complete Streets Toolkit
[9] NACTO Urban Street Design Guide
[10] FHWA Pedestrian Facilities Users Guide, 2002.

Another type of pedestrian refuge island uses **space that channelizes right turns with a "pork chop" shape**. The right-turn slip lane improves vehicular safety by controlling the path of turning vehicles, and the island adjacent to it improves protection for crossing pedestrians. Depending on what size vehicles are using a roadway, "pork chop" islands can accommodate relatively gradual right turns while also protecting pedestrians. [11] [12] However, when a roadway is designed for larger trucks and semis, "pork chop" islands become less desirable due to the wide path swept by the backs of these vehicles. Based on the Strategic Regional Arterial Design Concept Report, IDOT considers "pork chop" islands a good solution for SRA corridors.

In some cases the turning lanes are controlled with a stop or yield sign; that is certainly preferable for pedestrian users. As with median islands, pedestrian crosswalks normally "cut through" the island at street level. (Figure 23 shows an alternative design, in which the slip lane rises up to sidewalk level to control speeds.)

Figure 23 – Example of a 'pork chop' refuge island. Note the yield sign and the protective bollards. Source: Dan Burden, CMAP Complete Streets Toolkit

Refuge islands are most effective at protecting pedestrians when they use a raised curb. However, painted islands with plastic reboundable delineators can also guide drivers away from certain spaces and can serve as a low-cost way to pilot a pedestrian refuge concept. This design decision should be made on a case-by-case basis.

Both types of pedestrian refuge islands have modest drawbacks related to maintenance. Raised islands can collect debris and can be struck by snow plows. This can be mitigated through strategies to maximize the visibility of the islands with bollards and other markers.

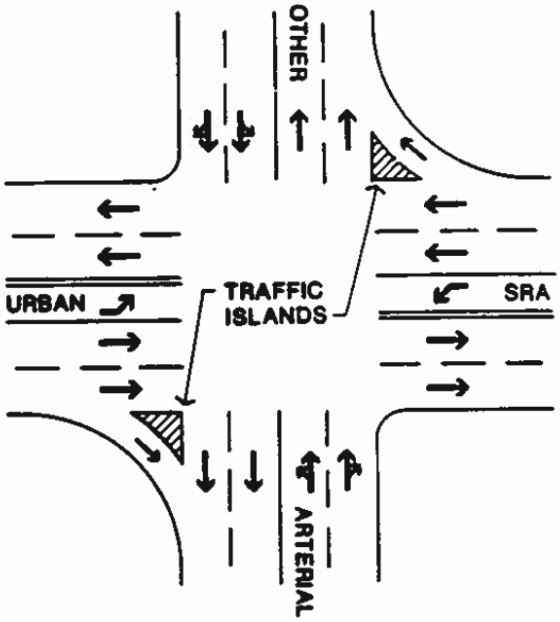


Figure 24 – 'Pork chop' refuge islands are supported in the IDOT Strategic Regional Arterial Design Concept Report.

[11] CMAP Complete Streets Toolkit

[12] FHWA Pedestrian Facilities Users Guide, 2002.

Tool 5: Consolidate closely-spaced driveways to reduce conflicts.

Accessing transit is more difficult when more points of conflict are encountered along the way. Driveways create a very common space for pedestrian/vehicle conflict. These points of conflict also have safety implications, as conflicting movements can lead to crashes for both pedestrians and vehicles. Figure 25 below shows how consolidating closely-spaced driveways reduces the number of conflict points. This process of consolidating excess driveways is part of strategy called access management.[13]

Any changes of this nature would require coordination with local property owners as part of the Project Definition and Environmental Review stages of the Corridor Development Process, as illustrated in Figures 1d–1f.

Before After

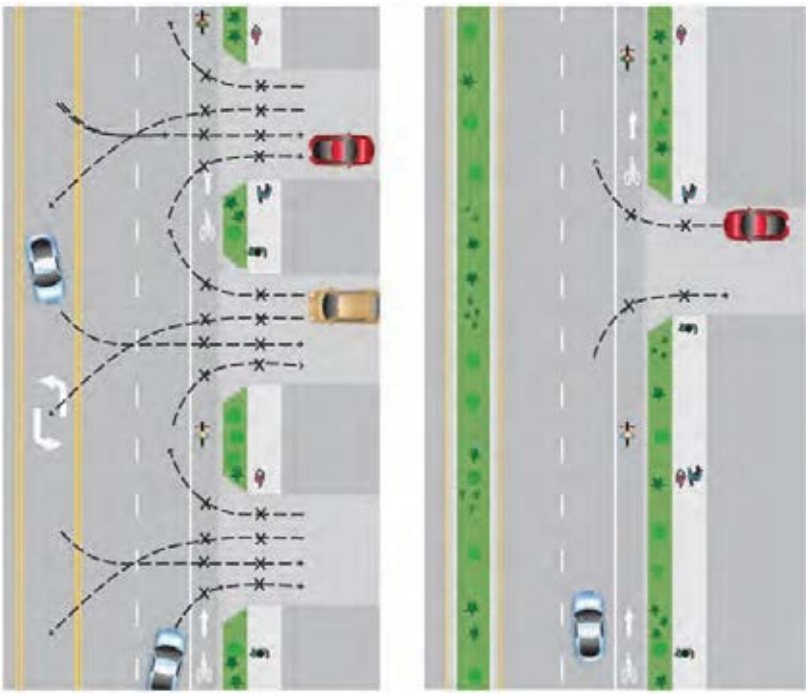


Figure 25 - Adding medians and consolidating driveways to manage access. Source: Michele Weisbart, Model Design Manual for Living Streets, 2011.

[13] FHWA Access Management in the Vicinity of Intersections, 2010.

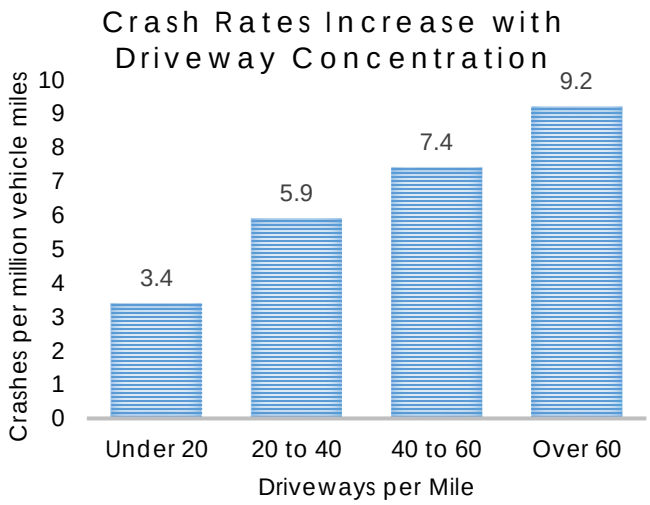


Figure 26 – Crash Rates Increase with Driveway Concentration.
Source: NCHRP Report 420 Impacts of Access Management Techniques.

Considerable evidence confirms that an excessive concentration of driveways is a true safety problem, and not merely an annoyance for pedestrians. The report "Impacts of Access Management Techniques" from the National Cooperative Highway Research Program shows a clear increase in crash rates as the number of driveways per mile increases. The IDOT Strategic Regional Arterial Design Concept Report addresses this by calling for a manageable spacing of access along Strategic Regional Arterials: 500 ft spacing, or approximately 11 driveways per mile. Very few areas of the Central Harlem Avenue Corridor achieve this standard.

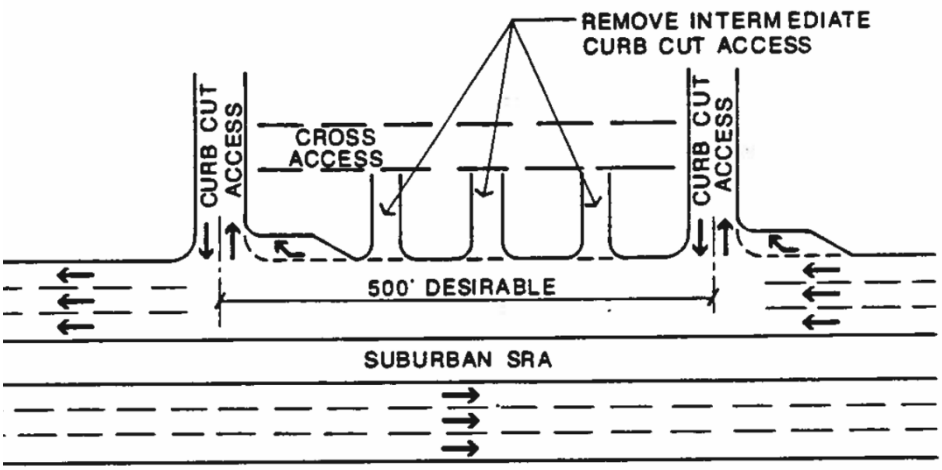


Figure 27 - IDOT Recommendation on Driveway Spacing for SRAs.
Source: IDOT Strategic Regional Arterial Design Concept Report.

The Pace Transit Supportive Guidelines recommend strategies to address this issue. First, providing development access via a secondary street is preferred over using curb cuts on a primary street such as Harlem Avenue. Another option is to make arrangements for neighboring properties to allow cross-flow between each other's parking facilities and use shared access points. Redundant driveways serving the same property should be avoided wherever possible.

Tool 6: Provide high-quality sidewalk where it is absent.

Sidewalks are a fundamental requirement of pedestrian accessibility. Illinois' 2007 Complete Streets policy requires consideration of pedestrian accommodations whenever planning roadways in urban areas. As of this writing, there are sections of Central Harlem Avenue that still lack pedestrian accommodations. Dirt paths have formed in areas where pedestrians regularly walk without sidewalks.

It is recommended that sidewalks be added in all stretches of the corridor where it is currently absent. The CMF Clearinghouse estimates that installing sidewalks where they are absent is associated with a crash reduction factor of 65%-89% for pedestrian and bicycle crashes – a dramatic safety benefit. Local municipalities can support sidewalks when reviewing development proposals, and by accepting maintenance responsibilities or ownership where needed.

Existing sidewalk facilities can also be improved in areas where pedestrians have no buffer from high-speed traffic. Pedestrian comfort should be improved through the addition of a small landscape buffer separating them from traffic. This strategy is most relevant in certain segments of the corridor where wide sidewalks run in front of large commercial parking lots that could be reconfigured by a single property owner.

Tool 7: Establish candidate sites and potentially reserve right-of-way for future Pulse stations for accessing regular and arterial bus rapid transit service, where appropriate.

Creating high-quality transit stations also improves access to transit in the corridor. Pulse stations can provide visible, comfortable places for customers to access service, and potentially serve as nodes for attracting transit-oriented development (TOD) and enhance the overall quality character of the surrounding street environment. In the prior section, the Transit Competitiveness and Station Location analysis evaluated the suitability of general station locations at key intersections. Within each of these general locations, however, there are various specific sites where a station might be placed.

The specific siting of Pulse stations must balance many needs. There must physically be space for the station. The station should be compatible with local land use and development plans. For transit operational speed and reliability, far-side stations optimize the use of Transit Signal Priority. Lastly, stations must be sited as close to signalized intersections as possible to maximize pedestrian accessibility to designated crossing points and improve safety.

Having established these seven tools for improving transit access, next we will apply them to recommend improvements in the vicinity of eighteen potential station areas. Table 7 below provides a summary of which tools will be used in which station areas.

Table 7 – Summary of transit access improvement tools used in different station areas

	Improvement Tools						
Station Areas	1. Use high visibility crosswalks	2. Use enhanced pedestrian signals	3. Create curb extensions	4. Create pedestrian refuge islands	5. Consolidate closely-spaced driveways	6. Provide high-quality sidewalk	7. Establish candidate Pulse stations
North	✓	✓		✓			✓
Division	✓	✓	✓		✓		✓
Chicago	✓	✓	✓		✓		✓
Circle/South	✓	✓					✓
Madison	✓	✓	✓		✓		✓
Eisenhower	✓	✓					✓
Roosevelt	✓	✓			✓		✓
16th	✓	✓		✓			✓
Cermak	✓	✓		✓		✓	✓
26th	✓	✓				✓	✓
Metra BNSF	✓	✓	✓				✓
Ogden	✓	✓	✓		✓		✓
41st	✓	✓	✓	✓	✓	✓	✓
47th	✓	✓	✓			✓	✓
Stevenson	✓	✓					✓
Archer	✓	✓		✓			✓
63rd	✓	✓		✓	✓	✓	✓
71st	✓	✓		✓		✓	✓

The remainder of this section will present the specific improvements recommended in each of the potential Pulse station areas. Each station area summary will describe the role of the potential station and include a map of the station area with the specific improvements indicated. Particular focus is given to the siting of Pulse stations; the station area maps will label candidate station sites and the accompanying text will describe the factors to be considered as strengths and weaknesses behind station siting decisions.

North Avenue Station Area

North Avenue is the northern limit of the Central Harlem Avenue study area. The station area is a Local Activity Center, with significant commercial development along the arterials. There are prominent plans to redevelop the former Sears site at the northeast corner of the intersection. While this location only exhibits moderate transit competitiveness, the intersection has substantial current ridership and it is important as a connection point to east-west transit service. Based on 2016 ridership, the station has 474 daily riders within 1/8 mile and 480 daily riders within 1/4 mile.[14]

The proposed access improvements in this area are illustrated on the following page. The recommendations seek to address excessive spacing of pedestrian crossing opportunities south of North Avenue, and to reduce pedestrian exposure at Harlem and North. These improvements, as well as the station location options, build upon the recommendations of the North Avenue Corridor Plan published by Pace and RTA in 2017.

The North Avenue intersection is the location where Pace expects two different potential Pulse services would diverge. One routing would proceed straight north-south through the intersection, as Route 307 does currently. Another routing would turn here from northbound Harlem onto westbound North, as Route 318 does currently.

In the northbound direction, the two routings would require separate station sites. The straight routing would stop at Site A, in front of the former Sears site. As of Spring 2018, the companies Tucker Development and Seritage Growth Properties are proposing to redevelop this site with housing and retail. Pace should coordinate with the developers and local officials to ensure that their plans accommodate a future Pulse station.

CTA Route 72 North currently turns around and lays over on Neva Avenue, adjacent to the former Sears Site. This kind of facility at this location is critical to CTA's operational needs and could provide a place for Pace vehicles to turn around as well, which may include future Pulse service on either Harlem or North Avenue. The developer, CTA, Pace and the Chicago Department of Planning and Development should continue to coordinate to ensure that bus turnaround and layover space is maintained at this location.

For northbound buses that turn at North Avenue, Site B will be the appropriate location to stop. This is an existing bus stop at the northwest corner of the intersection, in front of a Walgreens store. Site B has ample space for a full-sized Pulse station. Both of these northbound sites are far-side locations, which facilitate improved bus speed and reliability using Transit Signal Priority (TSP).

[14] These statistics include ridership from Pace Routes 307, 318, and 386.

In the southbound direction, both routings would serve the same location on Harlem Avenue south of North Avenue. Two candidate sites are identified. Site C would create a Pulse station in front of a Shell Circle K gas station. This site has limited space and would require consolidating a pair of closely-spaced gas station driveways. Site D has more space available and is an existing bus stop. Its adjacent land use is a multifamily residential building. Additional investigation is needed to determine which southbound site is most viable at this location, but either one will facilitate improved bus speed and reliability using Transit Signal Priority (TSP).

Due to the presence of CTA bus service, Pace should coordinate with CTA when selecting final Pulse station sites in this area.

Figure 28 - Proposed Access Improvements near Harlem Avenue and North Avenue

Station Candidate Sites

A NB Harlem at North | Far-side / NE corner (near Sears)
B WB North at Harlem | Far-side / NW curner (near Walgreens)
C SB Harlem at North | Far-side / SW corner (near Shell)
D SB Harlem at North | Far-side / SW corner (near residences)

Intersection Enhancements

- Use high-visibility crosswalks
- Enhance median pedestrian refuge islands

Investigate a Crosswalk at Greenfield (South Leg, Unsignalized)

- Include curb extension on east side of Harlem
- Addresses half-mile spacing of crossing opportunities
- Provides access to University sports fields

Division Street Station Area

The Division Street station area is an Urban Neighborhood, with a mix of large institutions and single-family housing. It would provide access to both Dominican University and Concordia University. While this location only exhibits moderate transit competitiveness, a station here would provide important connections to two nearby universities. Based on 2016 ridership, the station has 76 daily riders within 1/8 mile and 91 daily riders within 1/4 mile.[15]

The proposed access improvements in this area are illustrated on the following page. The recommendations seek to address excessive spacing of pedestrian crossing opportunities north of Division Street, and to reduce pedestrian exposure at Harlem and Division.

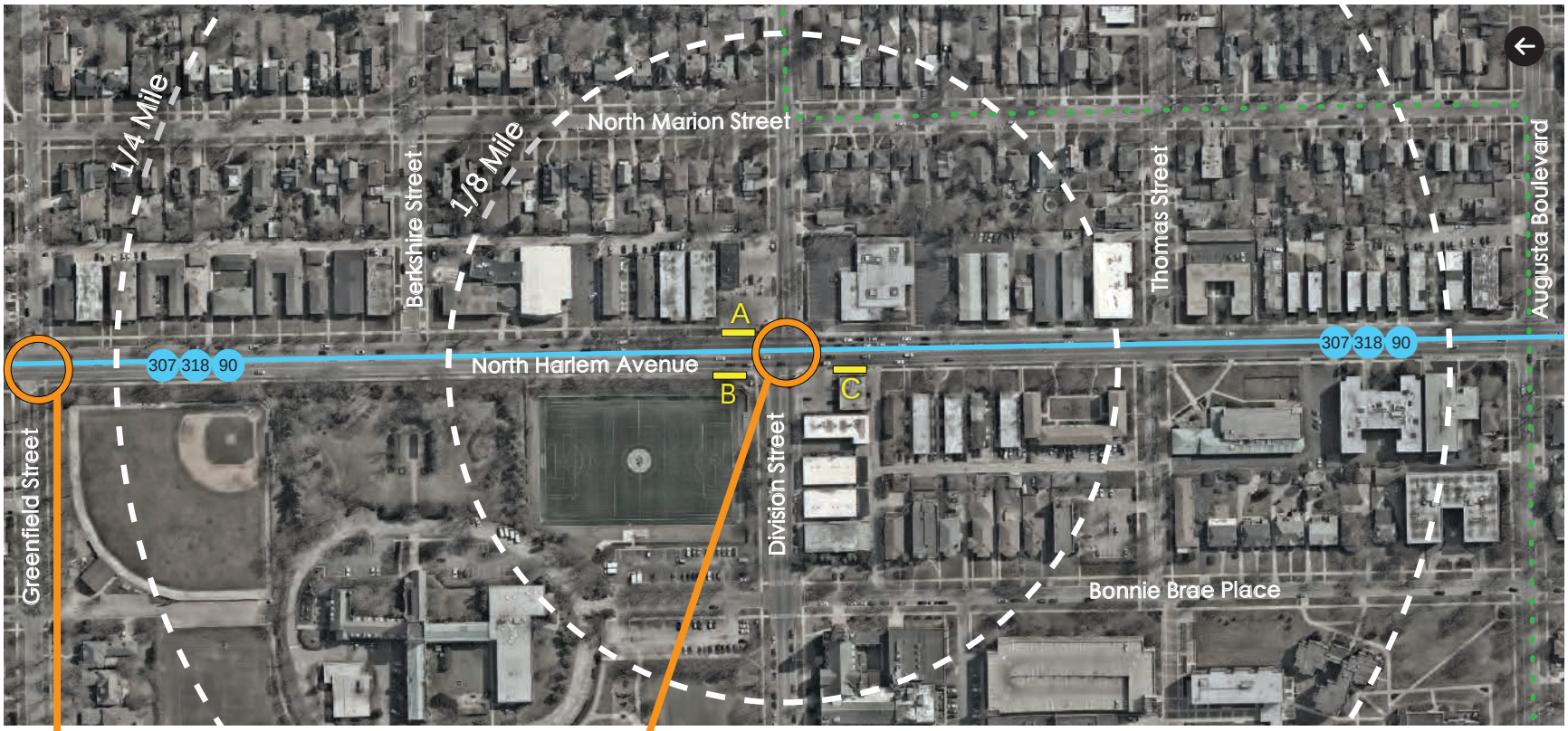
In the northbound direction, the preferred Pulse station location is Site A on the northeast corner of the intersection. This would be in front of Harlem & Division Auto Repairs. Creating a station here would require consolidating a pair of driveways, which is recommended given their close spacing and relatively low usage. This site for the northbound station would facilitate improved bus speed and reliability using TSP.

In the southbound direction, one near-side station site and one far-side station site are under consideration. Site B is the near-side option, in front of a sports field for Dominican University. While the University may be a willing partner, the location likely requires a retaining wall due to the slope of the land, and it would not leverage the benefits of TSP. Site C, the far-side option, would be along the side of a 7-Eleven store. This location would facilitate improved bus speed and reliability using TSP. Site C is recommended as the preferred southbound station site.

Due to the presence of CTA bus service, Pace should coordinate with CTA when selecting final Pulse station sites in this area.

[15] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 29 - Proposed Access Improvements near Harlem Avenue and Division Street



Investigate a Crosswalk at Greenfield (South Leg, Unsignalized)
- Include curb extension on east side of Harlem
- Addresses half-mile spacing of crossing opportunities
- Provides access to University sports fields

Intersection Enhancements
- Consolidate gas station driveways on northeast corner
- Curb extension on northwest corner
- Use high-visibility crosswalks

Station Candidate Sites

A NB Harlem at Division | Far-side / NE corner (near Harlem & Division Auto)

B SB Harlem at Division | Near-side / NW corner (near Dominican University)

C SB Harlem at Division | Far-side / SW corner (near 7-Eleven)

Chicago Avenue Station Area

The Chicago Avenue station area is an Urban Neighborhood with significant multifamily housing as well as auto-oriented commercial uses along Harlem. This station location received a high transit competitiveness score due to demographics and land use. Based on 2016 ridership, the station has 33 daily riders within 1/8 mile and 57 daily riders within 1/4 mile.[16]

Access improvements for the Chicago Avenue Station Area are proposed on the following page. The recommendations seek to reduce pedestrian exposure at Harlem and Chicago. The map also identifies two potential redevelopment sites at this intersection, which will be relevant when recommending Pulse station locations.

In the northbound direction, two near-side station sites are under consideration. Site A would place a station in front of the Denny's restaurant 220 ft south of the intersection. This site appears to have space for a Pulse station, but may entail acquiring a property easement from the local business owner. Alternatively, Site B would place the Pulse station closer to the intersection at the BP gas station. This would require consolidating two closely-spaced driveways to create space for a station. The Village of Oak Park suggested coordinating Pulse service plans with the owner of this site in case development changes are planned. Unfortunately, in the northbound direction no far-side sites are considered because of the very limited right-of-way.

In the southbound direction, one near-side station site and one far-side station site are under consideration. The near-side option is Site C in front of TCF Bank. This location appears to have ample space for a Pulse station, but it would not leverage the benefits of TSP. Additionally, there are plans to redevelop the bank site into an assisted living facility. A far-side option is possible at Site D in front of a Mobil gas station. This would require consolidating two closely-spaced driveways, a reconfiguration that the Village of River Forest is open to investigating further. Site D would have convenient access to many residential units, and would facilitate improved bus speed and reliability using TSP. Site D is recommended as the preferred southbound station site.

Due to the presence of CTA bus service, Pace should coordinate with CTA when selecting final Pulse station sites in this area.

[16] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 30 - Proposed Access Improvements near Harlem Avenue and Chicago Avenue

Intersection Enhancements

- Consolidate gas station driveways on southeast and southwest corners
- Curb extension on southeast corner
- Use high-visibility crosswalks

Station Candidate Sites

A NB Harlem at Chicago | Near-side / SE corner (near Denny's)
B NB Harlem at Chicago | Near-side / SE corner (near BP Gas)
C SB Harlem at Chicago | Near-side / NW corner (near TCF Bank)
D SB Harlem at Chicago | Far-side / SW corner (near Mobil Gas)

Circle Avenue / South Boulevard Station Area

The area surrounding the CTA and Metra transit stations in downtown Oak Park is a Major Activity Center with high-density commercial and residential development. This Pulse station site will provide multimodal connections including the Metra UP-West Line and the CTA Green Line. This station location exhibits excellent competitiveness based on walkability, demographics and land use. Currently, this site features the highest total level of boarding and alighting activity of any bus stop location within the study area. Ridership data from 2016 show 1,023 daily riders within 1/8 mile and 1,343 daily riders within 1/4 mile.[17]

The proposed access improvements in this area are illustrated on the following page. The primary recommendations are to create Pulse station locations. Global changes such as high-visibility crosswalks and pedestrian countdown signals should be incorporated as well.

Pulse station locations serving downtown Oak Park require different considerations depending on the routing of the service. If Pulse service terminates here, Pace would consider deviating buses from Harlem Avenue to serve the rail station entrances and layover before starting return trips. Curbside space for accommodating Pulse operations could potentially be accommodated either along North Boulevard (Site F) or South Boulevard (Site E), both at existing bus stops and rail station entrances. These two sites would bring riders the closest to the Metra station entrances. Both sites could be shared with other Pace and CTA bus staging. The exact routing and service design for accommodating operations to these sites would need to be determined by Pace at a later date.

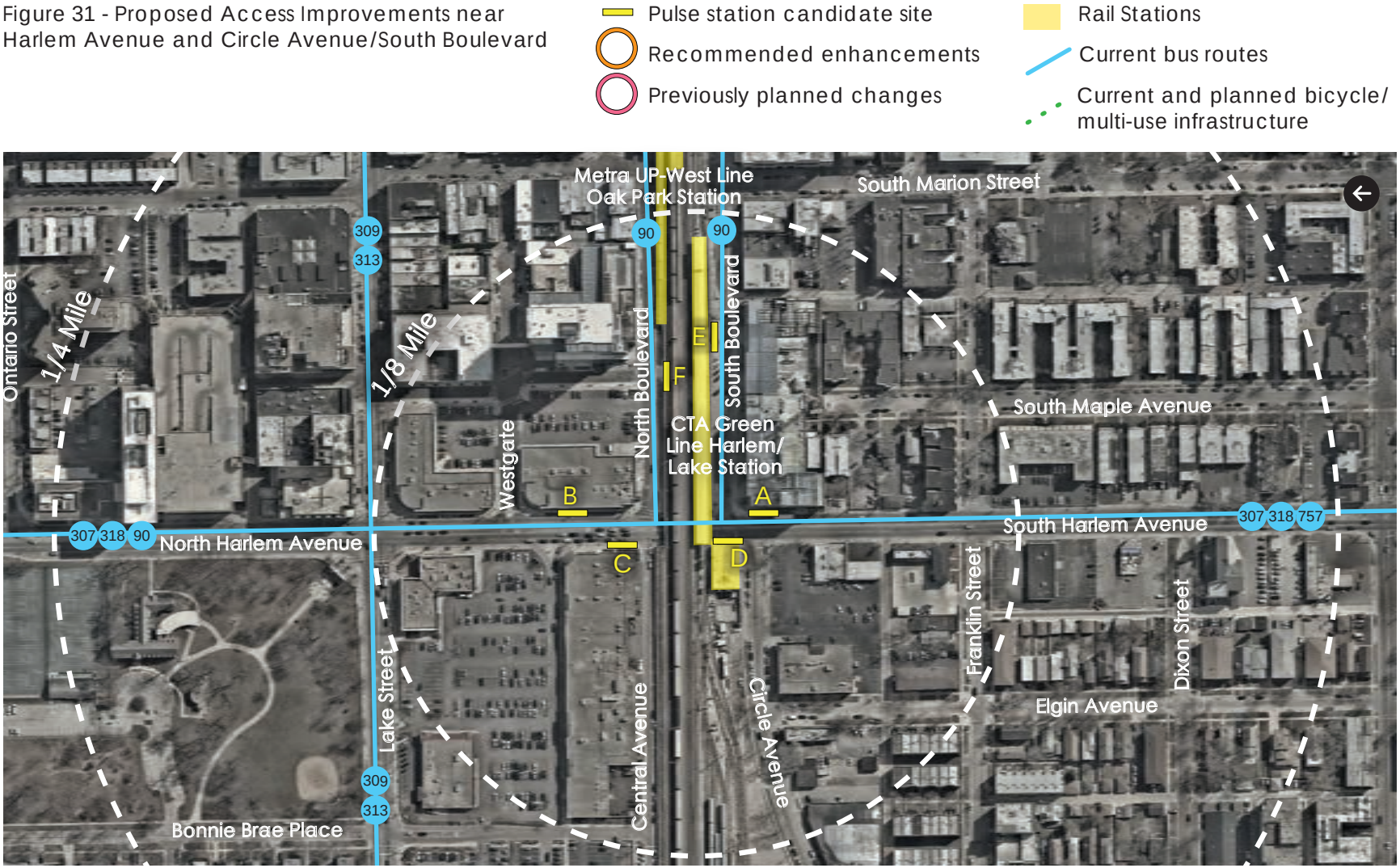
If Pulse stations are not sited at the terminal, two northbound station sites should be considered. Site A, near-side of South Boulevard, has historically been one of Pace's busiest bus stops. Its access to the CTA and Metra station entrance just east of Harlem Avenue is more convenient than the CTA-only entrance on the west side of Harlem Avenue. However, the sidewalk at this site is very narrow and a new mixed-use development (under construction as of this writing) now stands where the Pace bus stop and shelter were previously located. These conditions are not conducive for high volumes of boarding activity or ADA-accessibility. If Site A proves insufficient for a Pulse station, Site B may be considered as an alternative. Site B would use a wide commercial sidewalk just north of North Boulevard / Central Avenue next to an Old Navy store, and currently serves as a temporary stop location while construction is occurring at the South Boulevard stop. This location may provide TSP benefits, however access to the station entrances would be less convenient than Site A.

If Pulse stations are not sited at the terminal, two southbound station sites should be considered. Site C uses a wide commercial sidewalk just north of North Boulevard/Central Avenue, next to a Starbucks coffee shop. This location is quite close to the Metra and CTA stations, and has ample space for a Pulse station. A Pulse station could also be explored at Site D, which is directly in front of the main CTA station entrance north of Circle Avenue. Although Site D would provide convenient access to the CTA station, it has limited space for a Pulse station. There are also concerns about how Site D would impact auto traffic flow through the Harlem railroad underpass, given the lane constraints.

Due to the presence of CTA services, Pace should coordinate with CTA when selecting final Pulse station sites in this area.

[17] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 31 - Proposed Access Improvements near Harlem Avenue and Circle Avenue/South Boulevard



Station Candidate Sites

A NB Harlem at South | Near-side / SE corner
B NB Harlem at North | Far-side / NE corner
C SB Harlem at Central | Near-side / NW corner
D SB Harlem at Circle | Near-side / NW corner
E WB South at Station Entrance | Mid-block / North side
F EB North at Station Entrance | Mid-block / South side

Madison Street Station Area

The Madison Street station area is a Local Activity Center with neighborhood commercial development as well as the major institution of Rush Oak Park Hospital. This station location exhibits excellent competitiveness based on demographics, land use, and walkability. Based on 2016 ridership, the station has 150 daily riders within 1/8 mile and 213 daily riders within 1/4 mile.[18]

The proposed access improvements in this area are illustrated on the following page. The recommendations seek to reduce pedestrian exposure at Harlem and Madison and to establish appropriate Pulse station locations.

In the northbound direction, two candidate station sites are under consideration at Madison Street. Site A is located a short distance south of Madison at a former ComEd building. This site has plenty of space for a Pulse station and provides convenient access to Rush Oak Park Hospital. Site B is located north of the intersection at a Wendy's restaurant. This location would facilitate improved bus speed and reliability using TSP.

In the southbound direction, the proposed station location would be at Site C on the near side of the intersection. The adjacent property is currently vacant, and Village of Forest Park officials indicate that a new development is planned here. Pace should coordinate with the developers of this location to ensure that a future Pulse station can be accommodated. In the southbound direction no far-side sites are considered because of limited right-of-way.

[18] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 32 - Proposed Access Improvements near Harlem Avenue and Madison Street

Intersection Enhancements
- Consolidate extra driveway on northwest corner
- Curb extension on southeast corner
- Use high-visibility crosswalks

Station Candidate Sites
A NB Harlem at Madison | Near-side / SE corner (near ComEd)
B NB Harlem at Madison | Far-side / NE corner (near Wendy's)
C SB Harlem at Madison | Near-side / NW corner

CTA Blue Line Station Area

The CTA Blue Line station along the Eisenhower Expressway offers an important transit connection for future Pulse service. This station location exhibits excellent competitiveness based on transit access and walkability. According to 2016 ridership, the station has 310 daily riders within 1/8 mile and 340 daily riders within 1/4 mile.[19] The area has residential development patterns north of the Eisenhower Expressway and industrial development south of it.

Planning for transit connections at the Harlem Avenue CTA Blue Line Station is highly contingent upon the proposed reconstruction of the Eisenhower Expressway. IDOT's plans for the reconstruction include enhancements to the Harlem Avenue bridge over the expressway. The bridge deck would be widened, sidewalks would grow to be 15 feet wide, and a crosswalk would be added at the highway access ramp to allow pedestrians to cross Harlem near the Blue Line station entrance. These improvements would be quite beneficial for future Pulse service.

Because the funding of the Eisenhower Expressway project remains uncertain, candidate station locations are explored that may be appropriate in scenarios with or without IDOT's planned improvements. Under existing conditions, a northbound station would be most appropriate at Garfield Street where crosswalks across Harlem exist. Site A near-side of the intersection offers an opportunity for coordinate with a potential redevelopment site, but it is over 500 ft from the CTA station entrance. Site B would be located far-side, which is beneficial for speed and reliability, but still about 400 ft from the CTA station entrance.

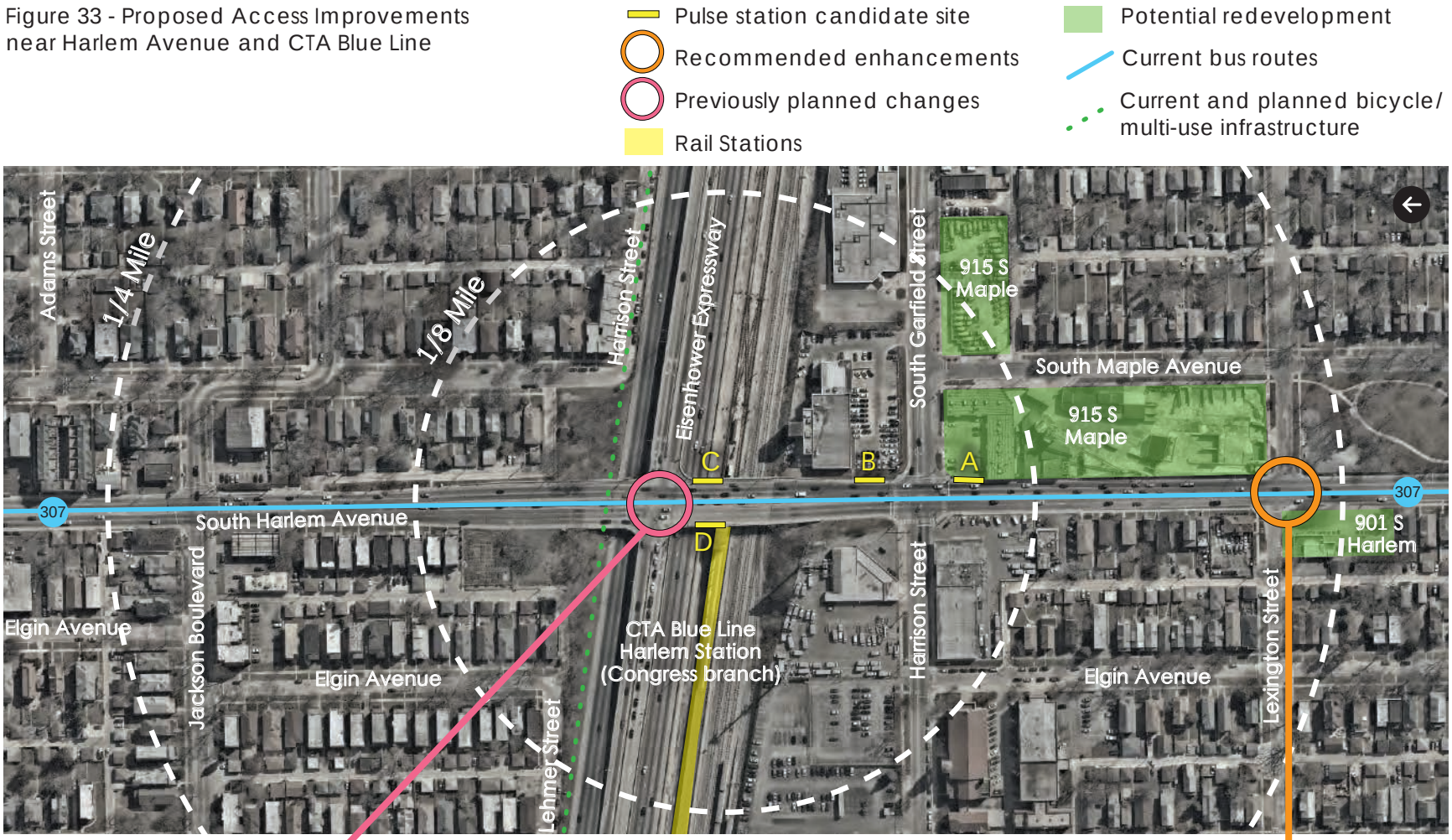
Under IDOT's planned improvements, Site C would be the most desirable northbound station location because it is only a 200 ft walk from the CTA station entrance. The new crosswalk at the Eisenhower ramp would make this location possible. The primary downside of Site C is the potential for a turn lane that would conflict with the station site. Further coordination between Pace and IDOT is recommended to determine the best arrangement for transit riders and motorists here.

In the southbound direction, a Pulse station would be placed at Site D, far-side of the Eisenhower Expressway ramp and directly adjacent to the CTA station entrance. This site provides access to the CTA Blue Line station regardless of the Eisenhower improvements.

Ultimately, in this station area, funding of the Eisenhower Expressway reconstruction will allow Pace, CTA, and IDOT to advance the vision for this station in conjunction with all other coordination do date.

[19] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 33 - Proposed Access Improvements near Harlem Avenue and CTA Blue Line



Planned Crosswalk (South Leg, Signalized)
- Use high-visibility crosswalk
- Dramaticaly improves access to Blue Line from northbound buses

Station Candidate Sites
- **A** NB Harlem at Garfield | Near-side / SE corner
- **B** NB Harlem at Garfield | Far-side / NE corner
- **C** NB Harlem at Eisenhower Ramp | Near-side / SE corner
- **D** SB Harlem at Eisenhower Ramp | Far-side / SW corner

Investigate a Crosswalk at Lexington (South Leg, Unsignalized)
- Addresses half-mile spacing of crossing opportunities
- Provides access to Maple Park

Roosevelt Road Station Area

The Roosevelt Road station area is an Urban Neighborhood with arterial commercial uses and mid-density residential development. This station location exhibits transit-supportive demographics and land use, though its overall competitiveness is considered low. Based on 2016 ridership, the station has 135 daily riders within 1/8 mile and 146 daily riders within 1/4 mile.[20]

The proposed access improvements in this area are illustrated on the following page. Recommendations seek to address the long distance between crossing opportunities north of Roosevelt, and to reduce pedestrian exposure at Harlem and Roosevelt where some crosswalks exceed 90 ft without refuge.

In the northbound direction, three potential station sites are under consideration. Site A, called 1227 Avenue Manor, is a mixed-use building located 220 ft south of Roosevelt Road. Its frontage has space to fit a Pulse station with minor impacts to planted areas or parking. Site B would place the station directly near-side of the intersection in front of a Shell gas station. This would require consolidating two closely-spaced driveways. Site C is located about 100 ft north of the intersection, alongside the Maple Park tennis courts. This far-side location would receive the benefits of TSP, but its space is quite constrained. It would likely require usage of the grassy space between the sidewalk and the tennis court and/or a reduced-size Pulse station. This would need to be coordinated with the Park District of Oak Park.

In the southbound direction, Site D is the preferred station option. This would be a far-side station placed in front of the strip mall 1215 South Harlem Plaza. Its far-side placement would leverage the benefits of TSP. Unfortunately, the station may impact some landscaping along the sidewalk. Near-side locations were avoided here due to a right turn lane.

[20] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 34 - Proposed Access Improvements near Harlem Avenue and Roosevelt Road

Investigate Crosswalks at Harvard and Filmore (Unsignalized)
- Addresses half-mile spacing of crossing opportunities
- Provides access to Maple Park

Intersection Enhancements
- Use high-visibility crosswalks
- Consolidate extra driveway on southeast corner

Station Candidate Sites
- **A** NB Harlem at Roosevelt | Near-side / SE corner
- **B** NB Harlem at Roosevelt | Near-side / SE corner (near Shell Gas)
- **C** NB Harlem at Roosevelt | Far-side / NE corner (near tennis court)
- **D** SB Harlem at Roosevelt | Far-side / SW corner (near strip mall)

16th Street Station Area

A Pulse station at 16th Street is rated as a low priority, but its competitiveness could grow with changes to local characteristics. Currently the station area includes a moderate-density Urban Neighborhood and the Waldheim Cemetery. Based on 2016 ridership, the station has 46 daily riders within 1/8 mile and 102 daily riders within 1/4 mile.[21]

The proposed access improvements in this area are illustrated on the following page. Recommendations seek to address the long distance between crossing opportunities north of 16th, and to reduce pedestrian exposure at Harlem and 16th by adding a median refuge.

Proposed station sites at 16th Street would be located on the far-side of the intersection in both directions. In the northbound direction, a station could be placed at Site A near a VFW hall that is planned for redevelopment. Pace should collaborate with the redevelopment planning to preserve space for a station. In the southbound direction, a far-side station would be located at Site B near Waldheim Cemetery. Both of these sites would leverage the speed and reliability benefits of Transit Signal Priority.

[21] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 35 - Proposed Access Improvements near Harlem Avenue and 16th Street

Station Candidate Sites

A NB Harlem at 16th | Far-side / NE corner (near VFW Hall)

B SB Harlem at 16th | Far-side / SW corner

Intersection Enhancements

- Use high-visibility crosswalks
- Install median pedestrian refuge island on south leg

Investigate a Crosswalk at 19th (North Leg, Unsignalized)

- Include raised median on north leg of intersection
- Addresses half-mile spacing of crossing opportunities
- Provides access to commercial destinations

Cermak Road Station Area

The Cermak Road station area is a Major Activity Center with the North Riverside Park Mall as its largest destination. Although the area's design is auto-oriented, with large amounts of surface parking, we found that the station location still exhibits strong competitiveness based on walkability, demographics, and land use. Bus stop activity at this location ranks second-highest among all other locations within the corridor study area. Based on 2016 ridership, the station has 483 daily riders within 1/8 mile and 543 daily riders within 1/4 mile.[22] This also would be the site of future connections with proposed Pulse Cermak service.

A range of access improvements are recommended for this area, as shown on the following page. Recommendations seek to address the long distance between crossing opportunities north of Cermak and to improve crosswalk conditions by adding a landscape buffer. We also recommend that Pace and IDOT coordinate regarding planned intersection and associated improvements at Harlem and Cermak so pedestrian access is not diminished with the removal of refuge islands.

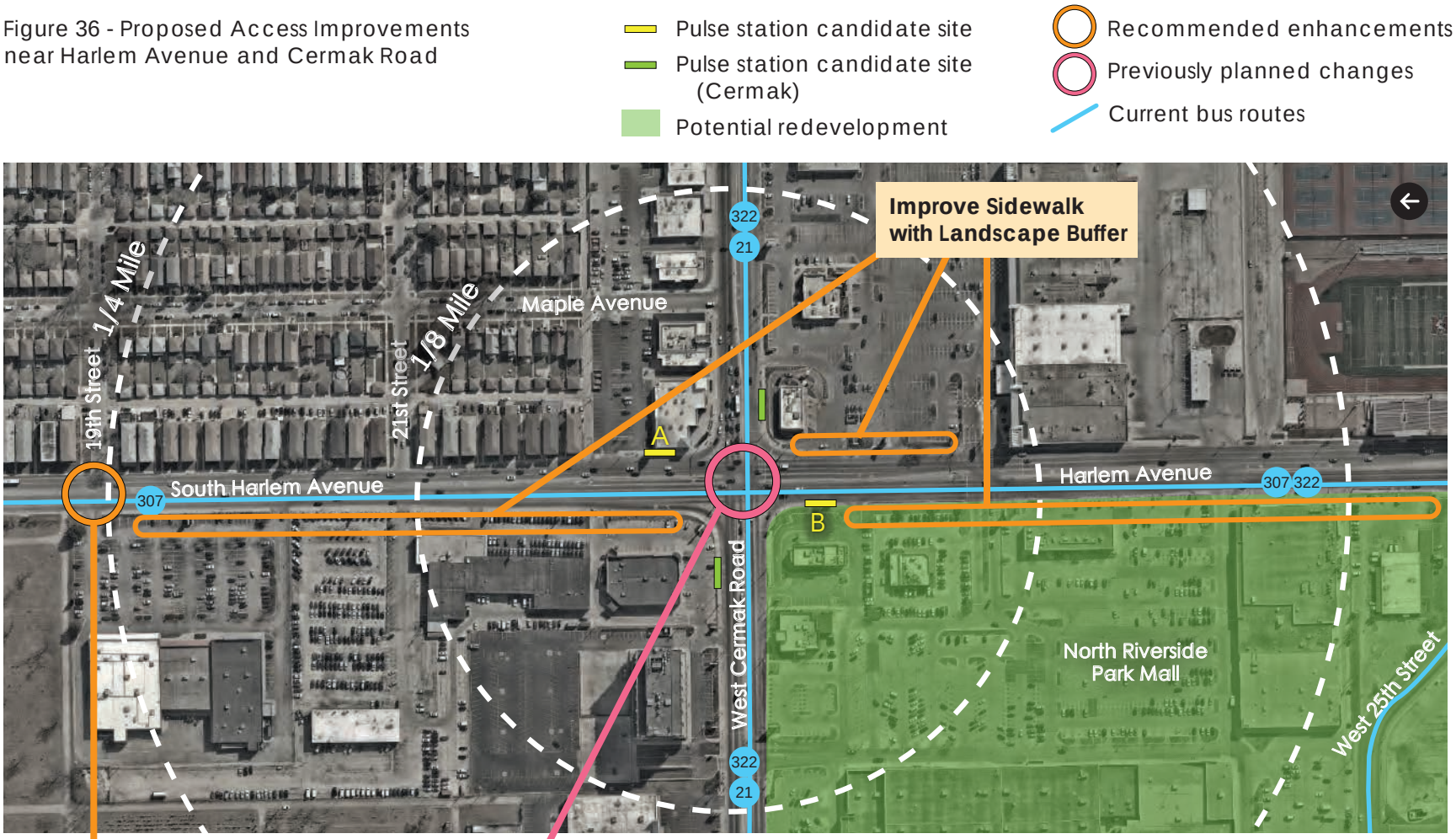
In the northbound direction, a Pulse station is proposed at Site A far-side of Cermak. This location, at the Vitamin Shoppe store, is an existing bus stop with ample space for a station. Its far-side placement also facilitates improved bus speed and reliability using TSP.

In the southbound direction, Site B is the preferred Pulse station choice. It is an existing bus stop at the southwest corner of the intersection, near a Chick-fil-A. It provides convenient access to the various commercial sites around North Riverside Park Mall. Its far-side placement also facilitates improved bus speed and reliability using TSP.

Additionally, Pace should consider moving the westbound bus stop on Cermak from near-side to far-side, to take advantage of TSP benefits and remove service from the existing right-turn lane. The far-side site, at a CVS store, could also better facilitate transfers among future Pulse Harlem and Cermak services. One disadvantage of the site is narrower sidewalks and ROW compared to the existing near-side stop at the Vitamin Shoppe, however easements may be possible since there is a parking lot and no buildings adjacent to the sidewalk. Additional investigation and coordination with IDOT and local business owners is recommended.

[22] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 36 - Proposed Access Improvements near Harlem Avenue and Cermak Road



Investigate a Crosswalk at 19th (North Leg, Unsignalized)

- Include raised median on north leg of intersection
- Addresses half-mile spacing of crossing opportunities
- Provides access to commercial destinations

Planned Intersection Changes

- Plans to remove pedestrian refuge islands could increase crossing time and distance for people on foot
- Planned bus only lane on north leg may benefit transit

Station Candidate Sites

A NB Harlem at Cermak | Far-side / NE corner (near Vitamin Shoppe)

B SB Harlem at Cermak | Far-side / SW corner (near Chick-fil-A)

26th Street Station Area

The 26th Street station area is an Urban Neighborhood at the boundary between auto-oriented commercial uses to the north and single-family residential neighborhoods to the south. This station location exhibits strong competitiveness based on walkability. A station here is also necessary to avoid a 1.2 mile gap between adjacent stations. Based on 2016 ridership, the station has 14 daily riders within 1/8 mile and 96 daily riders within 1/4 mile.[23]

The proposed access improvements in this area are illustrated on the following page. Recommendations seek to improve crosswalk conditions by adding a landscape buffer, in addition to global changes such as high-visibility crosswalks and pedestrian countdown signals.

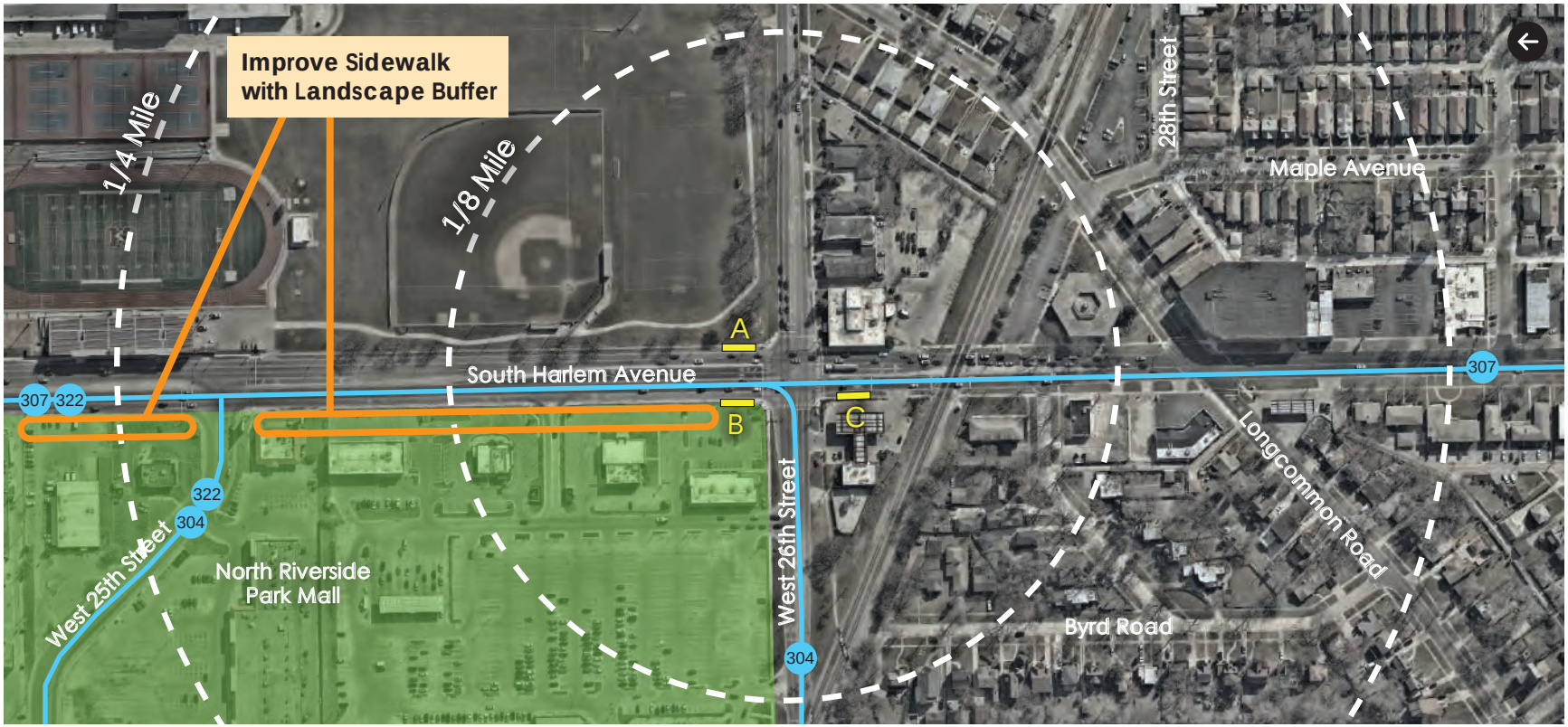
In the northbound direction, a Pulse station is proposed at Site A on the northeast corner of Harlem Avenue and 26th Street. This is adjacent to the Morton West High School sports fields. Its far-side placement also facilitates improved bus speed and reliability using TSP.

In the southbound direction, two station options are considered. Site B is the same location as the current near-side bus stop near a strip mall. It has space to create a Pulse station with some impacts to landscaping. Although this location is within a right turn lane, that operational irregularity may be acceptable. Site C would place the station far-side of the intersection near a 7-Eleven gas station. Although far-side stations generally produce speed and reliability benefits, in this case that may not be the case because of the presence an at-grade Canadian National railroad crossing 160 ft away. Backups on the south leg of the intersection may make Site C inaccessible at times, so in this case Site B is preferred.

[23] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 37 - Proposed Access Improvements near Harlem Avenue and 26th Street

Pulse station candidate site
Recommended enhancements
Previously planned changes
Potential redevelopment
Current bus routes
Current and planned bicycle/ multi-use infrastructure



Station Candidate Sites
A NB Harlem at 26th | Far-side / NE corner
B SB Harlem at 26th | Near-side / NW corner
C SB Harlem at 26th | Far-side / SW corner (near 7-Eleven)

Recommendations at All Traffic Signals
- Use high-visibility crosswalks
- Install accessible pedestrian signals with countdown indicator

Metra BNSF Line Station Area

The Metra BNSF Line Harlem Avenue Station area is a Local Activity Center featuring a walkable commercial node around the Metra station. This station location exhibits strong competitiveness based on transit access. According to 2016 ridership, the station has 119 daily riders within 1/8 mile and 146 daily riders within 1/4 mile.[24]

Numerous access improvements are proposed in this area, as the following page shows. The recommendations seek to address excessive spacing of pedestrian crossing opportunities, and to reduce pedestrian exposure where new crossings are created. On the subsequent page, a conceptual sketch suggests the possibility of creating a bus-only lane and curb extensions immediately adjacent to the railroad crossing.

The Metra BNSF Line is a particularly challenging area to select Pulse stations. In addition to analyzing customer access and transit speed considerations, it is important to evaluate railroad delay impacts as well as customer safety when accessing the railroad at grade level. About two-thirds of riders accessing the Metra station in the morning are coming from north of the station, and one-third from the south. In the morning, inbound Metra BNSF Line trains depart from the south side of the station. Metra thus prefers Pulse stations on the south side of the tracks to avoid safety issues from inbound commuters rushing to cross the tracks.

In the northbound direction, stations are considered on both sides of the BNSF tracks. Site A would be located near-side of Windsor Avenue alongside a small restaurant. While this location would provide excellent access to inbound trains in the morning, it would require the significant change of closing down an alley that the station would block. Site B would be located far-side of Stanley Avenue in front of Connie's Restaurant. This location would minimize railroad delays, but impacts on the business require discussion. Site C would be located further north at a medical office just north of Burlington Street. While this location likely minimizes delays from railroad and signals, it is over 340 ft from the Metra station, which is very inconvenient.

In the southbound direction, three sites are considered as well. Site D would place a Pulse station in front of the Bank of America just north of Burlington Street. As with Site C, this is quite far from the Metra station. Site E would use the sidewalk just south of Burlington Street for a station. This site might allow buses to be delayed by the railroad, though customers could still alight when a train is arriving. This situation could raise safety concerns if riders attempting to catch an inbound train try to run across the tracks. Site F would place a station next to Texor Petroleum just north of Quincy Street. This location would provide direct access to inbound trains without customers crossing the tracks. It would also minimize bus delays due to the railroad, though some customers might have to wait longer to alight.

[24] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 38 - Proposed Access Improvements near Harlem Avenue and Metra BNSF Line

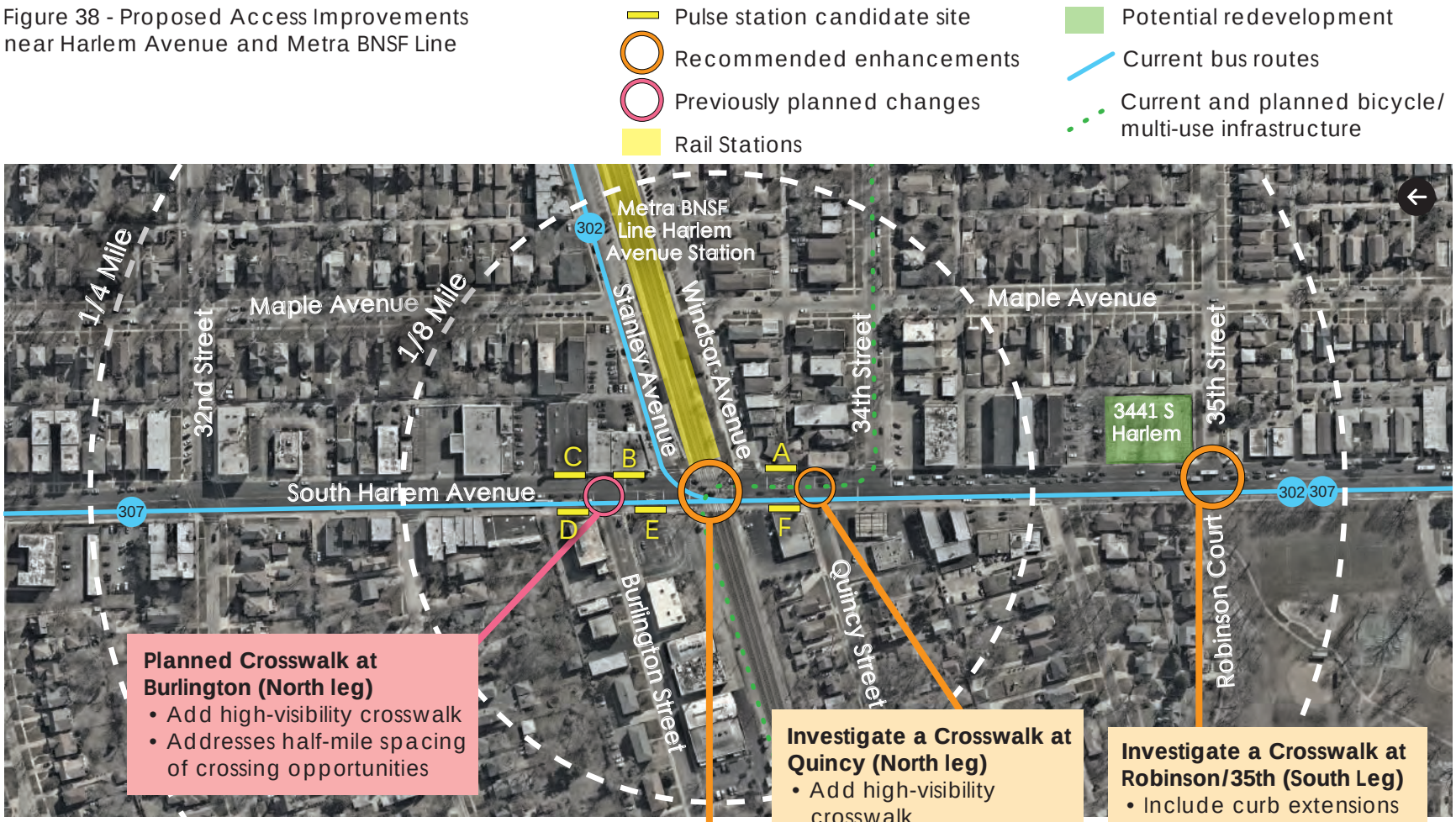
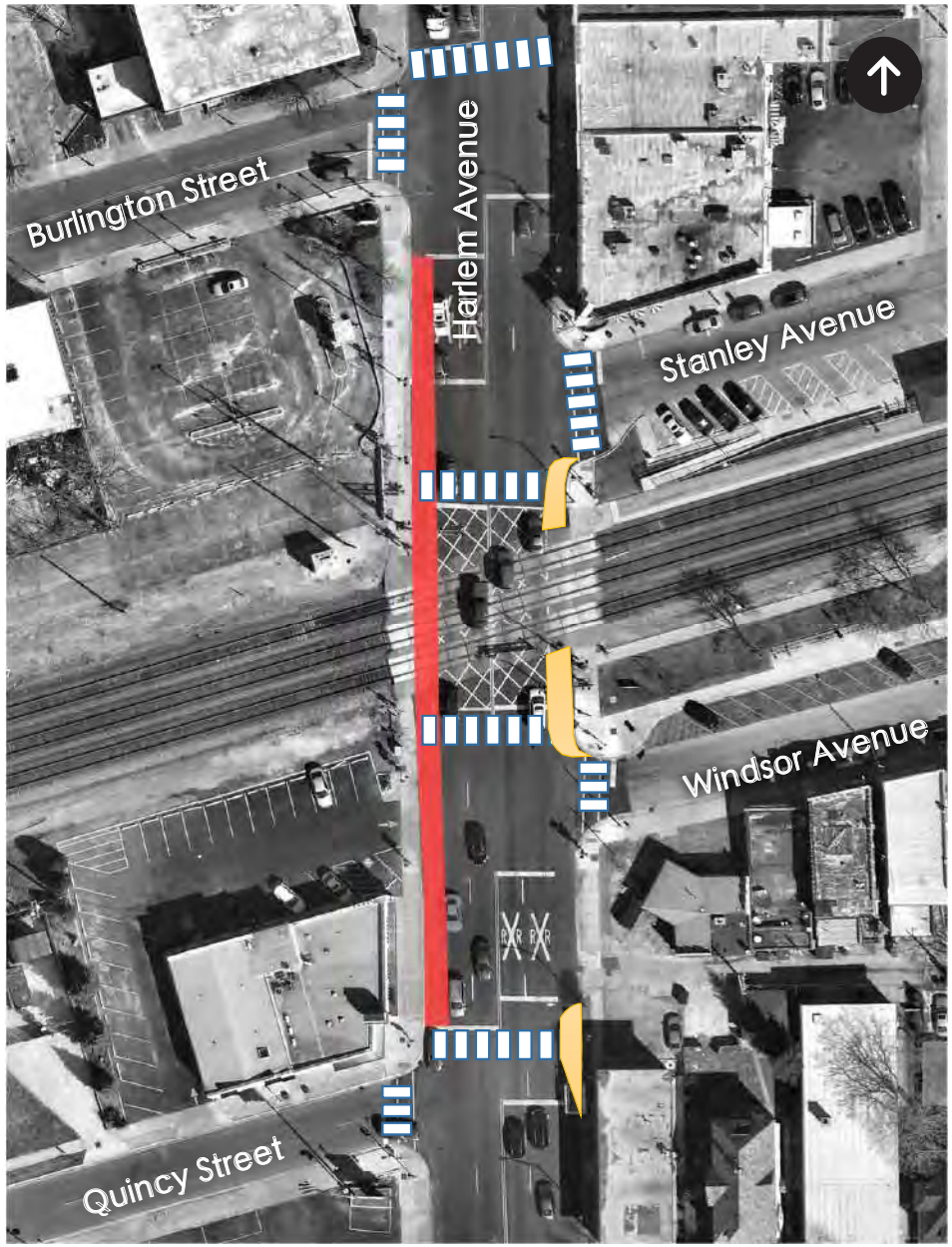


Figure 39 - Conceptual Intersection Improvements at Metra BNSF Line



Ogden Avenue Station Area

The Ogden Avenue station area is an Urban Neighborhood with arterial commercial uses and moderate-density housing. Significant redevelopment potential exists here to redirect the area's land use. This station location exhibits good competitiveness based on walkability. Based on 2016 ridership, the station has 171 daily riders within 1/8 mile and 250 daily riders within 1/4 mile.[25]

The proposed access improvements in this area are illustrated on the following page. The recommendations seek to address lengthy spacing of pedestrian crossing opportunities north of Ogden, and to reduce pedestrian exposure at Harlem/Ogden and Harlem/Pershing.

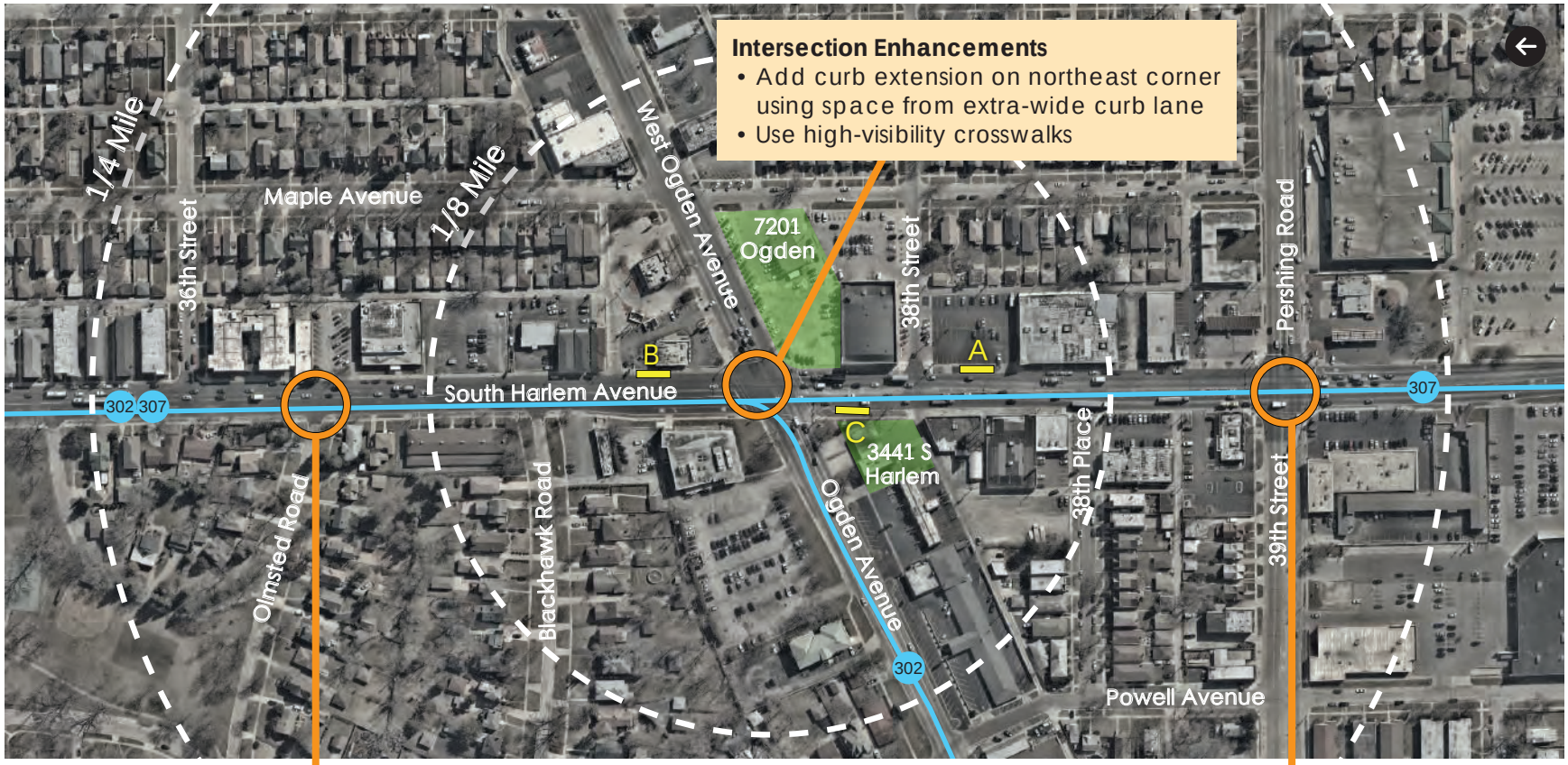
In the northbound direction, a Pulse station could be located near-side or far-side of Ogden Avenue. Site A is a near-side option adjacent to Berwyn Fruit & Vegetable. Here there is plenty of space for a station, but the distance from Ogden is fairly long at approximately 300 ft. Site B is a far-side option north of Ogden at a White Castle restaurant. It is an existing bus stop in an extra-wide curb lane. It also would leverage the benefits of Transit Signal Priority. For these reasons, Site B is preferred for a northbound station.

In the southbound direction, a Pulse station is recommended at Site C. This is a far-side stop on the southwest corner of the intersection. The site would use an extra-wide curb lane adjacent to a vacant bank site that may be considered for redevelopment. At the intersection there is a short curb extension reducing the lane width, and it may make sense to extend this if a Pulse station is created, so that buses do not need to merge back into traffic. This far-side station site also would experience the speed and reliability benefits related to Transit Signal Priority.

[25] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 40 - Proposed Access Improvements near Harlem Avenue and Ogden Avenue

Pulse station candidate site
Recommended enhancements
Previously planned changes
Potential redevelopment
Current bus routes
Current and planned bicycle/ multi-use infrastructure



Investigate a Crosswalk at Olmsted (North Leg, Unsignalized)
- Include curb extensions on both sides of Harlem
- Addresses half-mile spacing of crossing opportunities
- Provides access to Harrington Park

Station Candidate Sites
A NB Harlem at Ogden | Near-side / SE corner (near Berwyn Fruit & Vegetables)
B NB Harlem at Ogden | Far-side / NE corner (near White Castle)
C SB Harlem at Ogden | Far-side / SW corner

Intersection Enhancements
- Consolidate driveways on northeast and southeast corners
- Add curb extension on northeast corner
- Use high-visibility crosswalks

41st Street Station Area

While a Pulse station at 41st Street is rated as a low priority, its competitiveness could grow with changes to local characteristics. The key benefits of this station would be station spacing (filling a one mile gap) and coverage of current riders. Based on 2016 ridership, the station has 36 daily riders within 1/8 mile and 62 daily riders within 1/4 mile.[26] Currently the area near Harlem and 41st consists of a forest preserve and modest-density Urban Neighborhood.

The map on the following page illustrates transit access improvements that would be necessary for this station to be prioritized. Most importantly, the recommendations seek to accommodate pedestrian on the west side of Harlem along the Ottawa Trail Woods, including marked crosswalks at Harlem and Joliet/41st.

If a Pulse station does proceed at 41st Street, the following specific station sites are recommended. In the northbound direction, a station could be placed at Site A near La Ola Del Mar restaurant, which is planned for redevelopment. Pace should collaborate with the redevelopment planning to preserve space for a station. In the southbound direction, a far-side station would be located at Site B near Ottawa Trail Woods. Site B would achieve the speed and reliability benefits of Transit Signal Priority.

[26] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 41 - Proposed Access Improvements near Harlem Avenue and 41st Street/Joliet Road

Intersection Enhancements
- Consolidate driveways on northeast and southeast corners
- Add curb extension on northeast corner
- Use high-visibility crosswalks

Intersection Enhancements
- Add high-visibility crosswalks
- Create pedestrian refuge island on southwest corner

Station Candidate Sites
A NB Harlem at 41st | Near-side / SE corner (near La Ola Del Mar)
B SB Harlem at Joliet | Far-side / SW corner

46th/47th Street Station Area

The 46th/47th Street station area is a Low Density Neighborhood adjacent to the Ottawa Trail Woods. While the Ottawa Trail Woods is an important regional amenity, it generates very little ridership on public transit and it can create a barrier for local travel. A station here is necessary to avoid a 1.75 mile gap between adjacent stations. Additionally, this station location exhibits strong competitiveness based on walkability. Ridership data from 2016 show 20 daily riders within 1/8 mile and 35 daily riders within 1/4 mile.[27]

The proposed access improvements in this area are illustrated on the following page. The recommendations seek to accommodate pedestrian on the west side of Harlem along the Ottawa Trail Woods, and to create marked crosswalks at Harlem/44th and Harlem/46th/47th.

It should be noted that the I&M Canal Trail Extension Feasibility Study is considering the possibility of a regional bikeway connection that may run along the west side of Harlem Avenue south of 47th Street. To facilitate this connection, local authorities should evaluate the feasibility of widening the sidewalk south of 47th Street to meet standards as a shared-use path. The Canadian National & Illinois Railroad viaduct constrains the sidewalk's width here, so sidewalk widening may need to proceed in conjunction with repair or stabilization of the retaining wall.

In the northbound direction, two Pulse station sites are considered on the far side of this intersection. Site A would be placed immediately adjacent to the intersection, and would require closing a driveway to the adjacent strip mall. Site B would be slightly further from the traffic signal, but could fit a Pulse station using an existing stretch of sidewalk in front of the Tool Store Go-Kart Shop. Both of these sites would confer the benefits of TSP related to bus speed and reliability.

In the southbound direction, a far-side station is recommended at Site C. This site would connect directly to the Portage Woods multi-purpose trails that access the Chicago Portage National Historic Site. It also is a far-side location, which takes advantage of the TSP benefits related to speed and reliability.

[27] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 42 - Proposed Access Improvements near Harlem Avenue and 46th/47th Street

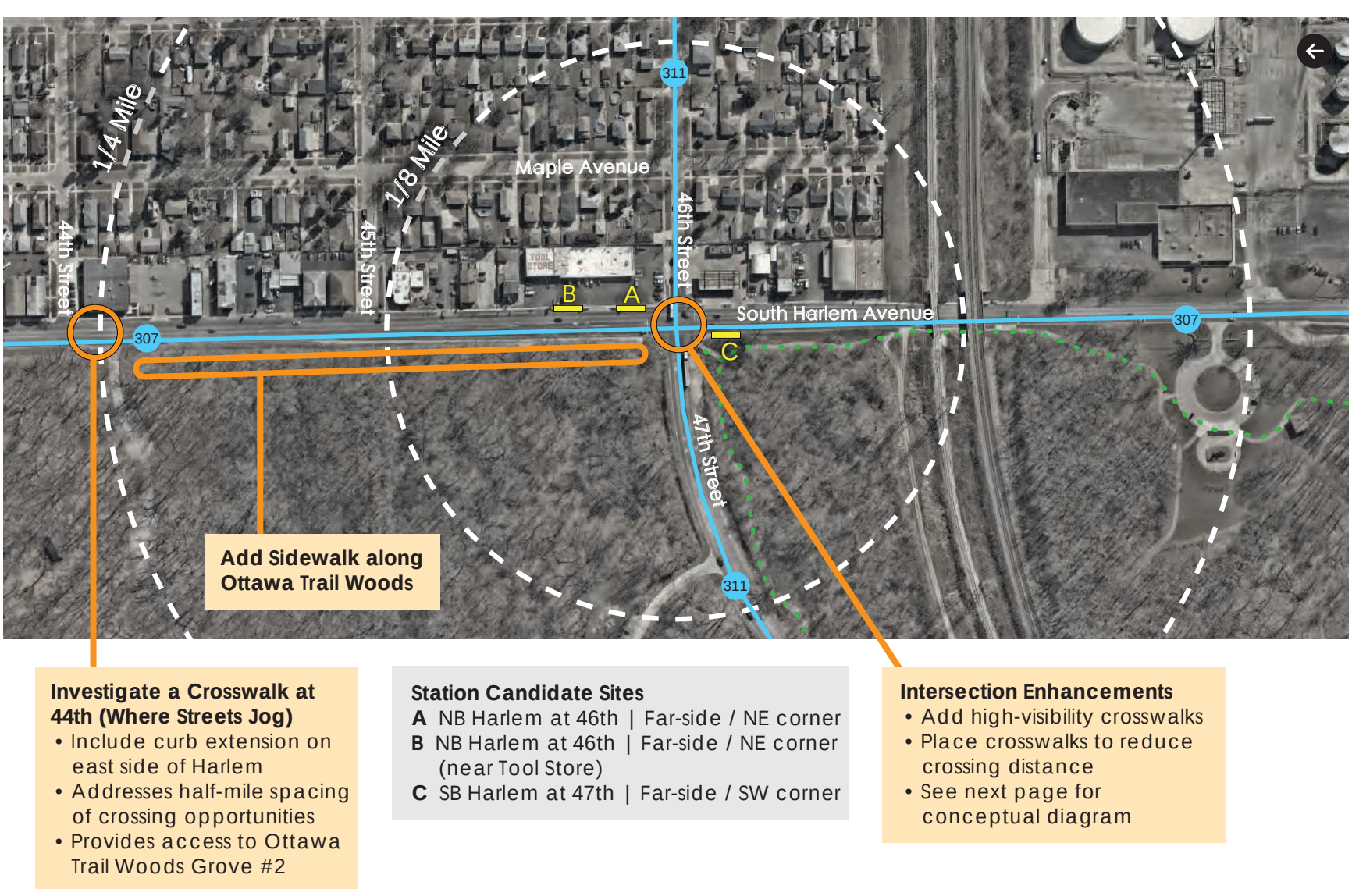
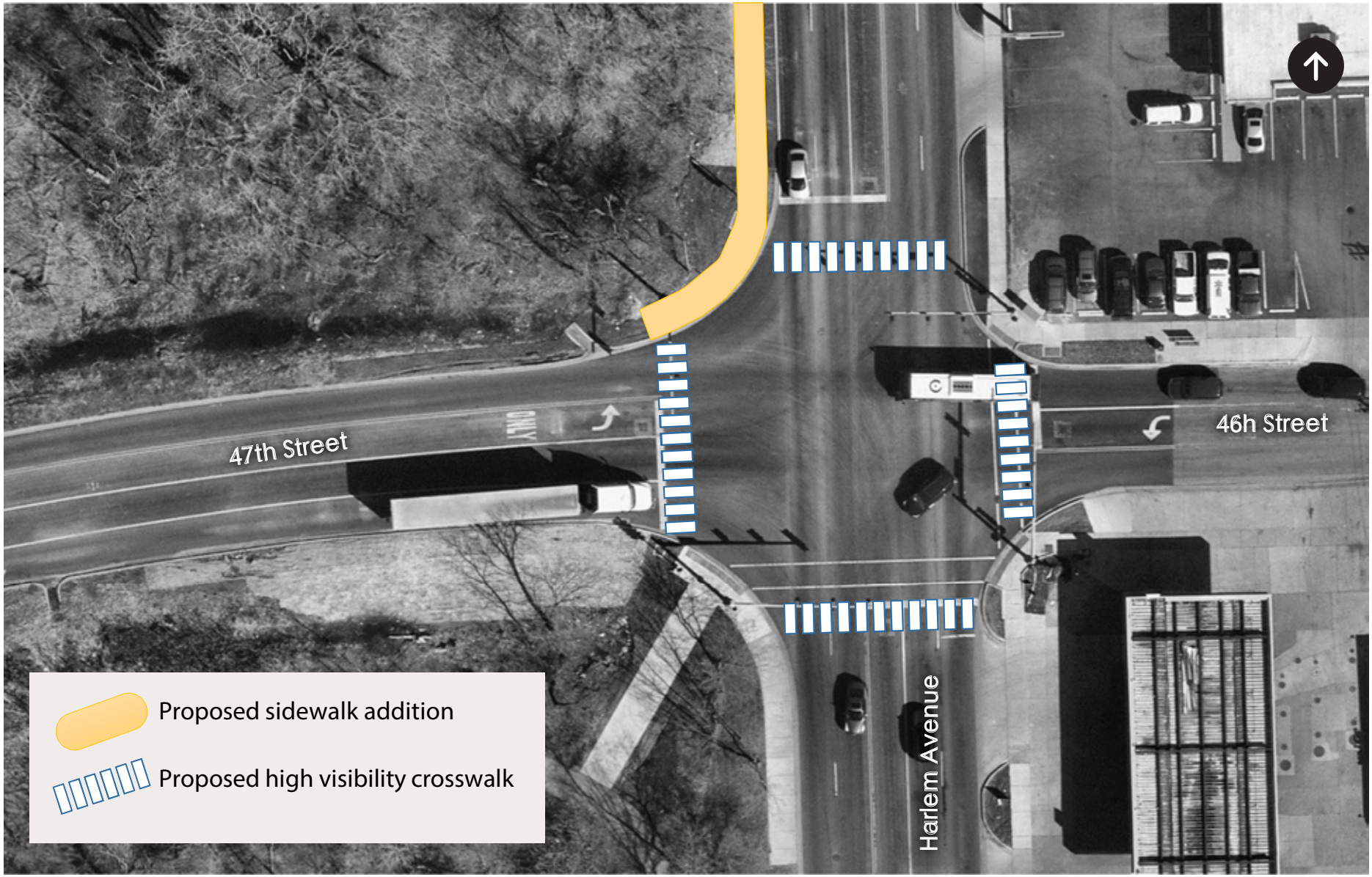


Figure 43 - Conceptual Intersection Improvements at Harlem & 46th/47th



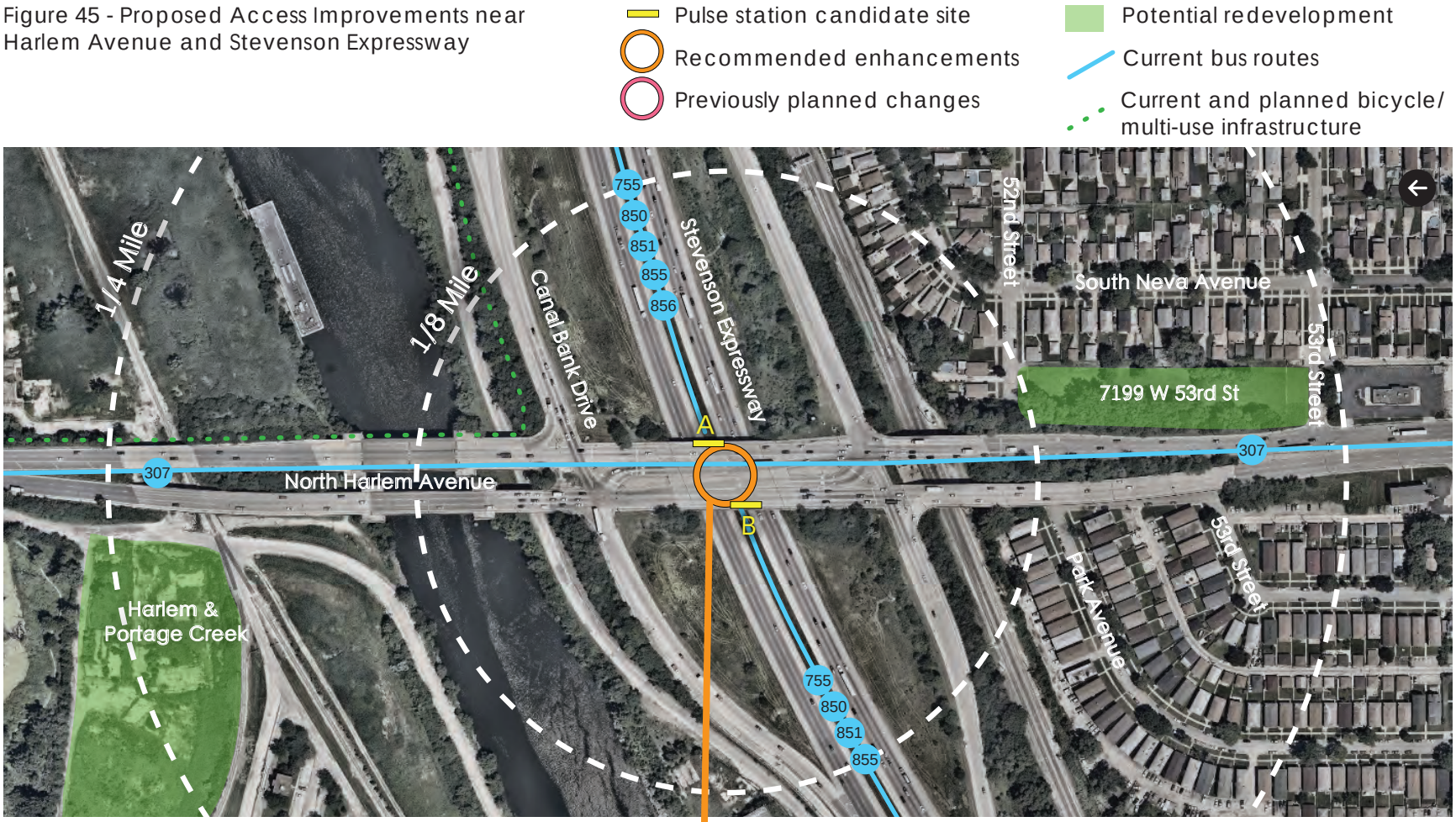
Stevenson Expressway Station Area

While a Pulse station at the Stevenson Expressway is rated as a low priority, its competitiveness could grow dramatically with changes to the transit network. In particular, this station location would become quite compelling if a transfer station can be created to allow travelers to transfer between regular and/or Pace Pulse service on Harlem Avenue and Pace Express bus service using the left shoulder lanes of the Stevenson Expressway. Currently the location has no transit ridership within a quarter mile.

The proposed access improvements in this area are illustrated on the following page. The primary recommendations here would be to establish reasonable Pulse station locations that facilitate connections with express buses in the median of I-55 below. Pace and IDOT are investigating the feasibility of this concept, and whether or not IDOT's I-55 Managed Lanes project would provide a future opportunity to implement such a concept. Additional study of the existing conditions and environmental implications of this type of station development should be conducted by Pace and/or IDOT to aid in assessing its viability.

Figure 44 - An example from Minneapolis of a transfer station connecting express buses and local buses. This station is located where I-35W crosses E 46th St. Source: Google Maps

Figure 45 - Proposed Access Improvements near Harlem Avenue and Stevenson Expressway



Station Candidate Sites

A NB Harlem at Stevenson Bridge | Mid-block / East side

B SB Harlem at Stevenson Bridge | Mid-block / West side

Assess feasibility for combined inline expressway and Pulse station

- Connect with Pace Express service on the Stevenson Expressway
- Coordinate with the I-55 Managed Lanes project

Archer Avenue Station Area

The Archer Avenue station area is a Local Activity Center featuring auto-oriented commercial use and single-family housing. This station location exhibits good walkability, though its overall competitiveness is considered low. Based on 2016 ridership, the station has 147 daily riders within 1/8 mile and 167 daily riders within 1/4 mile.[28] The station location is also beneficial for transit connections and for maintaining service coverage.

The proposed access improvements in this area are illustrated on the following page. In addition to the global recommendations related to crosswalks and pedestrian signals, specific changes are proposed to reduce pedestrian exposure at Harlem and Archer. The Village of Summit has expressed concern for pedestrian safety at this location, and currently some of the crosswalks exceed 100 ft. A conceptual sketch of changes to this intersection is shown on the subsequent page; it seeks to provide median refuge and to build upon concepts already developed by IDOT.

In the northbound direction, a near-side Pulse station may be considered at the southeast corner of Harlem and Archer. This location, marked as Site A, would be in front of a new Aldi store. It also provides for convenient connections with the eastbound CTA Route 62H. On the far side of the intersection, the current sidewalk appears too narrow to fit a Pulse station (less than ten feet wide.) However, the sidewalk might be widened by reducing the width of travel lanes from twelve feet to ten or eleven feet, or by using part of the road's median width. Site B, along the side of the Walgreens store, would be desirable if the right-of-way were revised in this manner. This far-side location would generate speed and reliability benefits through TSP.

In the southbound direction, near-side and far-side Pulse station options can be considered. North of the intersection, Site C would be an option in front of the Angry Slice restaurant's parking lot. While the site has adequate space for a station, it may disrupt a small outdoor seating area. South of the intersection, Site D would place the station along a grassy area between Burger King and Portillo's restaurants. (Burger King owns the site.) This is quite close to an existing bus stop, and it would provide convenient connections with westbound CTA Route 62H. It would also leverage the benefits of Transit Signal Priority. For these reasons, Site D is the preferred southbound station.

Due to the presence of CTA bus service, Pace should coordinate with CTA when selecting final Pulse station sites in this area.

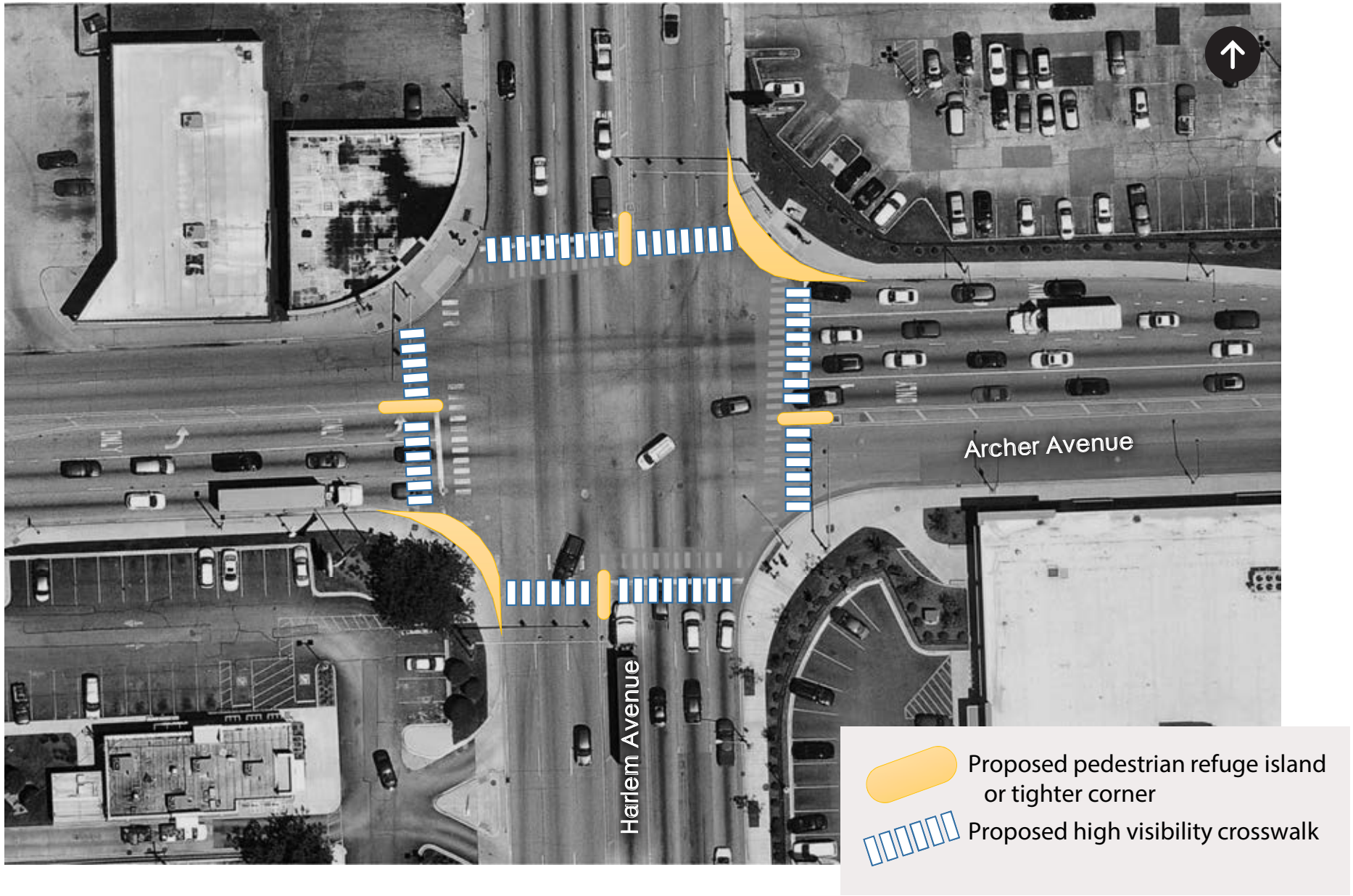
[28] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 46 - Proposed Access Improvements near Harlem Avenue and Archer Avenue

Intersection Enhancements
- Enhance median pedestrian refuge islands
- Repaint high-visibility crosswalks
- See next page for conceptual diagram

Station Candidate Sites
A NB Harlem at Archer | Near-side / SE corner (near Aldi)
B NB Harlem at Archer | Far-side / NE corner (near Walgreens)
C SB Harlem at Archer | Near-side / NW corner (near Angry Slice)
D SB Harlem at Archer | Far-side / SW corner

Figure 47 - Conceptual Intersection Improvements at Harlem & Archer



63rd Street Station Area

The 63rd Street station area is a Mixed Residential/Industrial Neighborhood with large-scale manufacturing uses as well as single-family residential neighborhoods. While its overall competitiveness is considered low, the station location is necessary for transit connections and maintaining coverage. Based on 2016 ridership, the station has 200 daily riders within 1/8 mile and 204 daily riders within 1/4 mile.[29]

The proposed access improvements in this area are illustrated on the following page. Two specific areas should be highlighted in particular. First, IDOT is leading a study to evaluate grade separation of BRC Railroad crossings at 63rd and/or 65th Street. This could improve transit performance if it reduces traffic delays, but care should be taken that changes do not diminish pedestrian access to transit and destinations in the area. Secondly, at the intersection of Harlem and 63rd, crosswalks exceed 110 ft with relatively little protection. Following the area map is a conceptual sketch of ideas to create new refuge islands and other adjustments to reduce pedestrian exposure at the intersection.

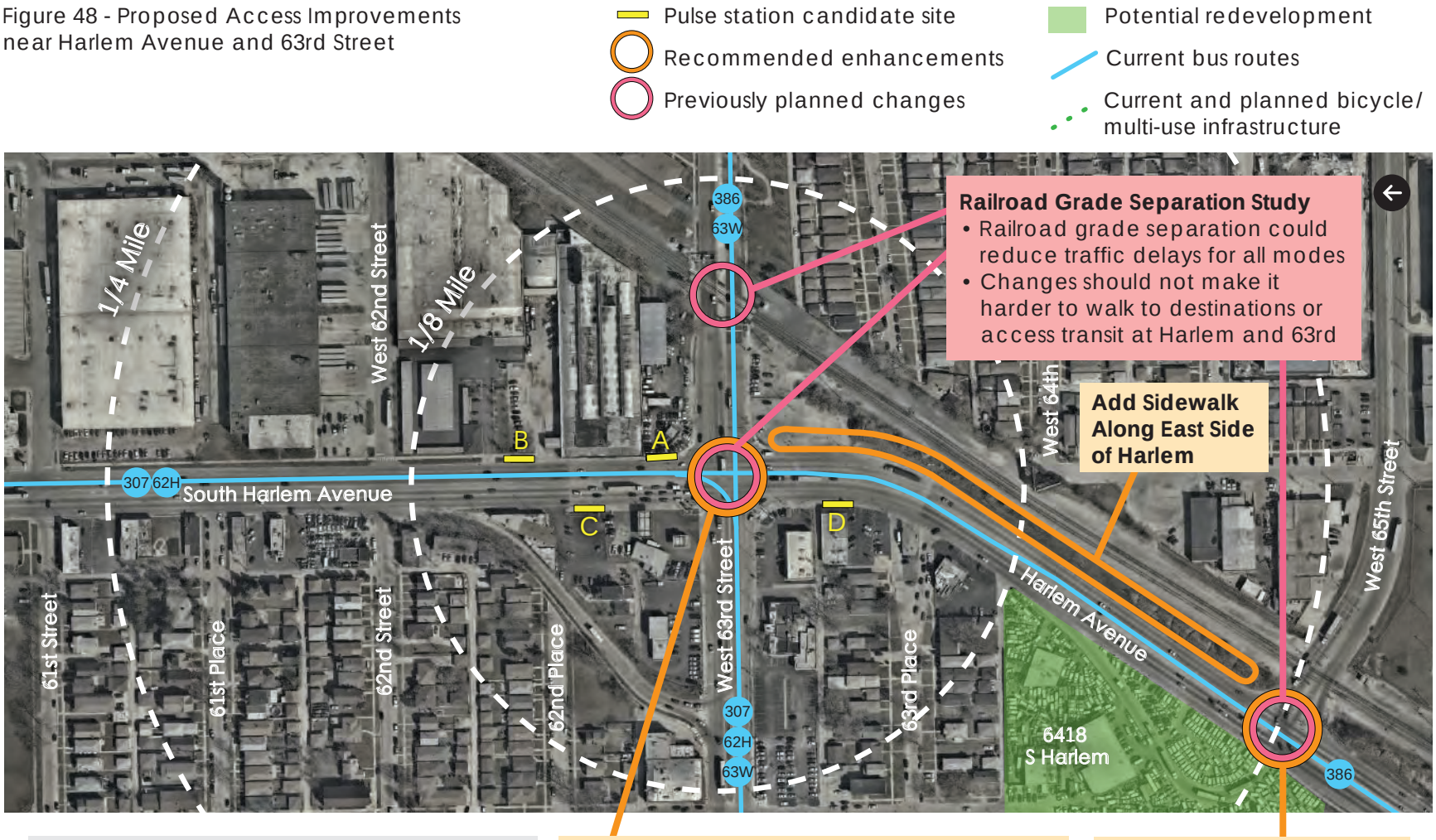
In the northbound direction, two different far-side Pulse station sites are considered at 63rd Street. The first option, Site A, would only be viable if the adjacent property were redeveloped. This location would be at Adam's Auto Sales next to the intersection, and as currently configured it would block one of the site's driveways. Site B is further from the intersection in front of the CubeSmart parking lot. The downside to this option is that it sits about 300 feet from the intersection. Both northbound options would utilize the benefits of Transit Signal Priority and would offer convenient transfers with CTA Route 63W.

In the southbound direction, near-side and far-side station sites can be considered. Site C would be a near-side location adjacent to the parking lot of Cigarette City Liquors. It is approximately 200 ft from the intersection, which is farther than would be ideal. Site D would be a far-side station location south of the intersection. It would place the station in front of Grand Dukes restaurant and bar. The space for a station in front of Grand Dukes is relatively limited, so a "micro station" might be required. Site D would achieve the speed and reliability benefits of Transit Signal Priority.

Due to the presence of CTA bus service, Pace should coordinate with CTA when selecting final Pulse station sites in this area.

[29] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 48 - Proposed Access Improvements near Harlem Avenue and 63rd Street



Station Candidate Sites

- **A** NB Harlem at 63rd | Far-side / NE corner (near Adam's Auto Sales)
- **B** NB Harlem at 63rd | Far-side / NE corner (near CubeSmart)
- **C** SB Harlem at 63rd | Near-side / NW corner
- **D** SB Harlem at 63rd | Far-side / SW corner (near Grand Dukes)

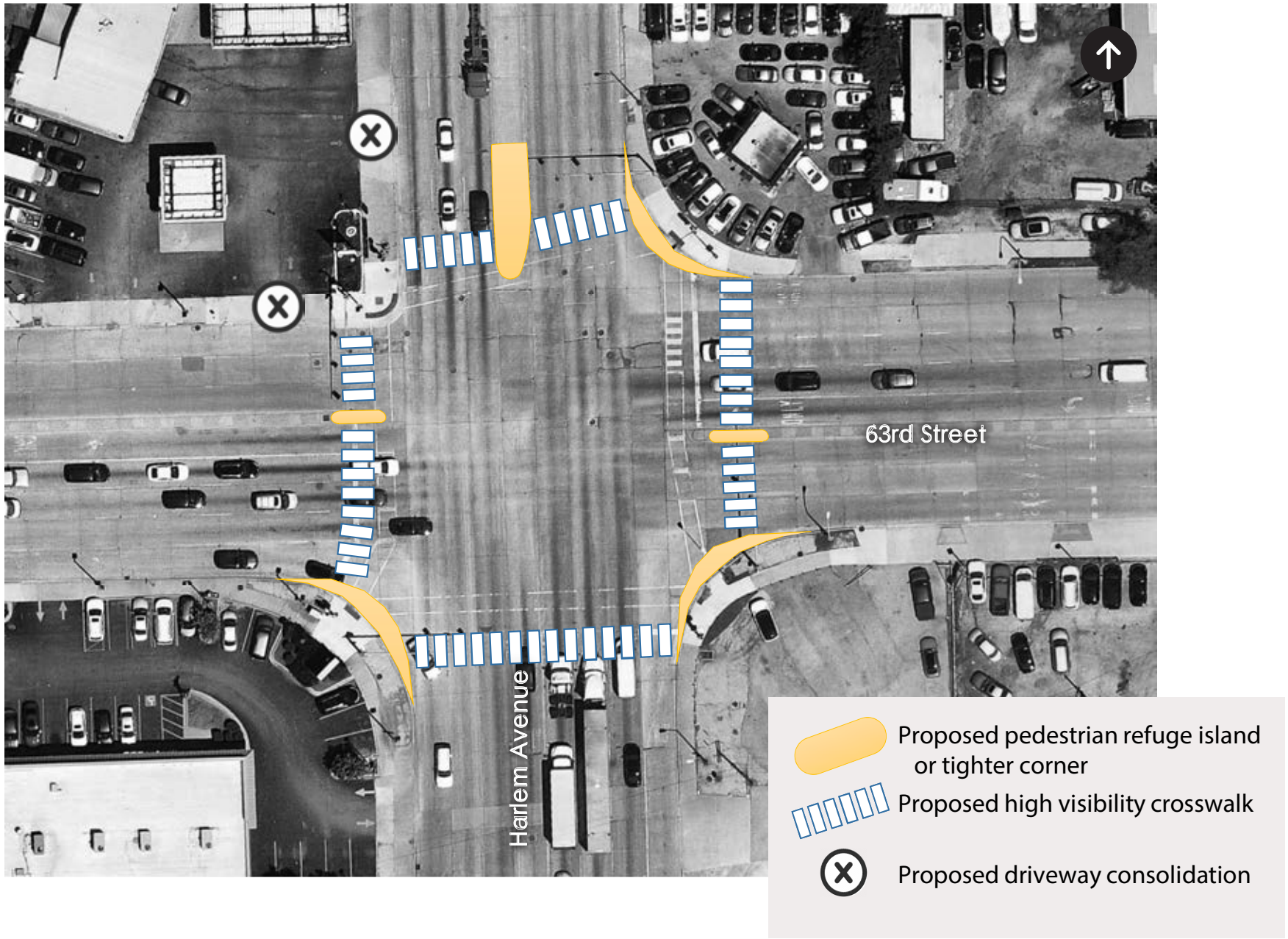
Intersection Enhancements

- Enhance median pedestrian refuge islands
- Use high-visibility crosswalks
- Shift crosswalks to reduce crossing distances
- Consolidate driveways on the northwest corner
- See next page for conceptual diagram

Intersection Enhancements

- Add high-visibility crosswalks
- Create raised median for pedestrian refuge

Figure 49 - Conceptual Intersection Improvements at Harlem & 63rd



71st Street Station Area

The 71st Street station area is a Mixed Residential/Industrial Neighborhood with industrial uses to the northeast, single-family residences to the south, and Toyota Park/SeatGeek Stadium to the northwest. While its overall competitiveness is considered low, the station location is necessary to ensure coverage and reasonable station spacing. As of 2016, this location only sees 12 daily riders within 1/8 mile and 24 daily riders within 1/4 mile.[30] 71st Street is the southern limit of the Central Harlem Avenue study area.

The proposed access improvements in this area are illustrated on the following page. Recommendations include providing sidewalk on the east side of Harlem north of 71st and improving pedestrian accommodations at Harlem and 71st. While this is not as large as some of the corridor's intersections, the location is challenging due to heavy freight usage. Pace should work with IDOT and Bedford Park to ensure that the intersection can accommodate transit users on foot.

The Pulse station at 71st Street could take different forms depending on the ultimate routing of the Pulse service. If the service continues down Harlem Avenue beyond 71st Street, then the station should be sited immediately at the intersection. However, if the service terminates using the adjacent transit center at Toyota Park/SeatGeek Stadium, then the Pulse station should be placed at that facility.

If Pulse service operates continuing through 71st Street, then two station locations should be considered in the northbound direction. A near-side option would be Site A, in front of the Taqueria Los Magueyes restaurant. A far-side option would be Site B, using the frontage of the MJ Holding distribution facility. Site B could experience some challenges related to the adjacent utility power lines, and it also requires new sidewalk connections. However, if the location proves viable, it will have the speed and reliability benefits of Transit Signal Priority.

If Pulse service operates continuing through 71st Street, one station location is recommended in the southbound direction. This is shown as Site C, at the side of the National Truck Parts building. As a far-side location, this would leverage the benefits related to Transit Signal Priority.

If Pulse service terminates at Toyota Park/SeatGeek Stadium, then the station should be placed at Site D. This location would be the same as the existing park-and-ride served by Pace Route 856. The Pulse station would be an enhancement of the existing facility. However, this site would require resolution to inherent operational challenges. The closest street access would require northbound buses starting at the Pace Transit Center at Toyota Park to make an unprotected left turn onto eastbound 71st Street then immediately make another left turn onto northbound Harlem Avenue. If this site is selected, Pace, IDOT and the Village of Bridgeview should assess if any traffic signal priority (TSP) system could provide protected turning movements for buses, and the steps that would be involved with pursuing such a system. This system could also potentially be used to help with traffic control during popular events at Toyota Park.

[30] These statistics include ridership from Pace Routes 307, 318, and 386.

Figure 50 - Proposed Access Improvements near Harlem Avenue and 71st Street

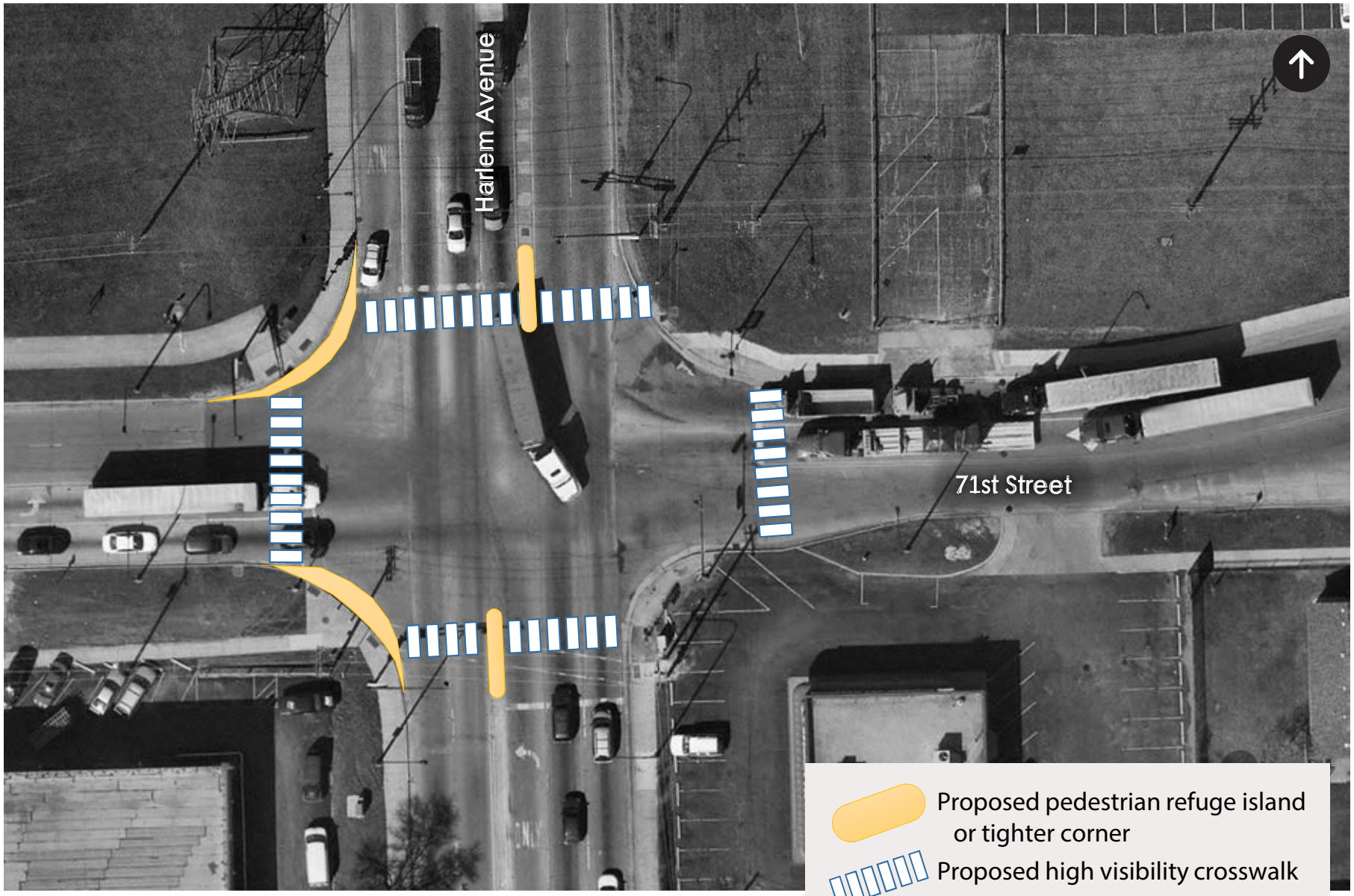
Station Candidate Sites

A NB Harlem at 71st | Near-side / SE corner (near Taqueria Los Magueyes)
B NB Harlem at 71st | Far-side / NE corner
C SB Harlem at 71st | Far-side / SW corner (near National Truck Parts)
D Pace Transit Center at Toyota Park/SeatGeek Stadium

Intersection Enhancements

- Install high-visibility crosswalks
- Enhance median pedestrian refuge islands
- See next page for conceptual diagram

Figure 51 - Potential Intersection Improvements at Harlem & 71st



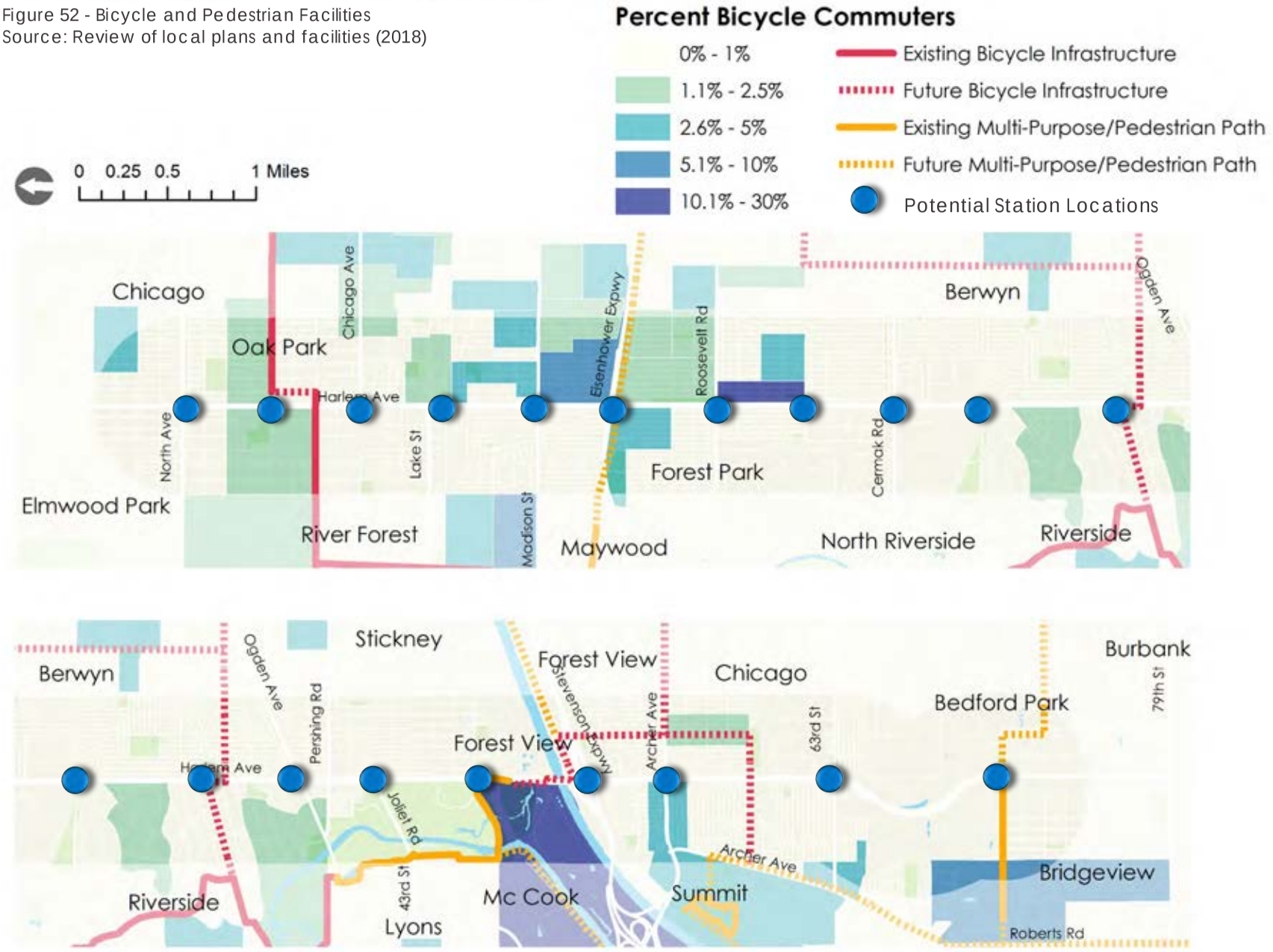
Connections with Bicycling Network

Central Harlem Avenue is generally inhospitable to bicyclists, but there is a regional network of bicycle and multi-purpose infrastructure that crosses the corridor at various points. As Figure 68 shows, six of the potential Pulse stations would connect with existing or planned facilities. These would be the stations at 71st Street, Stevenson Expressway, 16th/47th Street, Metra BNSF Line, Eisenhower Expressway, and Division Street.

Bicycle parking is a standard feature in the design of Pace's Pulse stations, but at the stations with connections to regional bicycling facilities additional features may be desirable. Wayfinding signage to orient travelers to the regional bicycling network could be a useful improvement that encourages more combined use of transit and bicycling.

Additionally, while the regional bicycling facilities generally cross Harlem spaced about one a mile, there is a noticeable gap between the Eisenhower Expressway and the Metra BNSF Line. Perhaps an east-west route could be identified to fill this gap near Roosevelt Road, 16th Street, Cermak Road, or 26th Street.

Figure 52 - Bicycle and Pedestrian Facilities
Source: Review of local plans and facilities (2018)



Real Estate Market Analysis

This market analysis report provides an overview of the economic activity occurring in the Corridor, current trends that may affect the Corridor, demographic and development trends in the various market sectors, and potential future development types and strategies.

Based on the existing mix of uses throughout the Study Area and their potential as demand drivers for future Pace Pulse treatments along the Corridor, this report focuses on the following market sectors:

- Residential
- Retail & Commercial
- Office
- Industrial
- Institutional / Recreational / Entertainment

Following an overview of these market sectors, the report offers input on redevelopment opportunities for key sites and areas along the Corridor.

Demographic Analysis

The 14 communities that intersect Harlem Avenue between North and 71st are all unique. They range from small (Bedford Park has a population of 679) to the City of Chicago and provide a diverse array of household and population demographics as seen in Table 8. The increasingly diverse population will support a variety of new development opportunities.

Table 8: Demographic Data for All Neighboring Communities - North to South

Note: Hispanic population is an ethnicity, not a racial group. Due to the overlap, percentages exceed 100%.

Summary	Chicago	Elmwood Park	River Forest	Oak Park	Forest Park	Berwyn	North Riverside	Chicago Ward 29
Total Population	2,739,829	25,359	10,654	52,662	14,457	57,911	6,781	52,226
Total Households	1,055,403	9,613	3,775	23,085	7,340	18,961	2,831	17,158
Average HH Size	2.54	2.62	2.59	2.26	1.95	3.05	2.38	3.01
Household Characteristics								
Family HHs	579,354	6,391	2,621	13,082	3,135	13,099	1,737	11,832
Median Age	34.1	39.8	42.1	39.9	41.1	33.6	45.1	34.4
Median HH Income	$50,740	$59,202	$128,610	$84,598	$54,521	$52,283	$58,223	$36,923
Population by Race								
White	44.5%	83.0%	83.8%	67.5%	55.7%	59.3%	79.6%	15.9%
Black	33.3%	1.7%	6.0%	19.5%	28.8%	5.2%	6.1%	65.1%
American Indian	0.5%	0.3%	0.1%	0.2%	0.3%	0.6%	0.1%	0.5%
Asian / Pacific Islander	5.3%	3.4%	5.8%	6.3%	7.8%	2.9%	2.9%	1.5%
Some Other Race	13.6%	10.3%	2.0%	2.3%	3.9%	28.4%	9.2%	14.7%
Two+ Races	2.7%	2.7%	2.4%	4.3%	3.4%	3.6%	2.0%	2.5%
Hispanic Population	29.2%	28.5%	6.9%	7.9%	11.5%	63.3%	27.0%	28.7%

Summary	Riverside	Lyons	Stickney	Forest View	Summit	Bedford Park	Bridgeview	Chicago Ward 23
Total Population	9,047	10,879	6,759	722	11,000	679	17,113	59,196
Total Households	3,504	4,082	2,787	274	3,232	240	5,879	19,692
Average HH Size	2.58	2.65	2.41	2.62	3.37	2.83	2.84	2.99
Household Characteristics								
Family HHs	2,385	2,601	1,488	186	2,441	177	4,114	14,091
Median Age	44.0	38.1	36.8	44.1	30.9	40.1	37.8	37.5
Median HH Income	$101,925	$55,171	$46,731	$63,277	$50,144	$65,029	$53,761	$64,117
Population by Race								
White	89.4%	73.8%	65.6%	84.3%	57.3%	82.0%	82.9%	69.8%
Black	1.2%	3.5%	2.1%	0.6%	7.8%	0.7%	2.5%	4.2%
American Indian	0.2%	0.8%	0.5%	0.0%	0.7%	0.3%	0.2%	0.5%
Asian / Pacific Islander	2.7%	1.7%	1.9%	2.7%	2.3%	0.3%	3.7%	1.3%
Some Other Race	4.4%	17.5%	27.3%	10.1%	28.1%	14.2%	7.5%	21.7%
Two+ Races	2.1%	2.8%	2.7%	2.4%	3.9%	2.5%	3.2%	2.6%
Hispanic Population	13.1%	41.8%	54.9%	32.5%	67.8%	27.1%	17.8%	51.7%

Source: Esri Business Analyst, 2017 Estimates.

Four communities that border the Central Harlem Avenue Corridor have Hispanic populations of 40% or more: Berwyn, Summit, Lyons, and Stickney. The majority of residents who identify as Hispanic are located on the eastern and southern portions of the Study Area. Besides Chicago, the two communities with the highest black population are Oak Park (19.5%) and Forest Park (28.8%).

The Study Area has an estimated population of more than 87,000, and comparatively low average household size of 2.48 persons. This suggests more single-person households are located in the Corridor than are found throughout many of these communities. This may be due to Harlem Avenue's concentration of multi-family housing, which is more economical for individuals living alone.

Table 9: Demographic Data for Study Corridor
Note: Hispanic population is an ethnicity, not a racial group. Due to the overlap, percentages exceed 100%.

	Total Population	Total Households	Average HH Size	Family HHs	Median Age	Median HH Income	White	Black	Hispanic Population
Harlem Avenue Corridor	*87,501*	*34,835*	*2.48*	*20,590*	*38.5*	*$63,719*	*68.4%*	*9.3%*	*33.7%*

Source: 2017 Esri Estimates

River Forest and Riverside are the highest income communities, with median household incomes greater than $100,000. Oak Park is the next highest with a median of $84,598. The two smallest communities in terms of population, Forest View and Bedford Park, have median household incomes of $63,277 and $65,029, respectively. The remainder of communities all have median household incomes below $60,000, with the lowest being Stickney's median of just below $47,000 per household.

Residential

Of the 37,000+ housing units located in the Study Area, 7.4% are reported vacant according to Esri Business Analyst. This represents a reasonably healthy rate, given the mix of single-family and multifamily units. A total of 50% of the housing units are located in single family homes, either attached or detached. Another 26.7% of units are located in buildings with 2-9 units. Just 7.7% (fewer than 3,000) of all housing units in the Study Area are located in buildings with 50 or more units. A number of these larger residential buildings have been completed since 2009 and more are under construction and planned.

Table 10: Residential Characteristics

Harlem Avenue Corridor Study Area Residential Characteristics	
Occupancy Characteristics	
Owner Occupied Units	20,585
Renter Occupied Units	14,263
Vacant Units	2,785
Total Units	37,632
Vacancy Rate	7.4%
Building Characteristics	
% Single Family Detached	46.9
% Single Family Attached	3.1
% 2-9 units	26.7
% 10-49 units	15.6
% 50+ units	7.7
Median Home Value	$63,719
Median Monthly Rent	$844

Source: 2017 Esri Estimates

Broader residential market trends indicate continued housing demand for a variety of product types at various price points. While the condominium market remains cool, new rental products are being built with higher rents, smaller unit sizes, and more amenities. In addition, mixed-use buildings, with residential units on top of ground floor commercial space, are being built with increasing frequency. A final relevant residential market trend is the popularity of townhomes, especially with first time Millennial homebuyers. According to 2017 data released by the National Association of Home Builders, the share of townhomes as a total of new single-family home starts is close to the all-time high seen just before the recession in 2008.

Oak Park, Elmwood Park, and Forest Park in the northern portion of the Study Area have the greatest residential density. The five largest multifamily developments, with a total of 1,186 units, are all located in Oak Park. The other two developments with more than 100 units in the Study Area are located in Elmwood Park and Forest Park.

As shown on the following table, four multi-family developments with more than 50 units have been completed in the Study Area - all in Oak Park - since 2009. These four developments include 795 new units, comprising roughly a quarter of the total units in buildings with 50 or more units within the entire Corridor. The Grove Apartments, the smallest of these six multifamily developments, was built as supportive low-income housing.

Figure 53 - Rendering of 1000 Lake Street Hartshorne Plunkard Architecture

Table 11: New and Proposed Multifamily Developments

Harlem Avenue Corridor Study Area
New and Proposed Multifamily Developments

Project	Status	Address	Community	Units	Stories	Avg. Asking Rent / Unit	Parking Spaces
Oak Park Place	Completed 2009	479-483 N Harlem Ave	Oak Park	204	13	$1,987	200
Grove Apartments	Completed 2013	820 Madison St	Oak Park	51	4	Low-Income	32
Vantage Oak Park	Completed 2016	150 Forest Ave	Oak Park	270	21	$2,110	588
The Emerson	Completed 2017	1135 Westgate St	Oak Park	270	20	$2,022	418
1133 South Blvd	Under Construction	1133 South Blvd	Oak Park	263	12	N/A	398
Albion at Oak Park	Proposed	1000 Lake St	Oak Park	265	19	N/A	204

Source: CoStar April 2018 and sources deemed reliable by Goodman Williams Group

Currently one project is under construction and an additional one is planned in Oak Park. 1133 South Boulevard will have 263 units and be located across the street from the CTA Harlem/Lake Green Line Station. This site includes one of Pace's highest-ridership bus stop locations. There is also one development, Albion Oak Park, with 265 units currently planned at 1000 Lake Street in Downtown Oak Park.

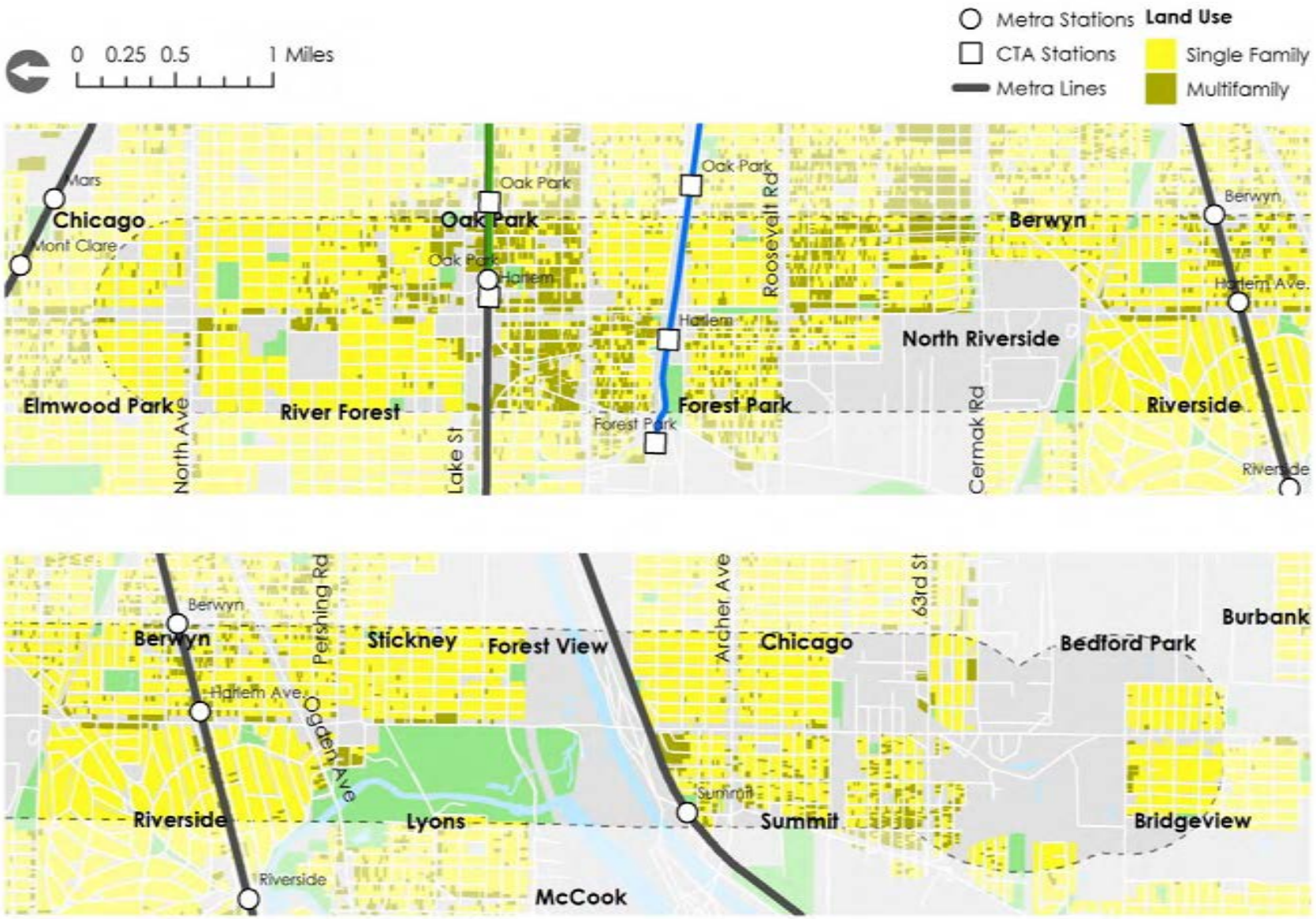
Figure 54 - Rendering of 1133 South Boulevard - Lincoln Property Company

Transit Implications

It is likely that residential development in the Central Harlem Avenue Corridor Study Area will mirror national trends in the coming years, with higher density mixed-use buildings in the northern section of the Study Area and the opportunity for infill development along Harlem south of I-290 as well as in areas proximate to Harlem Avenue. Pace intends for Pulse stations sites to be a key catalyst for transit-supportive infill development such as this new housing.

The trend of larger multifamily residential developments is a positive one for public transit demand, as density creates the economics of scale to make transit successful. Most of the recent multifamily developments are occurring near high-capacity rail and bus transit, and with the proper design this could represent a wave of transit-oriented development (TOD). The introduction of Pulse bus service could attract more transit-oriented housing to new station areas. The trend toward mixed-use development also enhances the local walkability, which supports transit.

Figure 55 - Residential Land Use Map
Source: Chicago Metropolitan Agency for Planning (CMAP) 2013



Retail & Commercial

Figure 56 - New Walgreens in Elmwood Park

Harlem Avenue is a major commercial corridor with a variety of retailers and commercial development located along this 10-mile stretch. In total, the Central Harlem Avenue Corridor Study Area has more than 7 million square feet (SF) of commercial space. It has an 8.1% direct vacancy rate, which is lower than the national retail vacancy rate of approximately 10%. This data comes from CoStar, a national provider of commercial real estate information. The total includes retail stores, professional and personal service business, and other commercial uses that are located in small storefronts, strip centers, mixed use buildings, large-format retail and one regional mall. According to CoStar, the total retail square footage has risen only 2.5% since 2009. This equates to 178,322 square feet in seven new buildings. While the total square footage has risen slightly in recent years, the average triple net rent, the rental rate which excludes taxes, insurance and maintenance, has jumped nearly $8.00/SF since 2015.

The former Sears store located at North and Harlem Avenues closed in 2017, vacating more than 350,000 square feet of space. In April of 2018 it was announced that all Carson's department stores, including the one located in the North Riverside Park Mall, would be closing by the end of 2018. Together, these two vacancies combine for nearly half a million square feet of empty space in the Study Area.

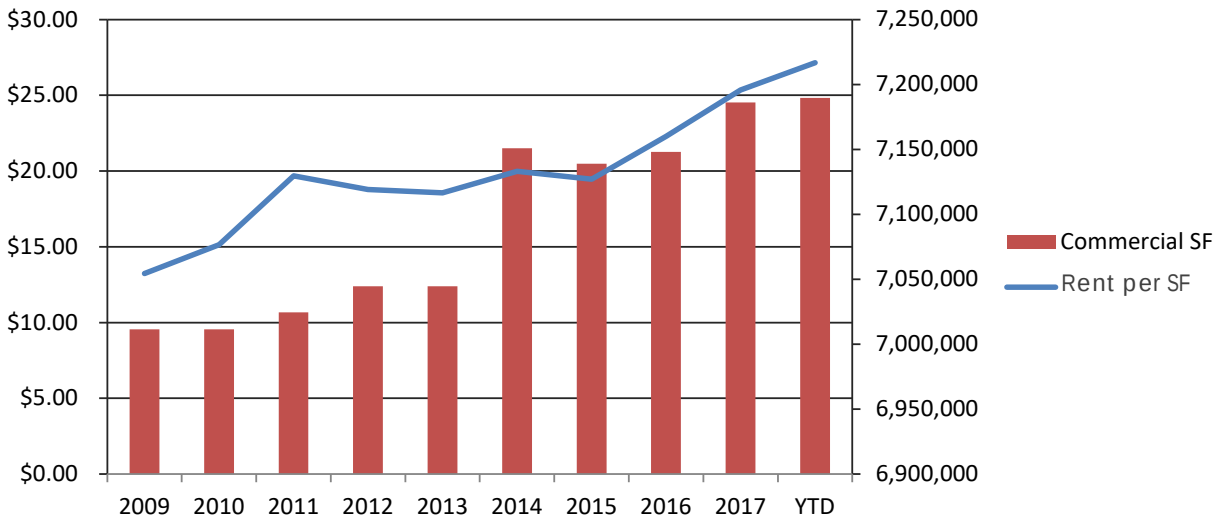


Figure 57 - Retail / Commercial Trends
Source: CoStar April 2018

There has been negative absorption (the change in occupied SF) for three years straight in the Study Area, and with Carson's closing, in addition to a number of other potential retail bankruptcies, this trend will likely continue in 2018.

Table 12: Retail stores and centers larger than 50,000 square feet in *gross leasable area*

Map ID	Shopping Center	Intersection (Corner)	Year Built	City/Village	Size (SF)	Anchor Tenants	Occupancy
1	North Riverside Park Mall	Cermak (SWC)	1977	North Riverside	1,322,529	J.C. Penney, Sears	99%
2	Former Sears	North (NEC)	1940	Chicago	356,744	None	0%
3	Cermak Plaza	Cermak (SEC)	1956	Berwyn	300,000	Office Depot, Ross Dress for Less, Marshalls, Walgreens	100%
4	Costco	25th (SWC)	2014	Riverside	150,000	Costco	100%
5	North Riverside Plaza	Cermak (SWC)	1996	North Riverside	138,225	Best Buy, Burlington Coat Factory, Kohl's, Petco	100%
6	River Forest Town Center	Lake (SWC)	1994	River Forest	88,328	Men's Wearhouse, Walgreens, Whole Foods	100%
7	Xsport/Marshalls	Pershing (SWC)		Lyons	64,501	Xsport, Marshalls	100%
8	1114-1122 Lake St	Lake (NEC)	2006	Oak Park	63,992	FCC, Bar Louie, Potbelly Sandwich Shop	100%
9	Jewel-Osco	Pershing (SEC)		Stickney	58,647	Jewel-Osco	100%
10	River Forest Town Center II	Lake (SWC)	2002	River Forest	56,520	DSW, Ann Taylor Loft, Panera Bread	100%
11	Nives Rizza Court	19th (SWC)		Riverside	53,891	Loyola Medicine, Aldi, AutoZone, Goodwill	100%
12	Former Sports Authority	18th (SWC)	1989	North Riverside	52,768	Charter Fitness, Chase Bank, Boost Mobile	29%
				Total SF	**2,706,145**		

Source: CoStar, April 2017

The intersection of Cermak and Harlem is a regional commercial destination, with more than two million square feet of commercial space located within a half mile of the intersection.

Figure 58 - Intersection of Harlem and Cermak, looking southwest

While some department store anchors located along the Harlem corridor are closing or shrinking, certain commercial establishments and sectors are doing well. In particular, demand for discounters, grocery stores, restaurants, and entertainment venues is strong. Local and national retailers serving the growing Hispanic community are likely to see continued growth in demand.

Recent developments in these centers are described below:

- North Riverside Park Mall – It was announced in early 2018 that Carson's, one of three department store anchors, will close by the end of summer. Additionally, the lower level of Sears is currently under construction, with 45,000 square feet to be occupied year end 2018 by Round 1, a family-friendly amusement. Sears will remain open on the 2nd floor.

- North Riverside Plaza – This shopping center, at 138,225 SF, abuts North Riverside Park Mall, and is anchored by Kohl's, Burlington Coat Factory, Petco and Best Buy.

- Cermak Plaza – Across Harlem Avenue from North Riverside Park Mall and North Riverside Plaza is Cermak Plaza, a 300,000 SF shopping center anchored by Office Depot, Ross Dress for Less, Marshall's, and in 2018 Tony's Finer Foods. Tony's will be relocating to nearly 72,000 SF in a space formerly occupied by Meijer, from its former location across Harlem.

Many of the communities along the corridor have robust sales tax revenues. Berwyn and North Riverside benefit especially from the large concentration of commercial space and have two of the five highest revenues of the surrounding communities (not counting Chicago). Forest Park, proximate to the Cermak-Harlem intersection, has the sixth highest tax revenue in the corridor. The highest retail sales tax generator along Harlem Avenue is Bridgeview, with contributions coming from Toyota Park as well as warehouses and manufacturing uses that sell items at retail.

The continuing growth in online sales and the closing of department stores in the Corridor suggest that future demand for commercial space will likely come in the form of neighborhood serving retail, restaurants, and service businesses.

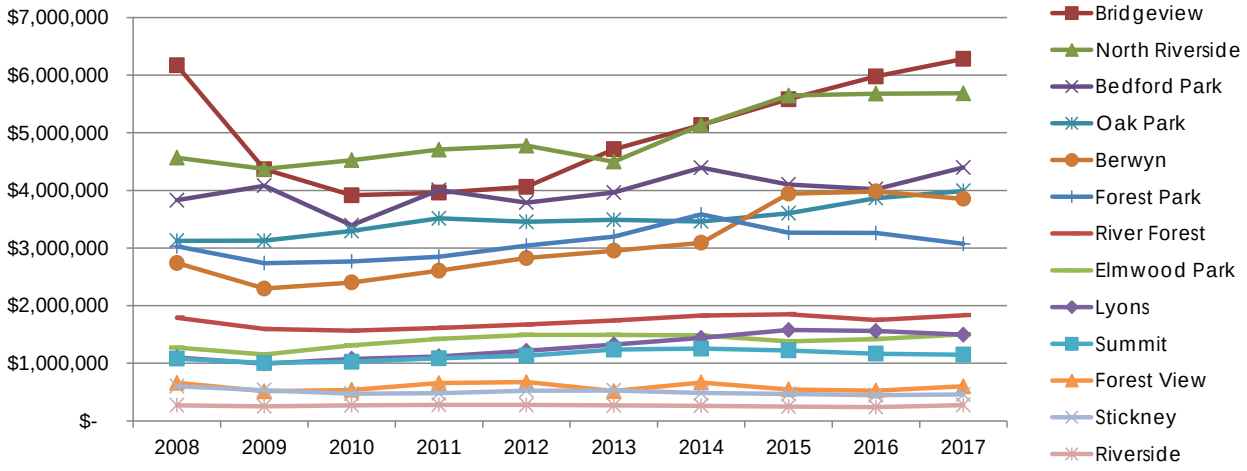
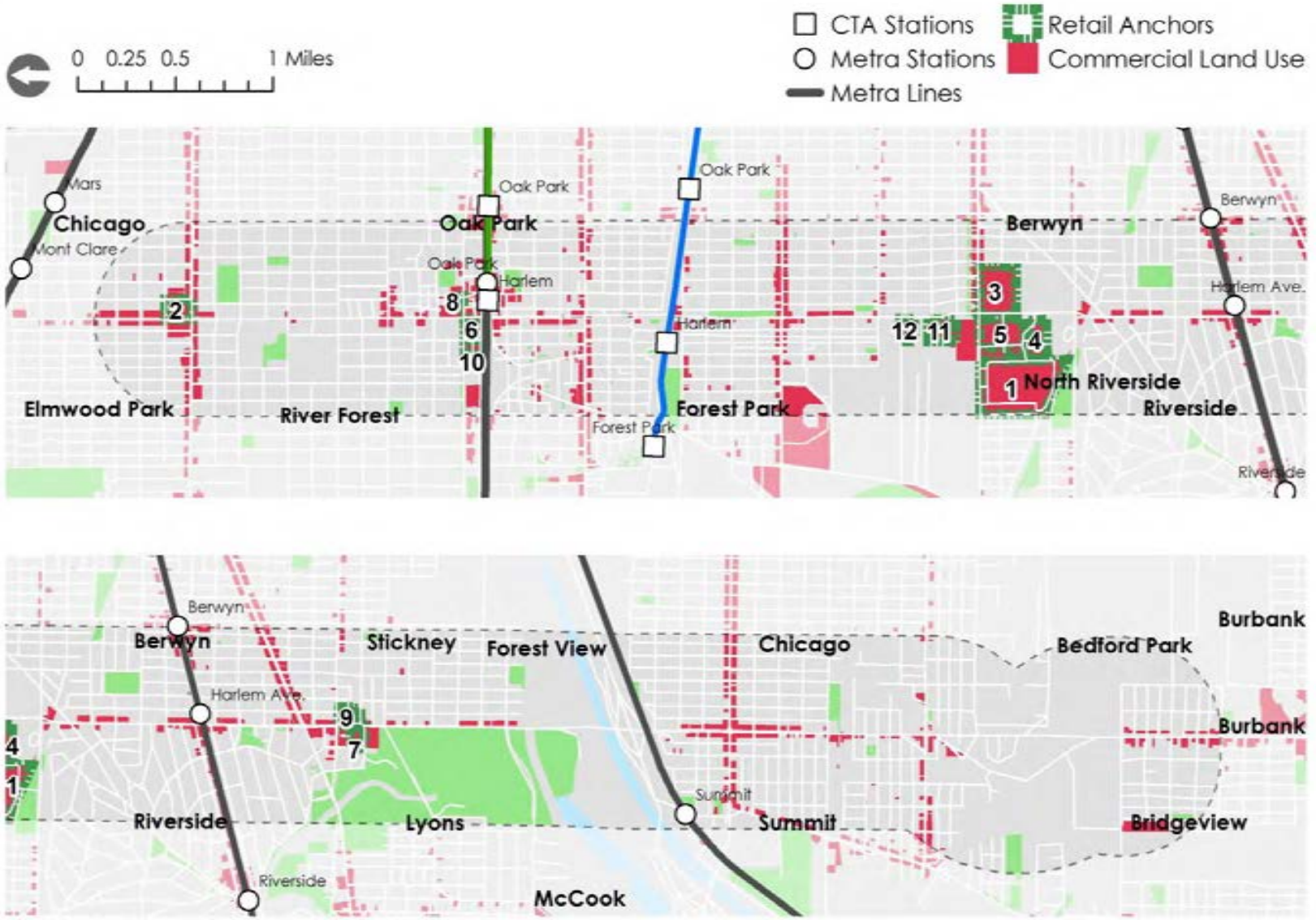


Figure 59 - Municipal Sales Tax for Surrounding Communities
Source: Illinois Department of Revenue

Transit Implications

The shift away from big-box commercial development may result in localized transit ridership losses, but a shift toward neighborhood commercial development could be positive for transit. These trends could be especially beneficial if the urban design of new neighborhood retail is more walkable than traditional big-box stores, where single-use structures are surrounded by a sea of vehicle parking and minimal pedestrian accommodations. In addition, many former big-box sites present opportunities for transit-supportive mixed use and multi-family residential redevelopment to reshape the corridor.

Figure 60 - Commercial Land Use Map
Source: CMAP 2013, CoStar April 2018



Source: Goodman Williams Group 2018,
Chicago Metropolitan Agency for Planning 2013

Office

The Study area does not contain a large or particularly vibrant office inventory. The office space is spread relatively evenly across the Corridor, with a small cluster located along Lake Street in Oak Park / River Forest. The Study Area currently has 1.85 million square feet of office space, a fraction of the amount of industrial (5.8 million SF) and commercial (7.2 million SF) space. The corridor has seen a decline of 42,000 square feet of office space since 2009.

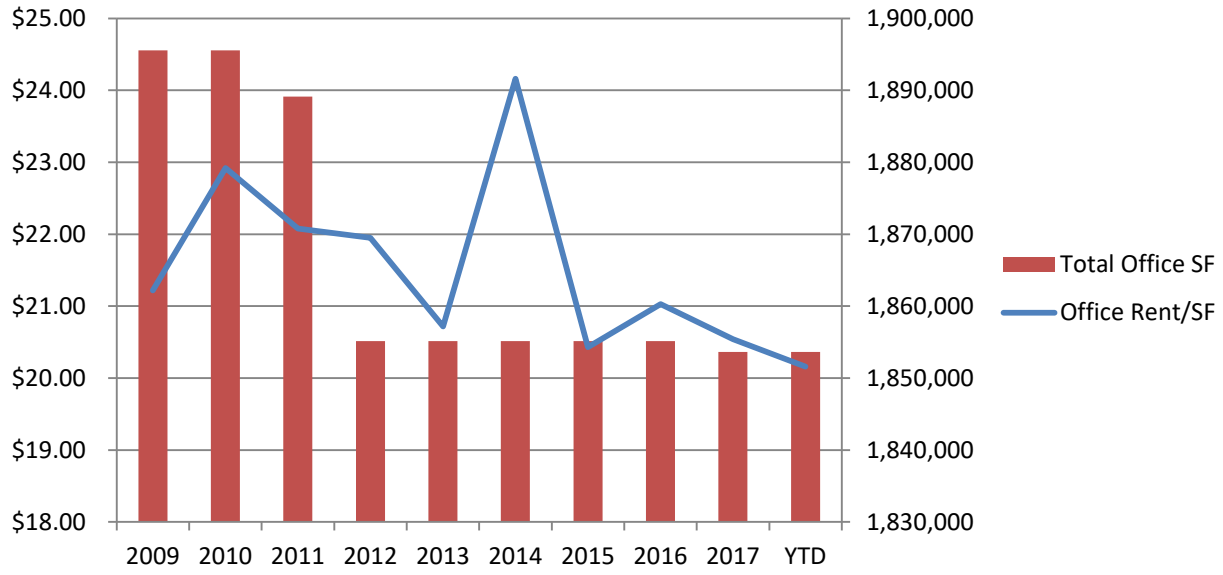


Figure 61 - Office Market Trends. Source: CoStar April 2018

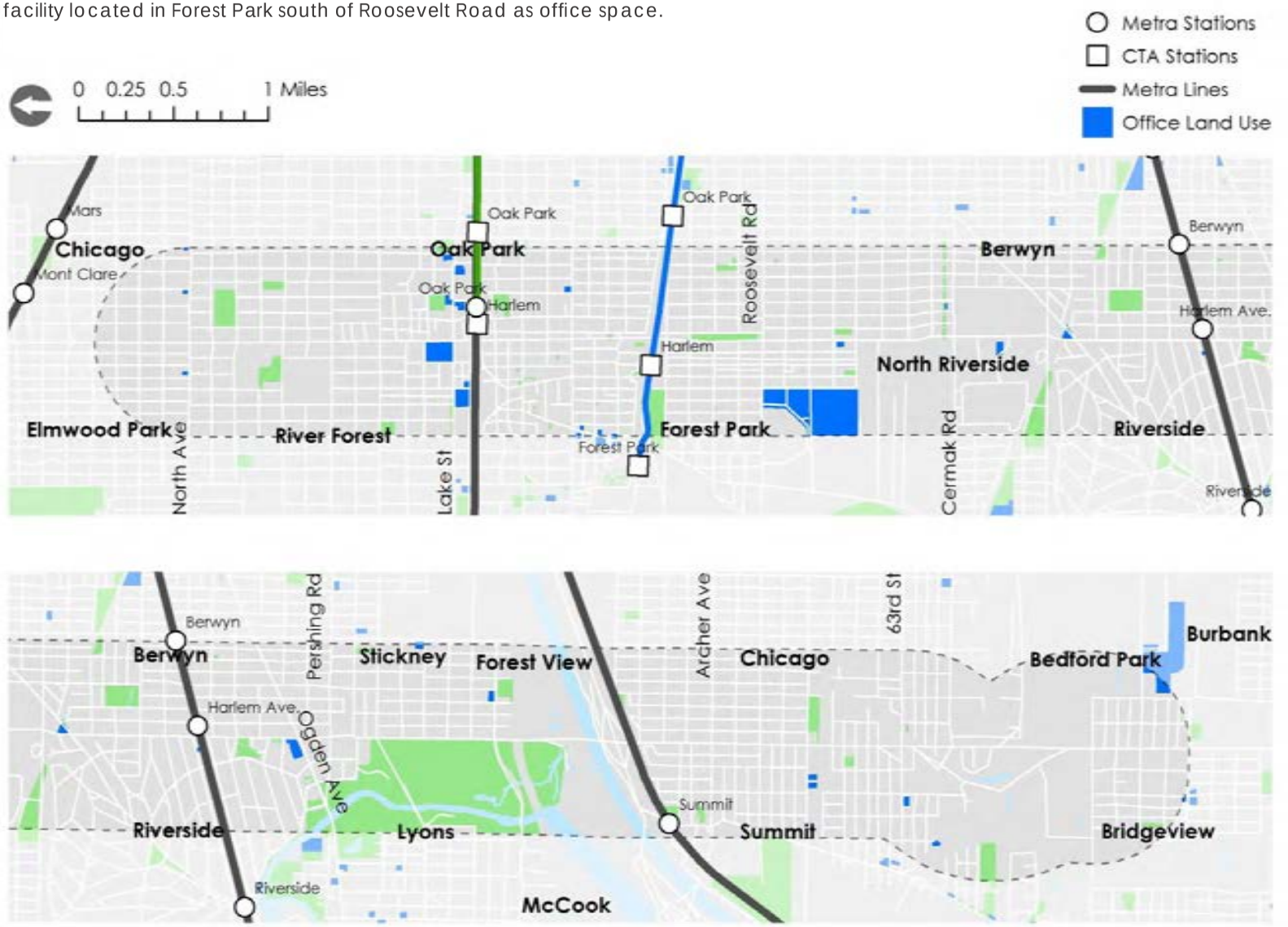
Weak demand for office space in suburban markets throughout the Chicago area makes the future of office space less certain in the Study Area. Additionally, CBRE, a global commercial real estate company, mentions that "'flight to quality' continues to drive market activity in the suburbs," noting that Class A office space, the newest and highest quality buildings on the market, had the highest positive absorption. These were followed by Class B space, which is slightly older but still in good condition, while Class C, the least desirable office space based on age and location, had negative absorption. According to CoStar, the Study Area has a total of 48 Class B and 96 Class C office buildings, and no Class A office buildings. These widely-used class definitions are based on those used by The Building Owners & Managers Association (BOMA).

Future development in the Study Area is unlikely to be in the form of large office projects, either in terms of height or floorplate. Development might include small amounts of professional office space, which includes medical, financial services, legal, and real estate professionals. In addition, the number of co-working spaces is increasing dramatically nationwide, and the potential exists for some of these co-working spaces to locate in the Corridor, particularly near transit stations.

Transit Implications

Based on current trends, the office development market will likely have a minimal impact on public transportation demand in this corridor. If the market continues to slow, former office sites along the corridor may present opportunities for transit-supportive mixed use and multi-family residential redevelopment.

Figure 62 - Office Land Use Map
Source: CMAP 2013
Note: CMAP's land use inventory demarcates a single-story USPS distribution facility located in Forest Park south of Roosevelt Road as office space.



Source: Chicago Metropolitan Agency for Planning 2013

Industrial

The Study Area includes nearly 6 million square feet of industrial space in 136 buildings, according to CoStar. Industrial buildings in the Study Area average 42,874 square feet per building, a relatively small size for industrial facilities. In addition, less than a third of buildings were constructed after 1980. Across the greater Chicago market, industrial space has experienced consistent growth and positive absorption every year since 2010, according to CBRE. Much of this growth has occurred in two industrial sectors: outlying areas related to large-scale freight distribution, and smaller facilities for last-mile distribution, a growing sector given the increasing popularity of e-commerce activity.

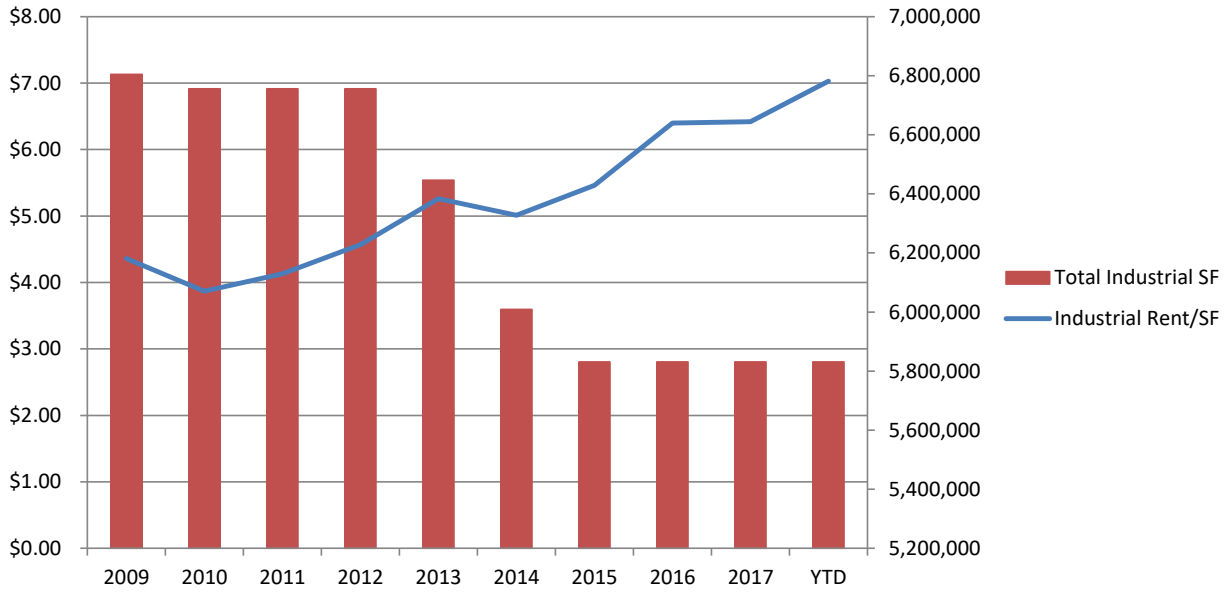


Figure 63 - Central Harlem Avenue Corridor Study Area Industrial Market Trends.
Source: CoStar April 2018

Industrial rents in the Study Area average $7.00/SF, a relatively high rate that is due in part to a low direct vacancy rate, which currently stands at 2.1%, according to CoStar. This low vacancy rate is due in part to the loss of nearly a million SF of industrial space, primarily between 2012 and 2015. The largest demolition was the former Don's Food Service & Supply at 308,877 square feet, according to CoStar. The loss of space and lack of any announced large-scale industrial projects indicate that the Harlem Corridor Study Area is not currently an active industrial market.

The potential for future growth would likely happen within the existing industrial clusters shown on the map at the end of this section. These areas include the following:

- South of I-55. Most of the industrial land use in the Corridor is located south of I-55 in Summit, Bedford Park, and Bridgeview. Five of the eight largest industrial employers in the Corridor are found here. East of Harlem between 60th and 63rd Streets and Oak Park Avenue is a 140 acre industrial area with a variety of users and industries. South of this industrial area is another large-scale industrial area that spans Bedford Park and Chicago
- Adjacent to Lake Street. There are three large users north of the I-290 Expressway at Lake Street, according to Esri. There is also a potential redevelopment site, a shuttered concrete plant, a mile

south near the Expressway. Access to the expressway and public transportation are important assets for facilities in this area.

- Immediately north of the Chicago Sanitary & Ship Canal. This area has the Metropolitan Water Reclamation District's (MWRD) Harlem Solids Management Area facility and a 145- acre Kinder Morgan terminal that handles chemicals, petroleum, and residual fuel oil. While the majority of these commodities are brought to the Kinder Morgan terminal via truck, rail and barge connections do relieve some of the traffic pressures on Harlem Avenue. Just north of the MWRD site is a 6.7-acre formerly industrial site that has been cleared of all facilities and could potentially see industrial use again in the future.

Figure 64 - Kinder Morgan terminal

Two of the largest industrial uses located near the Study Area are rail yards. The Belt Railway Company of Chicago (BRC) – the largest switching terminal in the country – is located east of the study area in Bedford Park, and is a high generator of truck traffic. The facility has in excess of 300 miles of tracks while the Clearing Yard, used for switching, spans more than 786 acres and dispatches over 8,400 rail cars per day. The BRC is co-owned by six railroad companies: BNSF, Canadian National, Canadian Pacific, CSX Transportation, Norfolk Southern, and Union Pacific.

The other rail yard located proximate to the Study Area is BNSF's Cicero Intermodal Terminal (CHC), which handles both trailer and container traffic for BNSF. A number of other freight railroads, as well as Metra, also have trackage rights through the facility. Additionally, Midway airport is located 1.5 miles east of the Corridor. While Midway does not deal in air freight, it is an important employment center and is a large generator of truck traffic.

As of May of 2018, four industrial properties in the Corridor are listed for sale. The smallest building is 11,861 square feet and the largest property is a 12-acre site with a 366,300 square foot building on it in Bedford Park, just north of the BRC.

Table 13: Industrial Properties for Sale

Harlem Corridor Study Area Industrial Properties for Sale			
Address	**Community**	**Building SF**	**Price**
6855 W 65th St	Bedford Park	366,300	Unlisted
6200 S Sayre Ave	Chicago	35,000	$2,495,000
1429 Circle Ave	Forest Park	21,000	$750,000
7437 W Archer Ave	Summit	11,861	$695,000

Source: Cityfeet.com, Loopnet.com

In the Study Area, there are eight industrial businesses with 50 or more employees, according to Esri. These companies represent a diverse group of smaller-scale manufacturers. The majority of these businesses are located south of I-55, and all can be found on the following map.

Table 14: Industrial Employment Anchors in the Corridor

Map ID	Business Name	Address	City	Business Type (NAICS)	Number of Employees
1	U.S. Post Office	901 Lake St	Oak Park	Postal delivery	180
2	Farmington Foods	7419 Franklin St	Forest Park	Meat processing	150
3	S & N Partnership	1100 Lake St	Oak Park	Single-family housing construction	150
4	G E Mathis Co.	6100 S Oak Park Ave	Chicago	Plate work manufacturing	90
5	Pierini Iron Works	6200 S Sayre Ave	Chicago	Ornamental and architecutral metal	75
6	Unique Envelope	5958 S Oak Park Ave	Chicago	Stationary product manufacturing	52
7	Hallett & Sons Expert Movers	7535 W 59th St	Summit Argo	Used household and office goods moving	50
8	Hayes Mechanical	5959 S Harlem Ave	Chicago	Heating equipment manufacturing	50

Source: Esri, Goodman Williams Group

It should be noted that one other large industrial facility, the Chicago Bulk Mail Center, a USPS transportation and warehousing facility, is located just south of Roosevelt in Forest Park. While shipping and employment numbers are inconsistent across sources, the site is over 50 acres and is a large generator of truck traffic as well as employment. The industrial site is marked as "office" space in the land use source from CMAP and was not flagged as a major employer by Esri.

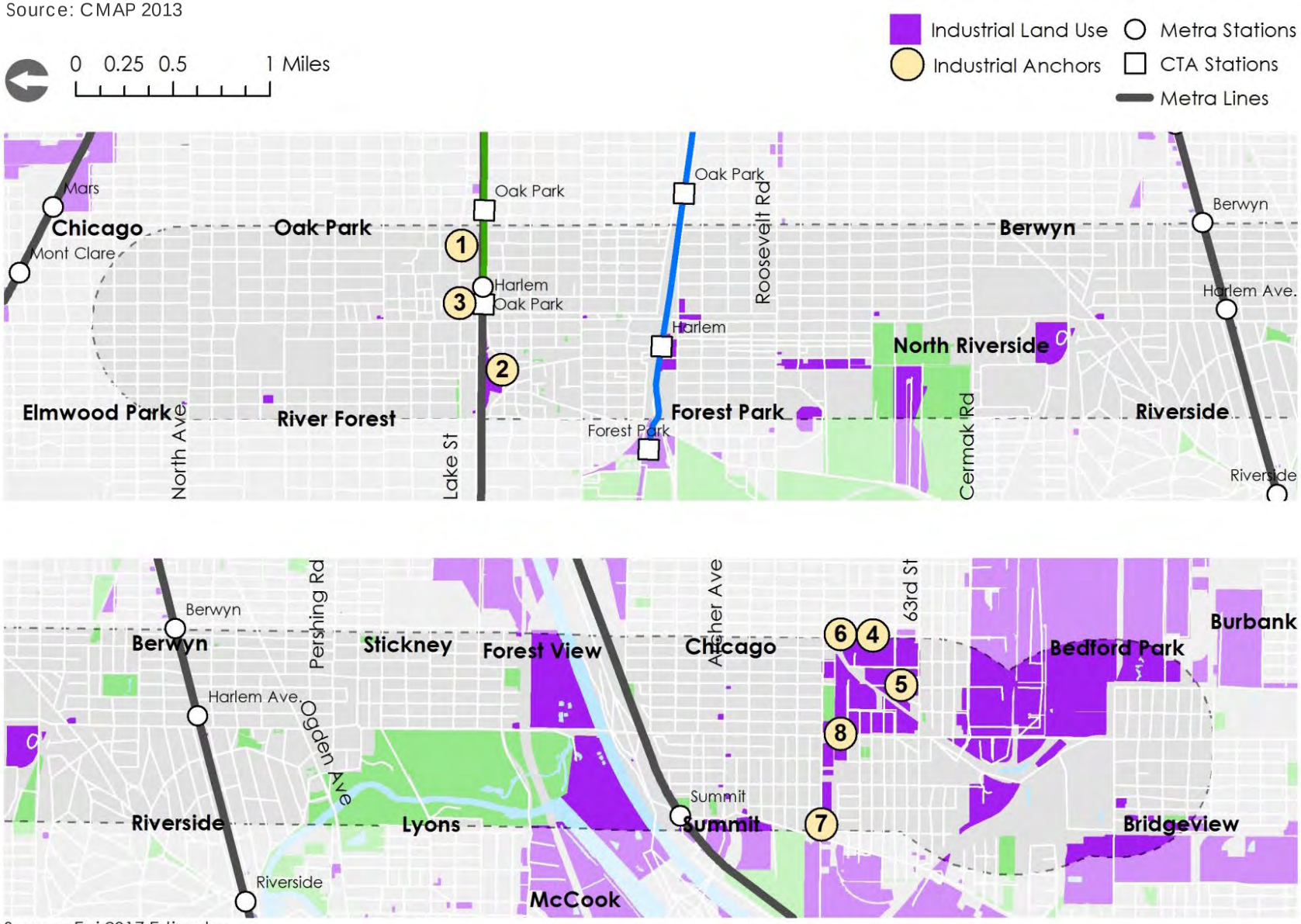
While the industrial inventory in the study area has not grown in recent years, it has locational advantages that could support future light manufacturing and distribution, including proximity to expressways and rail yards. The strong industrial market nationally and locally, particularly as it relates to warehousing and last-mile logistics, could spur future growth around the existing industrial clusters. These attributes make the Corridor ripe for mid-size industrial infill development.

An example of this type of infill industrial development was built in 2018 in nearby Cicero. Bridgepoint 290 is a 323,343 SF building located on 18.5 acres close to the Interstate on 54th Avenue. The project includes many features that are essential for modern industrial users, such as a wide floor plate, high ceilings, and multiple shipping and receiving docks. While built on a speculative basis, the building was leased before construction was complete.

Transit Implications

Heavy industrial is not particularly transit supportive especially when there is a disconnected street wall, heavy truck and/or train traffic, and emissions. Lighter industrial uses, however, could generate demand for transit, especially if they employ large numbers of low and moderate-income residents. Future industrial development in the southern portion of the Corridor could generate additional transit ridership.

Figure 65 - Industrial Land Use Map
Source: CMAP 2013



Source: Esri 2017 Estimates,
Chicago Metropolitan Agency for Planning 2013

Institutional / Recreation / Entertainment

The Central Harlem Avenue Corridor has a number of attractions that do not fall into the office, commercial, or industrial categories, but can be demand drivers for public transportation. From medical facilities to universities to trails and historic sites, the Corridor offers a variety of draws for Chicagoland residents.

Table 15: Institutional, Entertainment, and Recreational Anchors

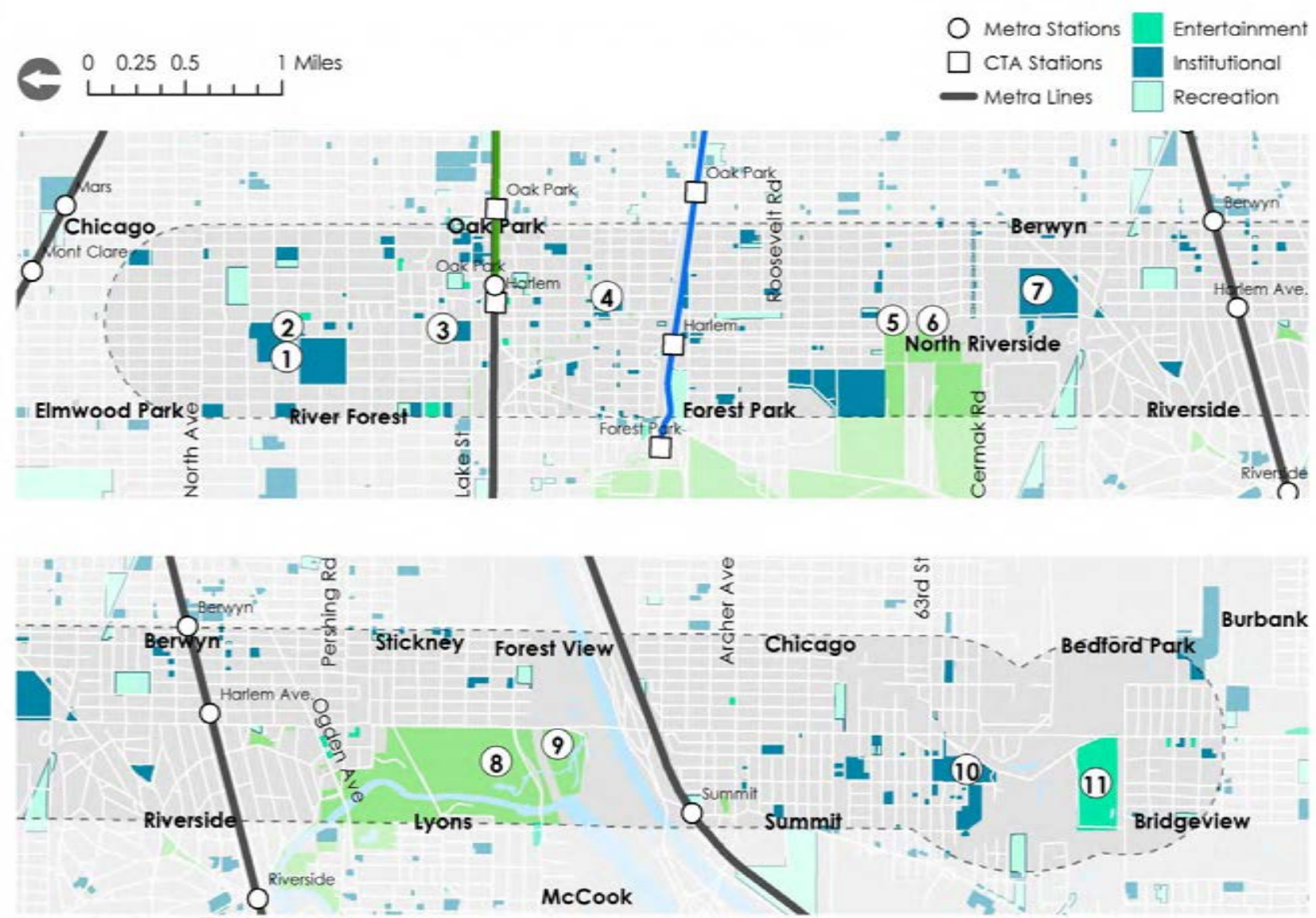
Map ID	Name	Type	Address	Community
1	Dominican University Priory School	University	7200 Division St	River Forest
2	Concordia University	University	7400 Augusta St	River Forest
3	Forest Preserve of Cook County General Headquarters	Institutional	536 N Harlem Ave	River Forest
4	Rush Oak Park Hospital	Medical	610 S Maple Ave	Oak Park
5	Cook County Health & Hospital Health Center	Medical	1800 Harlem Ave	North Riverside
6	Loyola Center for Health	Medical	1950 Harlem Ave	North Riverside
7	J. Sterling Morton West High School	High School	2400 South Home Ave	Berwyn
8	Ottawa Trail Woods	Recreation	200 W 47th St	Lyons
9	Chicago Portage National Historic Site	Recreation	4800 Harlem Ave	Lyons
10	Argo Community High School	High School	7329 W 63rd St	Summit
11	Toyota Park	Major League Soccer Stadium	7000 S Harlem Ave	Bridgeview

Source: Goodman Williams Group

Anchoring the southern end of the Corridor is Toyota Park, home to the Chicago Fire of Major League Soccer, which drew an average of approximately 17,400 fans per game for 17 regular season games during the 2017 season. The northern end of the Corridor is anchored by two universities, Dominican University and Concordia University, which have a combined enrollment of more than 9,000. Located between these strong anchors are a number of other uses that attract visitors to the area, including medical uses like Rush Oak Park Hospital, Morton West High School, and the Chicago Portage National Historic Site.

Ottawa Trail Woods Park and Cermak Woods, part of the Forest Preserves of Cook County, occupy 235 acres in Lyons. The Des Plaines River flows in a southerly direction through them. The Chicago Portage National Historic Site includes a commemorative statue and signage discussing the history of this area.

Figure 66 - Institutional, Entertainment, and Recreation Land Use Map
Source: CMAP 2013



Source: Goodman Williams Group 2018,
Chicago Metropolitan Agency for Planning 2013

Transit Implications

Some institutional and entertainment destinations generate significant transit demand, while others generate very little transit demand. For example, the universities in the corridor could be important anchors for future Pulse treatments along the Corridor. These land uses are generally very stable, and our team is not aware of any major planned changes to this category of development.

Future Development

Future development in the Corridor is likely to occur on or proximate to the following eight sites.

Table 16: Potential Redevelopment Sites

Map ID	Address	Community	Current Use	Acres	Existing Status
1	Toyota Park	Bridgeview	Stadium and surface parking	92.5	Active
2	Harlem & Cermak	North Riverside	North Riverside Plaza/Mall		Active
3	Harlem & Portage Creek	Forest View	Formerly industrial land	6.7	Inactive
4	1601 N Harlem Ave	Chicago	Vacant Sears building	5.2	For lease
5	6418 S Harlem Ave	Bridgeview	Used car lot	3.2	Active
6	1623 N Neva Ave	Chicago	Underutilized parking lot adjacent to Sears building	2.8	Inactive
7	7199 W 53rd St	Chicago	Vacant green space	1.8	Inactive
8	915 S Maple Ave	Oak Park	Former concrete plant	1.7	Inactive

Source: Goodman Williams Group and sources deemed reliable

The Toyota Park property includes nearly 100 acres. Additional programming at Toyota Park and the continued development of outparcels is imperative for the stadium's financial success. In 2018 a deal with event ticket marketplace and ticket aggregator SeatGeek was announced in tandem with a partnership between the Village of Bridgeview and SeatGeek. According to a press release, the two parties "will work together to bring more live programming to the venue, including premier concerts, music festivals and international sporting events."

Prior to this announcement, a master plan was created by The Lakota Group in 2003 for a mixed-use development surrounding the stadium, with multiple commercial buildings between Harlem Avenue and the stadium. There were also suggestions for landscaping improvements, practice stadiums and public plazas. While only the practice stadiums were completed, in 2015 a Circle K convenience store and a Shell gas station opened at the east end of the parking lot, accessible from Harlem Avenue. Recently, plans for a hotel have also been discussed, though not formally proposed.

Figure 67 - Toyota Park on game day - Flickr CC

As of August, 2018, Pace is in the process of completing a Park-n-Ride facility at the south end of Toyota Park and plans to re-direct service to and from the site.

North Riverside Park Mall, North Riverside Plaza, and some of the adjacent parking lots and out parcels are also likely redevelopment sites that might support additional retail / entertainment uses and perhaps some multifamily housing. A portion of the existing Sears in North Riverside Park Mall, for example, is being redeveloped as Round One, a family amusement complex.

The Sears store located at 1601 N Harlem was vacated in 2017, along with multiple other Sears closings across the country. Since then, Pace has released the North Avenue Corridor Plan, which made suggestions to combine the site with the former Budget Truck Rental, the underutilized parking lot located just east of the Sears site, as well as a short stretch of properties along North Avenue, east of Harlem. The land use plan showed 179 new rental units and 120,500 square feet of commercial space.

Figure 68 - Rendering of redevelopment of Sears site - Tucker Development

In April 2018, Tucker Development and Seritage Growth Properties entered a partnership to redevelop the vacant Sears store at North and Harlem. They hope to break ground in 2019 on a mixed-use project, with retail and both loft-style apartments and townhomes. The development is slated for the Sears site and the large parking lot on the same parcel (not the underutilized lot to the east). Unit counts and retail square footage have not yet been announced.

As redevelopment of the Sears site moves forward, it will likely spur redevelopment of the former Budget Truck Rental and the parking lot located just east of the site.

As mentioned in the industrial section of this report, there is a piece of land roughly 6.7 acres in size located just north of the Chicago Sanitary and Ship Canal and west of Harlem Avenue. The parcel is sandwiched between Metropolitan Water Reclamation District solids management facility and Portage Woods. This site is zoned for heavy industrial use and could be redeveloped as a new industrial facility or as a transportation / warehousing facility due to its proximity to the I-55 Corridor.


Figure 69 - Industrial site at Harlem / Chicago Ship & Sanitary Canal

Bordering Argo Summit Community High School and Harlem Avenue is a used car lot, Summit Auto Center. Hundreds of cars are parked on the 3.2 acre site, an unappealing neighbor for the high school and proximate residential properties. The used car lot also does not generate demand for additional commercial development or new transit facilities. After being cleaned up, the site could be a prime location for low-density infill multifamily housing. This could be very beneficial with a potential Pulse station at 63rd Street. However, any redevelopment would be complicated due to the jug-handle left turn roadway running through the site, as


Figure 70 - Used car lot at 6418 S Harlem

well as any future reconfiguration resulting from IDOT's study of Harlem Avenue between 63rd and 65th focused on grade-separating railroad crossings.[31]

Just south of I-55 is a vacant green space of nearly two acres which borders single-family residential. The site is slightly lower than Harlem Avenue, as this portion of Harlem is the beginning of the overpass over I-55 and the Chicago Sanitary and Ship Canal. Due to its unique location and the size of the site, the most likely future use for this site is low density residential - such as townhomes or single family housing. The site's address is 7199 W 53rd.

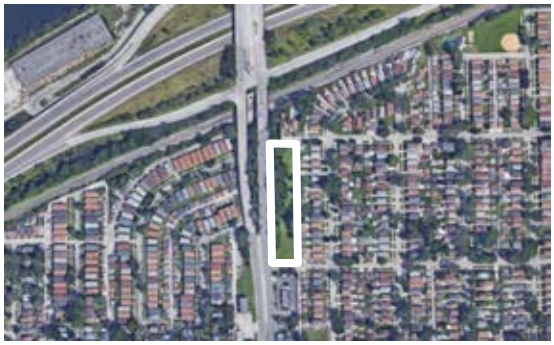


Figure 71 - 7199 W. 53rd

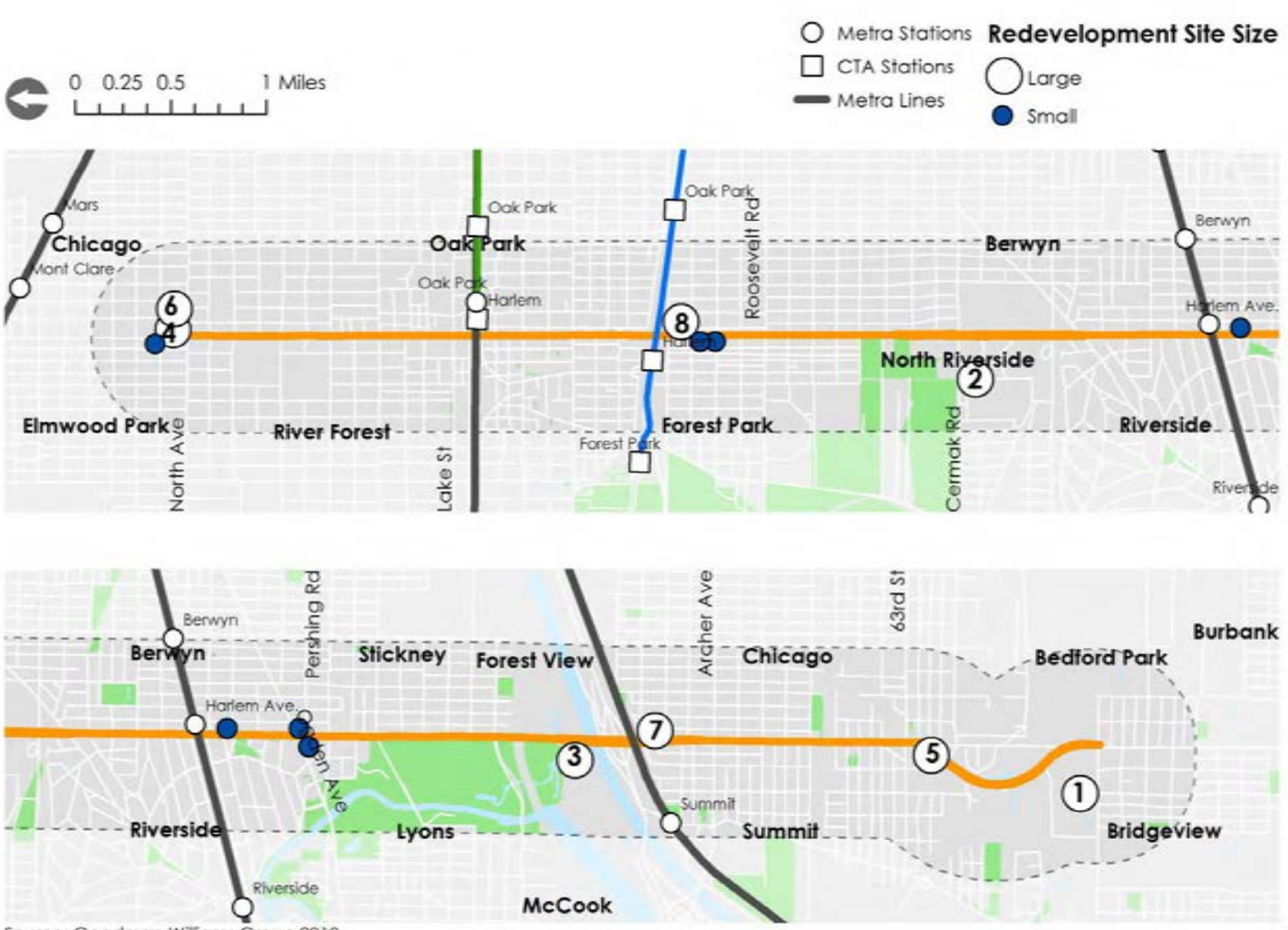
Immediately south of Interstate 290 in Oak Park is a former concrete plant, Mohr Concrete, which closed in February 2018. The Village reports that this site was subsequently sold, though development plans are unknown. The main portion of the site occupies nearly an entire block and is surrounded by residential, open space, and the Expressway. The former industrial use on the site was considered by many neighbors a nuisance. The site is currently zoned for commercial use, but due to its proximity to transit assets and the expressway, the future of this site could have a residential component. In addition to the main site running along Harlem, there is a smaller parking lot east of the main site that would likely be included in future development plans.

Figure 72 - Site of former Mohr Concrete plant

The Corridor also contains a number of smaller vacant or underutilized sites that could be redeveloped. These sites are identified on the following map with navy dots, together with the larger sites from the previous table. While small, these sites could be appropriate for infill residential or small-scale commercial developments.

[31] Please visit www.il43study.org for details of the concepts IDOT is considering in this vicinity.

Figure 73 - Potential Redevelopment Sites Map



Source: Goodman Williams Group 2018,
Chicago Metropolitan Agency for Planning 2013

Figure 74 - 939 S. Harlem Ave - A half-acre site for sale in Forest Park

While this Market Analysis section focuses on current trends within the existing real estate market, it is important to link this development to transit infrastructure and services. There should be a virtuous cycle between corridor development and transit service performance, where growing nodes near transit stations lead to higher-quality transit service and greater investment.

We anticipate changes to development patterns in conjunction with the introduction of Pulse rapid transit service. In areas the market opportunities align with transit's needs, transit-supportive development may occur naturally. In areas where development demand may be cooler or less transit-friendly, Pulse service may serve as a catalyst for positive change. Research on American Bus Rapid Transit corridors shows the following land development trends in areas near BRT stations:[32]

- Sales price premium of **7.6% for condominiums**. (Based on the Boston Sliver Line Washington Street Corridor)[33]
- Sales price premium of **$9,745 for single family homes** 100 ft from a station. (Based on the Pittsburgh East Busway)[34]
- **Faster job growth** than their central counties. These gains are concentrated in the manufacturing sector. [35]
- Growth in share of regional office space and multifamily apartment construction. **Office rents show a premium of 14% to 31%**. (Based on five US systems)[36]

The following section will present a typology of development patterns around Pulse station areas and describe the necessary design considerations for future development to be fully transit-supportive.

[32] Please note that Pulse arterial rapid transit service has many but not all features of Bus Rapid Transit.

[33] Perk, Victoria, Martin Catala, and Steven Reader. *Land use Impacts of Bus Rapid Transit: Phase II—Effects of BRT Station Proximity on Property Values Along the Boston Silver Line Washington Street Corridor*. Federal Transit Administration, 2012.

[34] Perk, Victoria, and Martin Catalá. *Land use Impacts of Bus Rapid Transit: Effects of BRT Station Proximity on Property Values Along the Pittsburgh Martin Luther King, Jr. East Busway*. Federal Transit Administration, 2009.

[35] Nelson, Arthur and Joanna Ganning. *National Study of BRT Development Outcomes*. National Institute for Transportation and Communities, 2015.

[36] Nelson, Arthur and Joanna Ganning. *National Study of BRT Development Outcomes*. National Institute for Transportation and Communities, 2015.

Station Area Development Typology

Given the varying nature of existing physical conditions, real estate market and economic dynamics, regulatory policies, and phased implementation of Pulse service, future improvements and redevelopment along the corridor will likely occur incrementally over time. Accordingly, a system of 'development typologies' is proposed as a way to provide guidance on the recommended character of new development adjacent to proposed Pulse Stations along the Harlem Avenue Corridor. Applied effectively, these typologies help to provide Pace planners, local municipal officials, business and property owners, and the development community with a better understanding of the desired character of each station area and help to identify potential opportunities for growth.

Existing Policy Context

The Central Harlem Avenue Corridor ('Study Area') is unique in that it is the physical border of several communities, as well as a connection point of multiple transportation services/networks such as Pace, CTA, and Metra. In addition to increasing intermodal connectivity, the transit network along Harlem Avenue provides an opportunity to further integrate land use and development policies between providers and constituent communities. In the case of CTA and Metra, a formal set of development typologies has already been prepared for their respective station areas, which provide an excellent platform from which to build.

CTA Station Area Typologies

CTA's Transit Friendly Development Guide – approved in November 2009 – provides guidance for future development around various transportation facilities within the City of Chicago. In the CTA Development Guide, a series of seven common 'Station Area Typologies' were identified with each having a distinct character based on a range of factors such as land use, development intensity, or economic position. Within a specific typological category, all station areas share common elements regardless of geographic location. A summary of each CTA typology – based on the CTA Development Guide profiles – is provided later in this report. The seven CTA Typologies include:

- Downtown Core (DC)
- Major Activity Center (MC)
- Local Activity Center (LC)
- Dense Urban Neighborhood (DN)
- Urban Neighborhood (UN)
- Service Employment District (SD)
- Manufacturing Employment District (MD)

Metra Station Area Typologies

In addition to CTA stations, the City of Chicago also studied the character and intent of Metra stations within its borders as part of the City of Chicago & Metra Station Area Typology Study that was approved by the Chicago Plan Commission in October 2014. This study builds upon the CTA typologies, and introduces two new typologies that were unique to Metra station areas. A summary of the two Metra-specific typologies – based on the Metra Typology Study profiles (pgs. 2, 20, 26) – is provided later in this report. The two Metra Typologies include:

- Low Density Neighborhood (LN)
- Mixed Residential / Industrial Neighborhood (RI)

Pace Place Types

While Pace does not have its own system of typologies for bus stops and transfer stations, the Pace Transit Supportive Guidelines ('Guidelines') do present a brief synopsis of the types of places in which Pace operates. The general character of these nine 'place types' are defined in the Guidelines (pgs 25-33) as follows:

- **Traditional Downtown** – Traditional downtowns that typically include zero setback development, relatively narrow travel lanes, on-street parking, a strong orientation towards pedestrian mobility, and central destinations.
- **Urban & Suburban Neighborhoods** – Urban and suburban neighborhoods that include a variety of housing densities, block sizes and patterns, and level of access to peripheral connector and arterial streets.
- **Traditional Corridor** – Traditional corridors that frequently provide moderate travel speeds, a balanced focus on vehicular and pedestrian mobility, and a broad mix of commercial and residential uses.
- **Suburban Corridor** – Suburban corridors that typically foster regional mobility, focus primarily on vehicular mobility, and host a variety of commercial uses of various sizes and complexities.
- **Bus/Multi-Modal Transit Centers** – Bus/multi-modal transit centers that provide transfer opportunities for riders, offer stopover facilities for drivers, and may be integrated into other developments or uses.
- **Commuter Rail Station** – Commuter rail stations that provide for direct transfers between bus and commuter rail service, and may be integrated into other developments or place types.
- **Local Retail Center** – Local retail centers that provide central destinations along corridors, host local commercial uses, and focus primarily on vehicular accessibility.
- **Regional Retail Center** – Regional retail centers that occupy large tracts of land, host regional and local commercial destinations, and foster the possibility of on-site transit facilities.
- **Industrial or Office Campus** – Industrial or office campuses that include significant employment centers, minimal retail or residential uses, and could possibly accommodate on-site transit or shuttle operations.

Though useful in helping to understand the physical character and context that Pace operates in, the Place Types are not used to structure other policies or guidelines in the Transit Supportive Guidelines document and therefore are not appropriate for assigning typologies for Pulse station areas. To help correlate the land use policies of CTA, Metra, and Pace – all of which operate within the Study Area – and enable greater synergy between each of these agencies and their various modes of transit, the following chart provides a general analysis of how Pace's Place Types might translate into CTA/Metra typologies. Note that due to the general nature of the Place Types, they may fall within several Typology categories or may require assumptions on future growth to meet the typology definitions. It is also important to note that not all CTA and Metra Typologies may be present along Harlem Avenue.

Table 17 – Comparison of Pace Place Types and CTA/Metra station typology

Pace Place Type	CTA/Metra Typology									Comments
	DC	MC	LC	DN	UN	LN	SD	MD	RI	
Traditional Downtown	■	■	■							Category will depend on scale; Downtown Core applies only in vary limited cases.
Urban & Suburban Neighborhoods				■	■	■			■	Varies by density and scale.
Traditional Corridor			■	■	■	■				Station location and land use mix will influence category.
Suburban Corridor			■			■	■			Station location and land use mix will influence category. Infill development may be required to meet standards.
Bus/Multi-Modal Transit Centers										Not applicable as a typology
Commuter Rail Station										Not applicable as a typology
Local Retail Center			■							Residential infill required to meet standard.
Regional Retail Center		■								Residential infill required to meet standard.
Industrial or Office Campus							■	■	■	

The following pages will describe in more detail the five station area types relevant to the Central Harlem Avenue Corridor.

MC Major Activity Center

Description

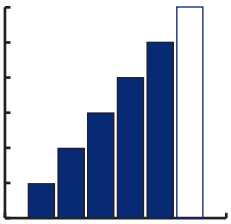
This typology encompasses the station areas serving a relatively wide range of densities, urban forms, and land uses. This type of area is intended to be developed at a significant density that supports and provides services for the region and nearby neighborhoods. These areas are outside Chicago's downtown core and provide high levels of employment, especially in the retail sector, and can include special uses like university campuses and mixed-use centers.

Land Use

Commercial Types

Integrated retail, some large floor plates

Desired Scale



high

Employment Types

Zoning Benefits

- Floor area ratio bonus
- Greater height
- Increase density
- Lower minimum land area
- Lower parking ratios

Housing Types

Mid-, high-rise

Connectivity

Connect to surrounding uses, vertical direct access.

Public Space

- Urban plazas
- Courtyards

Concessions

Significant retail in station and integrated with adjacent buildings

**Source: Chicago Transit Friendly Development Guide, 2009*

LC Local Activity Center

Description

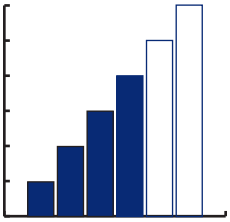
This category includes the station areas that exist in the centers of identifiable neighborhoods. This type is focused on supporting the surrounding area or community. These centers have a mixture of higher intensity land uses and are noticeably denser than the neighborhoods that surround them providing a mix of employment in retail, service, and other sectors. Some of these centers will have civic and community uses, but this is not a defining characteristic of these areas.

Land Use

Commercial Types

Local serving, retail adjacent to station

Desired Scale



Medium

Employment Types

Zoning Benefits

- Floor area ratio bonus
- Greater height
- Increase density
- Lower minimum land area
- Lower parking ratios

Housing Types

Various

Connectivity

Connect to adjacent uses and to surrounding neighborhoods.

Public Space

- Plazas
- Pocket Parks

Concessions

Significant retail in station and integrated with adjacent buildings

**Source: Chicago Transit Friendly Development Guide, 2009*

LC Local Activity Center

Development & Design Guidelines

Metra BNSF Station Area

Land Use & Development

- Context appropriate, low to mid-rise development (2 to 4-stories)
- Horizontal & vertical use integration, with upper-story office & residential.
- Active ground floor commercial uses, with emphasis retail & dining.
- Parking provided in rear of buildings or ground-floor structured. On-street parking for commercial use.
- Consistent building setbacks located close to back of right-of-way.

Urban Design

- Enhanced 'Main Street' streetscape character with decorative lighting, planters, public art, seating, and strategic use of decorative paving.
- District branding including banners, local business signage, & wayfinding elements,
- Wide sidewalks with space for seating & dining – employ setbacks when R.O.W. space is lacking.
- Provide street trees in grates or decorative beds.

Transit & Connectivity

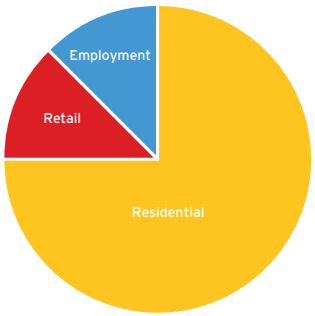
- Highly-visible pedestrian crossings & bike signage.
- Foster multi-modal connectivity where possible.
- Limit curb cuts along primary frontages

UN Urban Neighborhood

Description

This type includes station areas in well-established, primarily residential neighborhoods where retail development exists primarily to support the immediate area. The urban neighborhoods are often a mix of multifamily buildings immediately around the station and single-family homes on surrounding streets. This type also may include station areas with neighborhoods that have infrastructure such as an expressway, an intermodal, park-and-ride facility, or other features. Nonetheless, these neighborhoods remain meaningful and are identifiable and walkable with good access to transit.

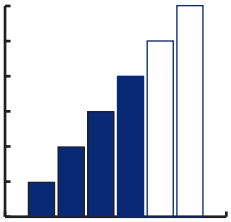
Land Use



Commercial Types

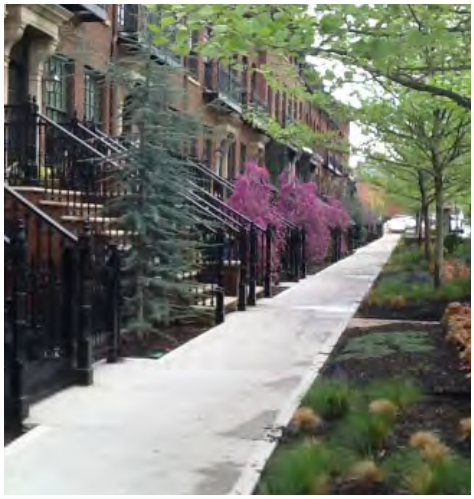
Concentrated retail adjacent to station

Desired Scale



Medium

Employment Types



Zoning Benefits

- Increase density
- Lower minimum land area
- Lower parking ratios

Housing Types

Mid-, low-rise

Connectivity

Connect to neighborhoods.

Public Space

- Plazas
- Parks
- Landscape opportunities

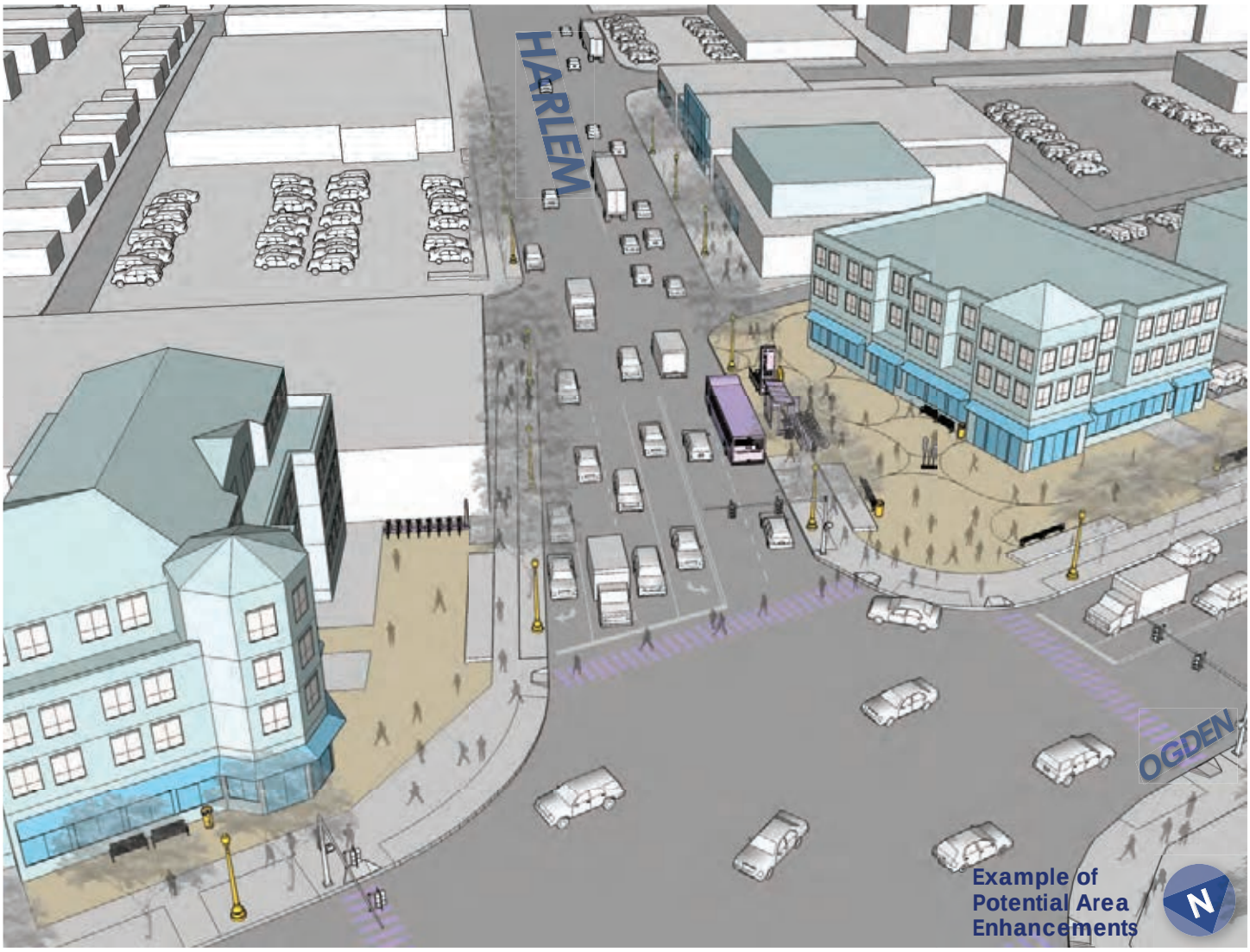
Concessions

- Small retail shops
- Kiosks
- Vending

UN Urban Neighborhood

Development & Design Guidelines

Ogden Avenue Station Area



Example of Potential Area Enhancements

Land Use & Development

- Prioritize residential infill, rehabilitation, or redevelopment on auto-dominated properties.
- Horizontal integration of uses.
- Focus commercial use near Pulse stations and key intersections.
- Allow deeper building setbacks with suitable landscape buffers.
- Parking in the rear or side of buildings; use of on-street parking as a buffer.
- Buildings should face primary corridors – “eyes on the street”.

Urban Design

- Pedestrian-scaled streetscape enhancements – lighting, modest neighborhood signage, trees in decorative beds or tree lawns.
- Buffer parking lots with decorative landscaping.
- Use of building setbacks to create small neighborhood-scaled open spaces, plazas & pockets parks.

Transit & Connectivity

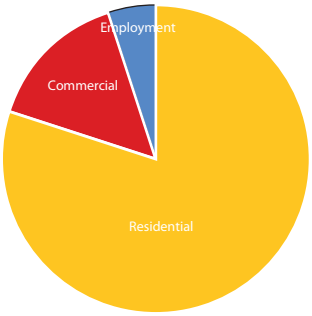
- Emphasis on pedestrian comfort and walkability.
- Highly visible crosswalks
- Restrict or combine curb cuts on primary frontages

LN Low Density Neighborhood

Description

This is one of two new typologies that has been created for Metra stations. With more than three quarters of the land use devoted to residential, a low density neighborhood has a strong residential character with minimal retail and employment uses around station areas.

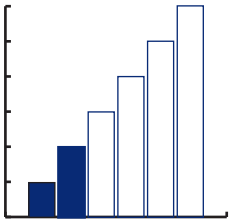
Land Use



Commercial Types

Concentrated retail adjacent to station

Desired Scale



Low

Employment Types

Zoning Benefits

- Lower parking ratios
- Accessory/Live-work units

Housing Types

Low-rise

Connectivity

Connect to neighborhoods.

Public Space

- Plazas
- Parks
- Landscape opportunities

Concessions

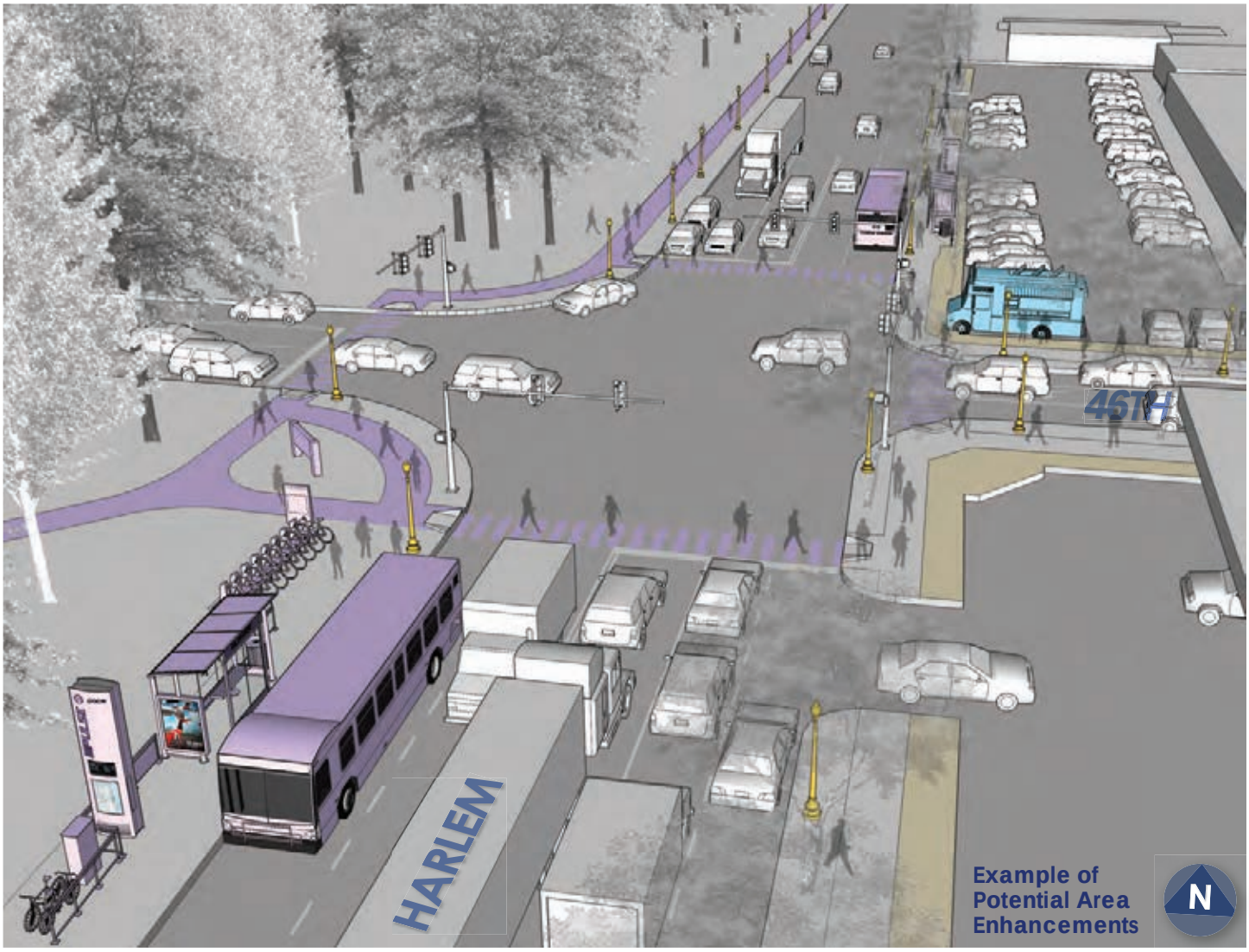
- Small retail shops
- Kiosks
- Vending

**Source: City of Chicago & Metra Station Typology Study, 2014*

LN Low Density Neighborhood

Development & Design Guidelines

46th/47th Street Station Area



Land Use & Development

- Prioritize context appropriate, locally-serving commercial, service, and residential uses.
- Focus commercial use near Pulse stations and key intersections.
- Setbacks may vary – encourage coordination of frontage conditions for neighboring buildings.
- Parking in the rear or side of buildings. When in front, add perimeter landscaping buffers.
- Allow informal commercial uses – food trucks, kiosks, pop-up shops.

Urban Design

- Modest streetscape enhancements, concentrate amenities near Pulse stations.
- Consistent pedestrian-scale lighting.
- Street trees in wide tree lawns or low-maintenance planting buffers.

Transit & Connectivity

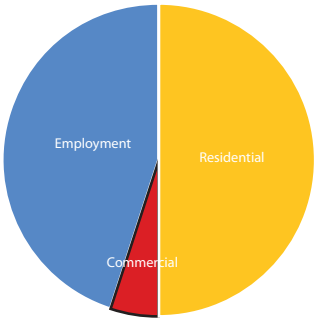
- Prioritize infill of missing sidewalks.
- Well marked cross-walks at intersections
- Trail & wayfinding signage
- Emphasis on walkability, convenience, and safety for bicyclists and pedestrians.

RI Mixed Residential / Industrial Neighborhood

Description

This is one of two new typologies that has been created for Metra stations. While residential use is usually the predominant land use, industrial related uses are also a significant component of the neighborhood. The residential aspect plays a major role in the fact that almost half of commuters access RI stations on foot or by bike.

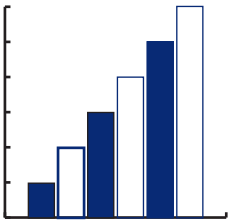
Land Use



Commercial Types

Concentrated retail adjacent to station or major corridors

Desired Scale



Various

Employment Types

manufacturing

Zoning Benefits

- Lower parking ratios

Housing Types

Mid-, low-rise

Connectivity

Connect to neighborhoods.

Public Space

- Parks
- Landscape opportunities

Concessions

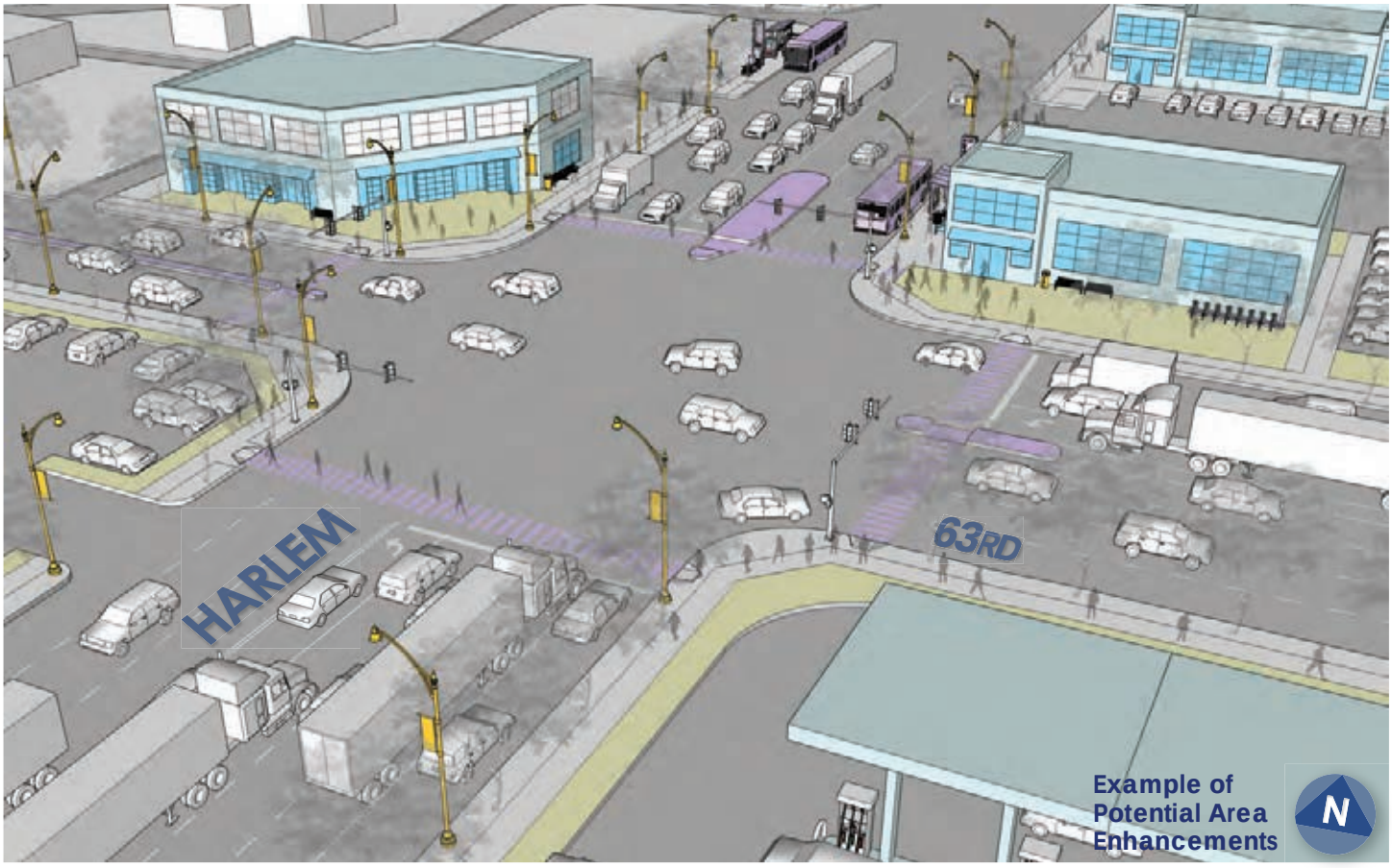
- Small retail shops
- Kiosks
- Vending

**Source: City of Chicago & Metra Station Typology Study, 2014*

RI Mixed Residential / Industrial Neighborhood

Development & Design Guidelines

63rd Street Station Area



Land Use & Development

- Generally low-rise development, mix of densities and scales possible.
- Maintain consistency of form and character within distinct areas.
- Focus commercial use near Pulse stations, key intersections, and along busy corridors.
- Encourage redevelopment or transition from industrial to commercial use at key intersections.
- Building entrances and/or primary facades should 'address' the street.
- Parking in the rear or side of buildings, or behind adequate landscape buffers when in front.

Urban Design

- Simple streetscape enhancements – overall goal of proper buffering and transitions between uses.
- Incorporate gateway or district signage & elements at major entrances to districts and communities.
- Ensure streets and right-of-ways are well lit.
- Street trees in tree lawns or low-maintenance buffers.
- Setbacks may vary, coordinate frontage conditions and ensure adequate buffering.

Transit & Connectivity

- Emphasis on pedestrian safety & comfort – use bump-outs, median refuges, and proper buffers.
- Highly visible crosswalks at intersections
- Clear directional signage for non-local traffic

Central Harlem Avenue Corridor Typologies

Using the policy framework described above, formal typology designations can be applied to the areas where Pulse stations are under consideration. However, these classifications are not based solely on the existing conditions of the proposed station areas, but are also related to the inherent nature of Pulse rapid transit service, as well as the potential growth or change that Pulse might inspire.

For example, a key component of Pulse service is the use of fixed stations that require a direct capital investment into permanent transportation infrastructure. In doing so, this sends a signal to business and property owners of nearby properties that they too should feel confident in reinvesting or developing within the station area. It also sets an expectation that a significant number of riders – and therefore residents or patrons – will consistently use the service. In some instances, this ridership base already exists, while in others it may need to be fostered through new development. In the instances where prevailing land use patterns are more suburban in nature due to low density levels or a limited number of land use types, infill development or redevelopment within station areas may be desirable to reinforce the market for Pulse service.

Encouraging mixed-use development or other forms of transit-supportive development, as well as increasing density near transit service nodes are important policy goals established in Pace's Transit Supportive Guidelines, and serve as the underlying basis for the following Harlem Avenue Pulse Station Typology designations.

Figure 75 – Map showing typology of candidate Pulse station locations

Key Station Area Typology Considerations

The following is a brief outline of the critical factors and considerations upon which the Harlem Avenue Station Area Typologies are based.

1. **North Avenue Station Area** – *Local Activity Center*
   - The plan to redevelop the former Sear's property as a mixed-use development provides desirable land use mix, including introduction of multi-family housing units.
   - Denser office development to the west in Elmwood Park, and connectivity with planned North Avenue Pulse serve, reinforce station's importance as local activity center.

2. **Division Street Station Area** – *Urban Neighborhood*
   - Predominance of residential use at three-stories or less, and limited retail.
   - A mix of large institutional uses and existing single-family homes within the station area limit opportunities for increased density through redevelopment.
   - Redevelopment or reuse of corner sites with auto-oriented uses and/or surface parking lots would improve character of station area.

3. **Chicago Avenue Station Area** – *Urban Neighborhood*
   - Predominance of residential use at three to four-stories or less, with ground floor retail near the main intersection.
   - Opportunities for redevelopment of the auto-serving commercial uses at the corner of Chicago & Harlem, and along Harlem Avenue, may exist.
   - Beyond Harlem Avenue, dramatic redevelopment activity within the existing established neighborhood areas is unlikely to occur.

4. **Circle Avenue/South Boulevard Station Area** – *Major Activity Center*
   - Station area includes Downtown Oak Park and multi-modal transit connectivity.
   - Based on development trends in Oak Park and transit connectivity, potential for extensive redevelopment of low-density shopping centers located west of Harlem may exist. If redevelopment is desired, updates to existing zoning policies may be necessary to enable – and potentially incentivize – development opportunities.

5. **Madison Street Station Area** – *Local Activity Center*
   - Significant neighborhood-serving commercial use, several institutions/employment areas, and high proportion of multi-family residential development.
   - Opportunities for redevelopment may exist near primary intersection on vacant lots or parcels with low-density, auto-oriented uses. Zoning policies may need to be revisited to enable and encourage enhancements on properties fronting Harlem Avenue within the Station Area.

6. **CTA Blue Line Harlem Station Area** – *Mixed Residential / Industrial Neighborhood*

   - Predominance of low-rise multi-family use to the north, and mix of industrial or auto-oriented businesses to the south.
   - Future reclassification of the Station Area as an Urban Neighborhood or Local Activity Center could occur; however, it would require extensive redevelopment of industrial/light industrial areas south of the Eisenhower Expressway.
   - Potential for redevelopment is bolstered by the Station Area's extensive connectivity.

7. **Roosevelt Road Station Area** – *Urban Neighborhood*

   - Commercial use fronts primary corridors with mix of single-family and low-rise multi-family development on surrounding blocks.
   - Conversion of parcels immediately adjacent to Harlem/Roosevelt intersection into more pedestrian-oriented development would have significant benefits to the visual quality and overall pedestrian character of the Station Area.
   - Current zoning policies for properties within the Station Area should be reviewed to determine if they reflect the intended character of the Urban Neighborhood typology.

8. **16th Street Station Area** – *Urban Neighborhood*

   - Limited commercial use fronting primary corridors with mix of single-family and low-rise multi-family development on surrounding blocks.
   - Urban design enhancements along public frontages, including improved landscape buffers along surface parking lots, would provide dramatic improvements to overall character of the Station Area.
   - Current zoning policies for properties within the Station Area should be reviewed to determine if they reflect the intended character of the Urban Neighborhood typology.

9. **Cermak Road Station Area** – *Major Activity Center*

   - Intensity of commercial use makes this an important destination within the Corridor.
   - Overabundance of surface parking and single-use, suburban development may limit access to of Pule Rapid Transit service.
   - To improve pedestrian character and increase residential or employment density within the Station Area – as is appropriate to the Major Activity Center typology – encourage infill development on large surface parking lots, and examine opportunities for mixed-use redevelopment of auto-dominant uses near proposed Pulse Stations. Changes to, or variations from, existing zoning policy may be required to accommodate the vision of Cermak Road Station Area as a Major Activity Center.

10. **26th Street Station** – *Urban Neighborhood*

- Station Area features a wide range of uses, however, under current conditions a large portion of Pulse ridership will be generated from the well-established neighborhood areas south of the Station, and potentially Sterling Morton West High School students.
- Alignment of zoning policies on the east and west sides of Harlem Avenue is encouraged to help enhance non-conforming properties on the west side of Harlem (Riverside), and preserve the pedestrian-oriented character on the east side (Berwyn).
- Major commercial uses to the northwest – notably CostCo and North Riverside Plaza and North Riverside Park Mall – increase activity within the Station Area, but these locations may not be heavily used by Pulse riders.
- Modest infill or redevelopment potential may exist on auto-oriented or under-utilized sites immediately fronting Harlem Avenue, and could provide opportunities to increase residential density within the area.
- Major changes or extensive redevelopment activity on the North Riverside Mall property could potentially lead to a reclassification of the area as a Local Activity Center.

11. **Metra BNSF Line Harlem Station Area** – *Local Activity Center*

- Local commercial district centered on Metra station.
- Future development should strive to increase intensity of land use and residential density through mixed-use development. Existing zoning policies should be reviewed to ensure that appropriate policies are in place to enable full realization of the Local Activity Center typology character.
- Within the immediate station area, redevelopment of low-density residential properties into multi-family housing should be allowed and encouraged.
- Re-examination of zoning standards

12. **Ogden Avenue Station Area** – *Urban Neighborhood*

- Commercial uses within the immediate station area are largely auto-oriented in nature, though several redevelopment opportunities may exist. Increased residential density and greater emphasis on pedestrian-oriented commercial development would help to formalize the neighborhood character suggested by the Urban Neighborhood typology.
- Should extensive redevelopment activity occur in the Station Area, including the introduction of additional office and commercial uses that boost employment local levels and draw in visitors, the area may qualify as a Local Activity Center.
- Exising commercial zoning policies in Stickney may not support the intended Urban Neighborhood character, or allow for future redevelopment to occur in a manner befiting a Local Activity Center.

13. **41st Street Station Area** – *Urban Neighborhood*

- The majority of station area is single-family development and forest preserve land with limited opportunities for redevelopment. Small, multi-family residential buildings front much of the Harlem Avenue corridor, which support the Urban Neighborhood characterization. Note that existing residential uses may not be supported by current zoning policies.
- Limited commercial use along Harlem is more locally-oriented in nature, however there are some larger commercial uses north of the proposed Pulse Stations, including an auto dealership, Jewel Osco, and a shopping center anchored by Marshalls and an Xsport Fitness.

14. **46th/47th Street Station Area** – *Low Density Neighborhood*

- The majority of the Station Area is single-family development or forest preserve land, with only limited opportunities for increased residential density through redevelopment.
- Within the Station Area, commercial use does exist along Harlem Avenue, however it is somewhat limited in scale and is more locally-oriented in nature. In stakeholder interviews with representatives from the Village of Stickney, it was noted that there is a desire to see additional commercial development in the area, including a transition away from residential use along Harlem Avenue. The potential for significant increases in intensity of use may be limited though, due to the size limitations of corridor fronting parcels, lower visibility than other prominent intersections, and generally low levels of residential density in the immediate area. Existing zoning policies should be reviewed to ensure that an appropriate and improved character can be achieved.

15. **Stevenson Expressway Station Area** – *Low Density Neighborhood*

- While a mix of land uses exist around the proposed Station Area, Pulse service at this station will largely be supported by residential use. Future connectivity with Express Bus service on the Stevenson Expressway – via transfer station – could enable further increases in ridership at this Station and potentially boost overall transit use in the surrounding neighborhoods.
- The neighborhoods immediately south of the Station Area do represent modest residential densities – including pockets of low-rise, multi-family development west of Harlem – however, the realized population density of the Station Area is low due the existence of the Stevenson Expressway, I & M Canal, and industrial use to the north.

16. **Archer Avenue Station Area** – *Local Activity Center*

- Though aspirational in nature, classification of the Archer Avenue Station Area as a Local Activity Center is based on the potential offered by a combination of higher than average residential and employment densities in/around the Station Area, and significant AADT counts on both Harlem and Archer Avenues. To achieve this potential, zoning policies governing use, intensity, and site development standards may need to be better coordinated on both sides of Harlem Avenue.
- Commercial uses occupy most of the properties fronting these two arterials, which feature a mix of auto-oriented and pedestrian-oriented development patterns. In light of the area's potential, many of the commercial properties within the Station Area appear under-developed. This provides an opportunity to enhance the area's physical conditions and realize the future potential of the Station Area.
- Outside of the commercial uses that front Harlem and Archer, the rest of the station area is composed of established single-family neighborhoods that may not be as likely to change in the foreseeable future. As a result, the best opportunities to increase residential density within the station will come in the form of mixed-use infill development, and the redevelopment of single-family homes that front the two arterials.

17. **63rd Street Station Area** – *Mixed Residential / Industrial Neighborhood*

- This Station Area is generally split between employment generating uses and single-family neighborhoods, which allows for high levels of activity, but a somewhat incongruous physical character.
- Commercial uses do exist near the Harlem Avenue and 63rd Street intersection, however these are auto-oriented and not particularly well suited to pedestrians. Redevelopment of some of these parcels, or physical enhancements along their public frontages will provide significant benefits to the overall quality and character of the Station Area.
- Coordination of zoning policies governing use, intensity, and site development standards – especially on residential and commercially-zoned properties – may need to be better coordinated on both sides of Harlem Avenue.

18. **71st Street Station Area** – *Mixed Residential / Industrial Neighborhood*

- At present, the proposed Station is defined by a mix of residential and employment uses, as well as Toyota Park/SeatGeek Stadium parking lots.
- Should plans to develop and revitalize much of the surface parking on the Toyota Park property as a mixed-use or entertainment center be realized, the Station Area character could likely qualify as a Major Activity Center. In this scenario, greater integration of Pulse service and new development is highly recommended.
- Reclassification of zoning on the Toyota Park property, and/or the designation of the property as a Planned Development will likely be required if significant redevelopment is desired in the future.

Implementation Summary

Expanding access to transit and developing the potential station areas needed to successfully implement arterial rapid transit services along the Central Harlem Corridor will require substantial coordination between Pace and the communities and stakeholders along the corridor. This final section outlines strategies for working with the corridor stakeholders so improvements can be successfully implemented in order to prepare the corridor for future Pulse service.

Implementation Partners

Pace's partners for making improvements within the Central Harlem Avenue Corridor include the Illinois Department of Transportation (IDOT), which maintains jurisdiction of the roadway, and the 14 distinct municipalities along the study area.

Local communities can leverage various tools to improve transit accessibility, pedestrian travel, and safety in the corridor. Municipalities can work with developers to influence the character of different parts of their community and to request accessible features in new development. Municipalities can also work with IDOT to request multimodal improvements that might not otherwise be included in roadway projects. To prepare for potential future Pulse stations, Pace should partner with local municipalities as well as developers to preserve right of way for future stations.

Pace should also partner with IDOT regarding their current and future plans for roadway projects within the study area. Pace should provide comments on roadway design to ensure recommendations proposed in this plan are included in final design elements for roadway projects.

Implementation Schedule

Near-term improvements can be made by coordinating with IDOT and municipalities for projects that are already planned or are in the design phase along Harlem Avenue. Pace should work with project sponsors to ensure that the implementation recommendations are included in design elements of projects.

Mid- and long-term improvements described in this report can be accomplished through joint grant funding applications between Pace and individual communities or as a corridor-wide projects. Individual funding source requirements would dictate who would lead the application effort. Community coordination is needed for the long-term planning, right of way and development of future Pulse stations.

Implementation Funding Resources

Multiple funding options may be available to assist in the overall implementation of the tools and recommendations for the corridor.

- Congestion Mitigation and Air Quality (CMAQ)

  This program funds projects that benefit regional air quality and reduce auto emissions. Eligible projects include transit improvements, traffic flow improvements and bicycle/pedestrian projects. These projects are funded at 80% of project costs.

- Illinois Transportation Enhancement Program (ITEP)

  Administered by IDOT, ITEP is used for projects that enhance pedestrian and bicycle facilities. Funding reimbursement is available for up to 50% of the cost for right-of-way and 80% for preliminary and final engineering and construction costs.

- Transportation Alternatives Program (TAP)

  This federally-funded program is administered by the Chicago Metropolitan Agency for Planning (CMAP) for surface transportation improvements designed to support non-motorized transportation. Bicycle facility projects are selected through a competitive process. Projects selected through this program qualify for up to an 80% federal match.

- Surface Transportation Program (STP)

  Local Councils of Mayors fund road improvement and reconstruction projects on federally eligible routes. This corridor runs through the jurisdiction of three councils of mayor, North Central, Central and Southwest. These councils fund projects at different levels from 70% up to 80%. The next call for projects will occur in 2020.

- Surface Transportation Program Local Regional Fund

  A new funding option available beginning in 2019 will be the STP Local Regional Fund and will be administered by CMAP. Eligible projects include road contraction, bridges, bicycle/pedestrian improvements, and transit related projects. Projects must be over $5 million or involve three project partners.

- Access to Transit Program

  This grant program from the RTA provides funding for small-scale capital projects that improve access to the regional transit system for pedestrians and bicyclists. Any community that is a part of this plan will be eligible to apply for funding to improve the bike and pedestrian environment along the corridor. The grant may pay for multi-modal transit access improvements such as sidewalks, crosswalks, bus shelters, bike parking, pedestrian signal heads, and others. One additional benefit of this program is that RTA pays the local match and handles the application process.

Table 18 – Implementation Matrix for Elmwood Park

Improvement Options	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations North Avenue • Westbound at North Avenue far side	Further study and public outreach needed	Pace	CMAQ	Long-term
Intersection Enhancements North Avenue • Use high visibility crosswalks • Enhance pedestrian refuge islands	Village would need to lead study and IDOT request for refuge island	Elmwood Park IDOT	MFT STP CMAQ	Mid-term
Development Character 1630 N Harlem • Encourage development fitting the Local Activity Center character	Guide developers to promote transit-supportive development near stations.	Chicago	Staff effort	Long-term
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators		Elmwood Park IDOT	CMAQ STP	Mid-term

Table 19 - Implementation Matrix for Chicago Ward 29

Improvement Options	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations North Avenue • Northbound Harlem at North Avenue far side (near Sears)	Further study and public outreach are needed. Work with the developer for the Sears site.	Pace	CMAQ	Near-term
Intersection Enhancements North Avenue • Use high visibility crosswalks • Enhance refuge islands	City would need to lead study and IDOT request for refuge island	Chicago IDOT	MFT STP CMAQ	Mid-term
Development Character Former Sears Site • Encourage development fitting the Local Activity Center character	Guide developers to promote transit-supportive development near stations.	Chicago	Staff effort	Near-term
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators		Chicago IDOT	CMAQ STP	Mid-term

Table 20 – Implementation Matrix for Chicago Ward 23

Improvement Options	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations Archer Avenue • Northbound Harlem at Archer Avenue near side (near Aldi) • Northbound Harlem at Archer Avenue far side (near Walgreens) 63rd Street • Northbound Harlem at 63rd Street far side (near Adam's Auto Sales) • Northbound Harlem at 63rd Street far side (near CubeSmart)	Further study and public outreach are needed.	Pace	CMAQ	Mid-term
Intersection Enhancements Archer Avenue • Enhance refuge islands • Repaint high visibility crosswalks 63rd Street • Create median refuge islands • Use high visibility crosswalks 65th Street • Add high visibility crosswalks • Create raised medians for pedestrian refuge	Coordinate with Summit and Bedford Park	Chicago IDOT	MFT STP CMAQ	Mid-term
Development Character 7199 W 53rd St • Encourage development fitting the Low Density Neighborhood character	Guide developers to promote transit-supportive development near stations.	Chicago	Staff effort	Long-term
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators 63rd Street • Railroad grade separation study	Coordinate with existing CREATE study to ensure pedestrian transit access and walkability are not limited or reduced	Chicago IDOT CREATE	CMAQ STP Federal	Mid-term Long-term

63rd Street to 71st Street • Add sidewalk along east side of Harlem				
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators		Chicago IDOT	CMAQ STP	Mid-term

Table 21 – Implementation Matrix for River Forest

Improvement Options	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations North Avenue • Southbound Harlem at North Avenue far side (near Shell) • Southbound Harlem at North Avenue far side (near residences) Division Street • Southbound Harlem at Division Street near side (near Dominican University) • Southbound Harlem at Division Street far side (near 7-Eleven) Chicago Avenue • Southbound Harlem at Chicago Avenue near side (near TCF Bank) • Southbound Harlem at Chicago Avenue far side (near Mobil gas station) CTA Green Line Station • Southbound at Central Avenue near side	Further study and public outreach needed Work with the property owners	Pace River Forest	CMAQ	Long-term
Crosswalks Greenfield Street • Add crosswalk • Curb extension on east side	Work with University for access Village would need to study and request crosswalk addition	River Forest Oak Park Dominican University IDOT	MFT	Mid-term
Intersection Enhancements North Avenue • Use high visibility crosswalks • Enhance pedestrian refuge islands Division Street • Curb extension on northwest corner • Use high visibility crosswalks Chicago Avenue • Consolidate gas station driveways on southwest corner • Use high visibility crosswalks	Village would need to lead study and IDOT request for refuge island Work with business owners	River Forest IDOT	MFT STP CMAQ	Mid-term

Development Character TCF Bank Site (at Chicago Avenue) • Encourage development fitting the Urban Neighborhood character	Guide developers to promote transit-supportive development near stations.	River Forest	Staff effort	Long-term
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators		River Forest IDOT	CMAQ STP	Mid-term

Table 22 – Implementation Matrix for Oak Park

Improvement Options	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations Division Street • Northbound Harlem at Division Street far side Chicago Avenue • Northbound Harlem at Chicago Avenue near side (near Denny's) • Northbound Harlem at Chicago Street near side (near BP gas station) CTA Green Line Station • Northbound Harlem at North Boulevard far side • Northbound Harlem at South Boulevard near side • Westbound South Boulevard at station entrance • Eastbound North Boulevard at station entrance Madison Street • Northbound Harlem at Madison Street far side (near Wendy's) • Northbound Harlem at Madison Street near side (near ComEd) CTA Blue Line Station • Northbound Harlem at Garfield Near-side / SE corner • Northbound Harlem at Garfield Far-side / NE corner • Northbound Harlem at Eisenhower (I-290) Ramp near side Roosevelt Road • Northbound Harlem at Roosevelt Far-side / NE corner (near tennis court)	Further study and public outreach needed	Pace	CMAQ	Long-term
Crosswalks Greenfield Street • Add high visibility crosswalk • Include curb extension on east side Eisenhower Expressway (I-290) • Planned crosswalk should use high visibility crosswalk Lexington Street • Add high visibility crosswalk on south leg Harvard Street • Add high visibility crosswalk Fillmore Street • Add high visibility crosswalk	Village would need to study and request crosswalk addition	Oak Park IDOT River Forest Forest Park	MFT	Mid-term

Intersection Enhancements Division Street • Use high visibility crosswalks • Consolidate gas station driveways on northeast corner • Use high visibility crosswalks Chicago Avenue • Consolidate gas station driveways on southeast corner • Add curb extensions • Use high visibility crosswalks Madison Street • Use high visibility crosswalk • Curb extension on southeast corner Roosevelt Road • Use high visibility crosswalk • Create pedestrian refuge islands	Village would need to lead study and IDOT request for refuge island Work with local business owners	Oak Park IDOT	MFT STP CMAQ	
Development Character BP Gas Site (at Chicago Avenue) • Encourage development fitting the Urban Neighborhood character 915 S Maple Avenue • Encourage development fitting the Mixed Residential/Industrial character	Guide developers to promote transit-supportive development near stations.	Oak Park	Staff effort	Long-term
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators		Oak Park IDOT	CMAQ STP	Mid-term

Table 23 – Implementation Matrix for Forest Park

Improvement Options	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations CTA Green Line Station • Southbound Harlem at Circle near-side Madison Street • Southbound Harlem at Madison Near-side CTA Blue Line Station • Southbound Harlem at Eisenhower Ramp far side Roosevelt Road • Southbound Harlem at Roosevelt Far-side (near strip mall)	Further study and public outreach needed	Pace	CMAQ	Long-term
Crosswalks Eisenhower Expressway • Add high visibility crosswalk on south leg Lexington Street • Add high visibility crosswalk on south leg Harvard Street • Add high visibility crosswalk where suitable Fillmore Street • Add crosswalk where suitable	Village would need to study and request crosswalk addition	Forest Park Oak Park IDOT	MFT	Mid-term
Intersection Enhancements Madison Street • Use high visibility crosswalks • Consolidate extra driveway on northwest corner Roosevelt Road • Use high visibility crosswalks • Create pedestrian refuge islands 16th Street • Use high visibility crosswalks • Create median pedestrian refuge island	Village would need to lead study and IDOT request for refuge island	Forest Park IDOT	MFT STP CMAQ	Mid-term
Development Character 901 S Harlem Avenue • Encourage development fitting the Mixed Residential/Industrial character	Guide developers to promote transit-supportive development near stations.	Forest Park	Staff effort	Long-term

Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators		Forest Park IDOT	CMAQ STP	Mid-term

Table 24 – Implementation Matrix for North Riverside

Improvement Option	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations 16th Street • Southbound Harlem at 16th Street far side Cermak Road • Southbound Harlem at Cermak Road far side (near Chick-fil-A) 26th Street • Southbound Harlem at 26th Street near side	Further study and public outreach needed Coordinate with Berwyn and Forest Park	Pace	CMAQ	Long-term
Crosswalks 19th Street • Add crosswalk • Include raised median on north leg of intersection 26th Street • Install accessible pedestrian signals with countdown indicator	Village would need to study and request crosswalk addition	North Riverside Berwyn IDOT	MDT	Mid-term
Intersection Enhancements 16th Street • Use high visibility crosswalks • Install median pedestrian refuge island on south leg	Village would need to lead study and IDOT request for refuge island	North Riverside IDOT	MFT STP CMAQ	Mid-term
Other Improvements 19th Street – 26th Street • Improve sidewalk with landscape buffer All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators	Coordinate with property owner	North Riverside IDOT	ITEP TAP CMAQ STP	Mid-term
Development Character North Riverside Park Mall • Encourage development fitting the Major Activity Center character (near Cermak) • Encourage development fitting an Urban Neighborhood character (near 26th)	Guide developers to promote transit-supportive development near stations.	North Riverside	Staff effort	Long-term

Table 25 – Implementation Matrix for Berwyn

Improvement Option	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations Roosevelt Road • Northbound Harlem at Roosevelt Near-side • Northbound Harlem at Roosevelt Near-side (near Shell gas) 16th Street • Northbound Harlem at 16th Street far side Cermak Road • Northbound Harlem at Cermak Road far side 26th Street • Northbound Harlem at 26th Street far side Metra BNSF Line Station • Northbound Harlem at Burlington Street far side • Northbound Harlem at Stanley Avenue far side (Connie's Restaurant) • Northbound Harlem at Windsor Avenue near side Ogden Avenue • Northbound Harlem at Ogden Avenue near side (between Berwyn Fruit & Vegetables) • Northbound Harlem at Ogden Avenue far side (near White Castle)	Further study and public outreach needed Coordinate with North Riverside	Pace	CMAQ	Long-term
Crosswalks 19th Street • Add crosswalk • Include raised median on north leg of intersection 26th Street • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicator at all traffic signals Burlington Street • Add high visibility crosswalk on north leg Quincy Street • Add high visibility crosswalk on north leg • Include curb extensions Robinson Court/35th Street • Add high visibility crosswalk on south leg • Include curb extensions on both sides of Harlem	Village would need to study and request crosswalk addition	Berwyn North Riverside IDOT	MFT	Mid-term

Olmsted Road • Add high visibility crosswalk on north leg • Include curb extensions on both sides of Harlem				
Intersection Enhancements Roosevelt Road • Use high-visibility crosswalks • Create pedestrian refuge islands 16th Street • Use high visibility crosswalks • Install median pedestrian refuge island on south leg Cermak Road • Provide feedback on IDOT planned changes Windsor Avenue & Stanley Avenue • Add bus lane on west side of Harlem and curb extensions on east side • Add high visibility crosswalks along railroad crossings Ogden Avenue • Add curb extension on northeast corner using space from extra wide curb lane • Use high visibility crosswalks Pershing Road • Consolidate driveways on northeast and southeast corners • Add curb extension on northeast corner • Use high visibility crosswalks	Village would need to lead study and IDOT request for refuge island. Work with local business owners.	Berwyn IDOT	MFT STP CMAQ	Mid-term
Other Improvements Cermak Road to K&M Fashion Driveway • Improve sidewalk with landscape buffer All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators	Coordinate with property owner.	Berwyn IDOT	ITEP TAP CMAQ STP	Mid-term
Development Character Former VFW Site (at 16th Street) • Encourage development fitting the Urban Neighborhood character 3441 S Harlem Avenue • Encourage development fitting the Local Activity Center character 7201 Ogden Avenue • Encourage development fitting the Urban Neighborhood character	Guide developers to promote transit-supportive development near stations.	Berwyn	Staff effort	Long-term

Table 26 – Implementation Matrix for Riverside

Improvement Option	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations 26th Street • Southbound Harlem at 26th Street far side (near 7-Eleven) Metra BNSF Line Station • Southbound Harlem at Burlington Street near side (near Bank of America) • Southbound Harlem at Burlington Street far side • Southbound Harlem at Quincy Street near side (near Texor Petroleum)	Further study and public outreach needed	Pace	CMAQ	Long-term
Crosswalks Burlington Street • Add high visibility crosswalk on north leg Quincy Street • Add high visibility crosswalk on north leg • Include curb extensions Robinson Court/35th Street • Add high visibility crosswalk on south leg • Include curb extensions on both sides of Harlem Olmsted Road • Add high visibility crosswalk on north leg • Include curb extensions on both sides of Harlem	Village would need to study and request crosswalk addition	Riverside Berwyn IDOT	MFT	Midterm
Intersection Enhancement Windsor Avenue & Stanley Avenue • Add bus lane on west side of Harlem and curb extensions on east side • Add high visibility crosswalks along railroad crossings	Village would need to lead study and IDOT request for refuge island	Riverside Berwyn IDOT	MFT STP CMAQ	Mid-term
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators		Riverside IDOT	CMAQ STP	Mid-term

Table 27 – Implementation Matrix for Stickney

Improvement Locations	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations Joliet Road • Northbound Harlem at 41st Street near side (near La Ola Del Mar)	Further study and public outreach needed	Pace	CMAQ	Long-term
Crosswalks 44th Street • Add crosswalk where streets jog • Include curb extension on east side	Village would need to study and request crosswalk addition	Stickney Lyons IDOT	MFT	Mid-term
Development Character 3441 S Harlem Avenue • Encourage development fitting the Urban Neighborhood character La Ola Del Mar • Encourage development fitting the Urban Neighborhood character	Guide developers to promote transit-supportive development near stations.	Stickney	Staff effort	Long-term
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators		Stickney IDOT	CMAQ STP	Mid-term

Table 28 – Implementation Matrix for Lyons

Improvement Locations	*Action*	*Implementer*	*Funding Options*	*Timing*
Station Locations Ogden Avenue • Southbound Harlem at Ogden Avenue far side 41st Street • Southbound Harlem at Joliet Road far side 46th/47th Street • Southbound Harlem at 47th Street far side	Further study and public outreach needed	Pace	CMAQ	Long-term
Crosswalks 44th Street • Add crosswalk where streets jog • Include curb extension on east side 46th/47th Street • Add high visibility crosswalks	Village would need to study and request crosswalk addition	Lyons Stickney IDOT	MFT	Mid-term
Intersection Enhancement Ogden Avenue • Use high visibility crosswalks 39th Street/Pershing Road • Use high visibility crosswalks Use high visibility crosswalks Joliet Road • Add high visibility crosswalks • Create pedestrian refuge island on the southwest corner	Village would need to lead study and IDOT request for refuge island	Lyons IDOT	MFT STP CMAQ	Mid-term
Other Improvements Ottawa Train Woods • Add sidewalk along west side of Harlem All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators		Lyons IDOT	ITEP TAP CMAQ STP	Mid-term

Table 29 – Implementation Matrix for Forest View

Improvement Locations	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations 46th/47th Street • Northbound Harlem at 46th Street far side • Northbound Harlem at 46th Street far side (near Tool Store) Stevenson Expressway (I-55) Station • Northbound Harlem at Stevenson Bridge mid-block	Further study and public outreach needed	Pace	CMAQ	Long-term
Crosswalks 46th/47th Street • Add high visibility crosswalks	Village would need to lead study and IDOT request	Forest View IDOT	MFT STP CMAQ	Mid-term
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators Investigate possibility of transfer station that connects with express bus-on-shoulder service	Coordinate with IDOT on I-55 managed Lanes Project	Forest View IDOT Pace	STP CMAQ	Long-term

Table 30 – Implementation Matrix for Summit

Improvement Locations	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations Stevenson Expressway (I-55) Station • Southbound Harlem at Stevenson Bridge mid-block Archer Avenue • Southbound Harlem at Archer Avenue near side (near Angry Slice) • Southbound Harlem at Archer Avenue far side 63rd Street • Southbound Harlem at 63rd Street near side • Southbound Harlem at 63rd Street far side (near Grand Dukes)	Investigate possibility of transfer station that connects with express bus-on-shoulder service Coordinate with IDOT on I-55 managed Lanes Project. Further study and public outreach needed.	Pace IDOT	CMAQ	Long-term
Intersection Enhancement Archer Avenue • Enhance pedestrian refuge islands • Repaint high visibility crosswalks 63rd Street • Create median refuge islands • Use high visibility crosswalks • Consolidate driveways on the northwest corner	Village would need to lead study and IDOT request for refuge island Work with local business owners	Summit	MFT STP CMAQ	Mid-term
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks at all traffic signals • Install accessible pedestrian signals with countdown indicators at all traffic signals 63rd Street • Railroad grade separation study Investigate possibility of transfer station that connects with express bus-on-shoulder service	Coordinate with existing CREATE study to ensure pedestrian transit access and walkability are not limited or reduced Coordinate with IDOT on I-55 managed Lanes Project	Summit CREATE Partners Pace IDOT	MFT STP Federal CMAQ	Mid-term Long-term
Development Character 6418 S Harlem Avenue • Encourage development fitting the Mixed Residential/Industrial character	Guide developers to promote transit-supportive development near stations.	Summit	Staff effort	Long-term

Table 31 – Implementation Matrix for Bedford Park

Improvement Locations	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations 71st Street • Northbound Harlem at 71st Street near side (near Taqueria Los Magueyes) • Northbound Harlem at 71st Street far side	Further study and public outreach needed	Pace	CMAQ	Long-term
Intersection Enhancement 71st Street • Use high visibility crosswalks • Enhance median pedestrian refuge islands	Village would need to lead study and initiate IDOT request for refuge island	Bedford Park IDOT	MFT STP CMAQ	Mid-term
Other Improvements 63rd Street • Railroad grade separation study 63rd Street to 71st Street • Add sidewalk along east side of Harlem All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators	Coordinate with existing CREATE study to ensure pedestrian transit access and walkability are not limited or reduced	CREATE Partners Bedford Park IDOT	STP Federal ITEP TAP CMAQ	Long-term Mid-term

Table 32 – Implementation Matrix for Bridgeview

Improvement Locations	*Action*	*Implementer*	*Funding Options*	*Timing*
Potential Station Locations 71st Street • Southbound Harlem at 71st Street far side (near National Truck Parks) • Pace Transit Center at Toyota Park/SeatGeek Stadium	Further study and public outreach needed	Pace	CMAQ	Long-term
Intersection Enhancement 71st Street • Use high visibility crosswalks • Enhance pedestrian refuge islands	Village would need to lead study and initiate IDOT request for refuge island	Bridgeview IDOT	MFT STP CMAQ	Mid-term
Development Character Toyota Park/SeatGeek Stadium Out-lots • Encourage development fitting the Mixed Residential/Industrial character	Guide developers to promote transit-supportive development near stations.	Bridgeview	Staff effort	Long-term
Other Improvements All Corridor Traffic Signals • Use high visibility crosswalks • Install accessible pedestrian signals with countdown indicators		Bridgeview IDOT	CMAQ STP	Mid-term