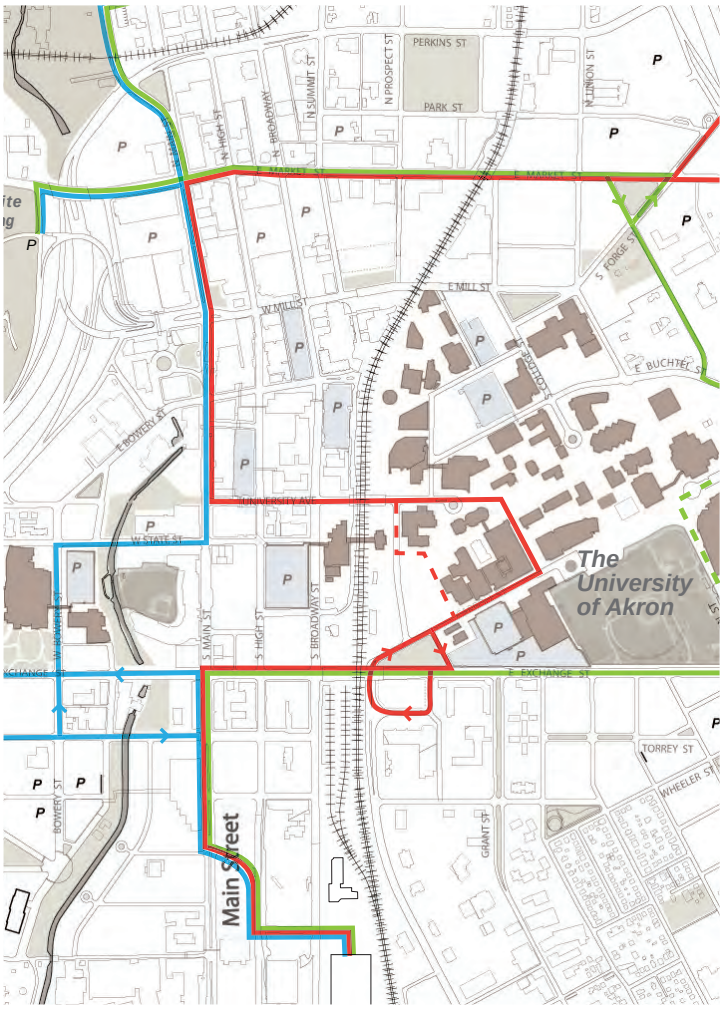

Downtown Akron Connectivity Study

NOVEMBER 28, 2011

EE&K a Perkins Eastman company

BFJ Planning

Downtown Akron Connectivity Study

November 28, 2011

Prepared for:
AMATS
Akron Metropolitan Area Transportation Study

Prepared by:
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Floyd Browne Group

In association with:
EE&K
Van Auken Akins Architects, LLC
Floyd Browne Group

Contents

1 Introduction

EE&K a Perkins Eastman Company, in conjunction with BFJ Planning, the Floyd Browne Group and Van Auken Akins Architects have been retained by the Akron Metropolitan Area Transportation Study (AMATS), the City of Akron and the Metro Regional Transit Authority to develop a Downtown Akron Connectivity Plan. The purpose of this effort is to improve connectivity, accessibility and mobility between the six neighborhoods and districts that form Downtown Akron, with emphasis on the non-auto modes of transportation. The study is intended to complement the ongoing efforts by the University Park Alliance in conjunction with the City of Akron, to advance a new vision for Downtown Akron and the University Park area. The Vision Plan (figure 1) focuses on bringing people downtown by establishing walkable, mixed-use districts oriented around Downtown's three major streets: Market Street, Main Street and Exchange Street. The study's recommendations include a mix of short-term implementable measures and more ambitious long-term solutions to achieve the expressed goals.

Downtown Akron's roadway system was largely created in a period when the City was considerably larger than the current population of 199,000. Like many other US cities, Akron's roadway system developed over the last 60 years with the main goal of funneling cars as quickly as possible from their outlying origins to their place of work. The ground level of the downtown area was designed first and foremost for the car. Large parking facilities were integrated into the office buildings or were built adjacent to the places of work and when pedestrians had to cross a street they were shepherded via skywalks.

Connectivity in downtown meant getting into a car and driving to another parking garage a few blocks away. This development pattern has made it unpleasant and difficult to walk or to use other transportation modes. The main purpose of this study is to help in reversing this trend and encourage pedestrian activity and the use of other modes of transportation in order to make Downtown a more attractive place to live, work, play and visit. This study builds on the efforts that the City and other agencies have undertaken in recent years to make Downtown more pedestrian friendly.

Figure 2 shows the six main districts that constitute the downtown area. Some of these districts are anchored by large institutions (University of Akron, hospitals and health systems) and others are more typical downtown districts or adjacent neighborhoods that have experienced revitalization.

Today's traffic conditions in downtown can be described as very good from a traffic circulation point of view. Figure 3 shows existing or projected traffic levels of service as identified in recent traffic studies. A majority of intersections operate at levels of service A or B which implies very short vehicle delays and smooth traffic flow, a reflection of the planning and design principles in the past that were followed for the development of downtown.

The downside of such good levels of service in a downtown area is that other transportation modes, in particular pedestrians suffer more difficult conditions. While wider roadways increase capacity and improve levels of service, pedestrians have to cross wider intersections, with high

traffic volumes and high speeds. The length of the blocks between certain intersections is high, allowing for fast vehicular speeds, making it difficult for pedestrians to cross downtown roadways. If conditions for pedestrians are difficult, they will also be difficult for bus and bicycle users.

Unfortunately, good levels of service for traffic do not imply that traffic conditions are safe. Figure 4 shows those roadway segments and intersections that have been identified as high crash locations by AMATS. High vehicular speeds in downtown areas are generally the main cause for crashes. A faulty behavior of a driver at 45 mph is more likely to result in a crash or in a severe crash than faulty behavior at 25 mph.

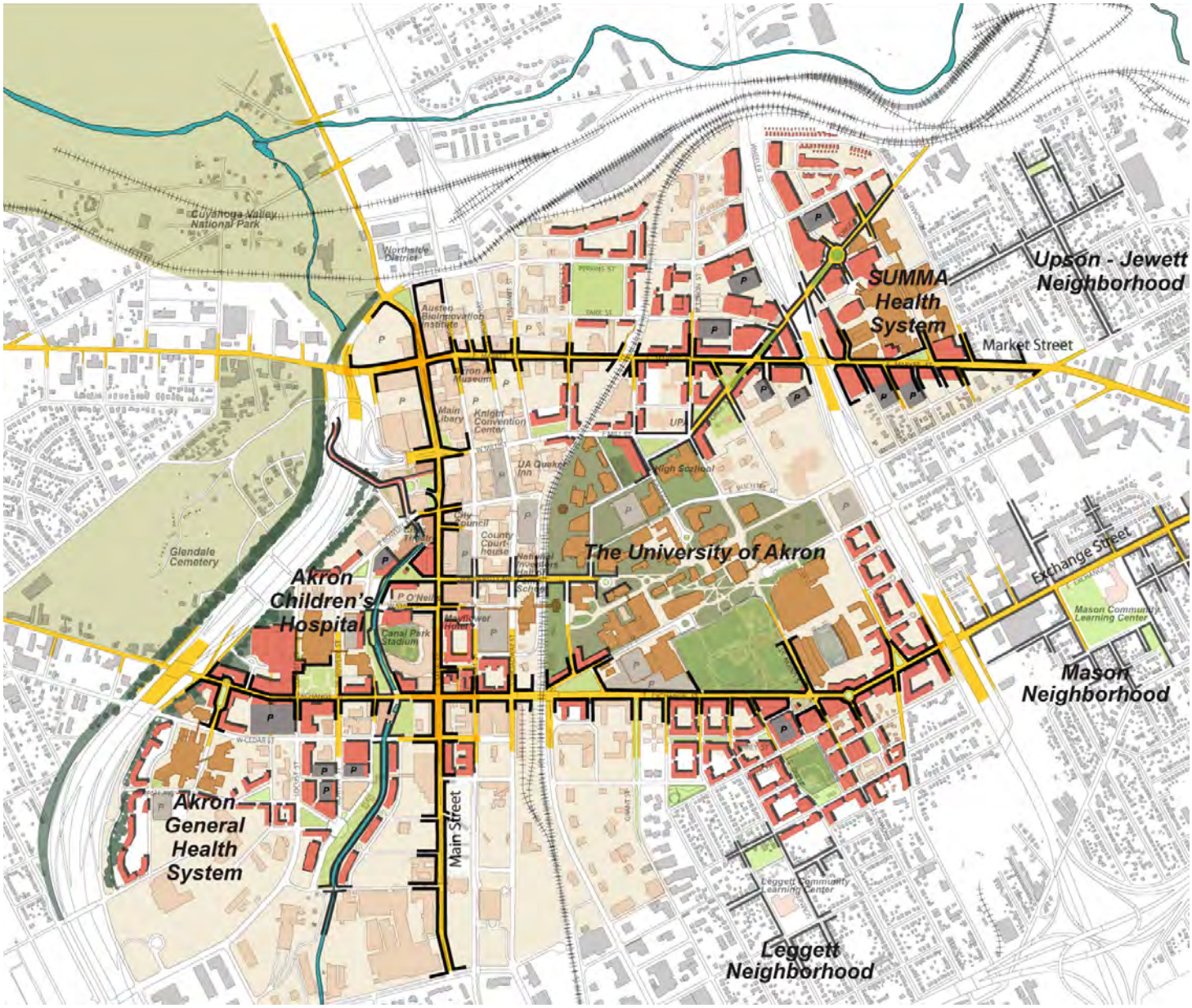

FIGURE 1: AKRON: CORE CITY VISION PLAN

SOURCE: EE&K

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BFJ Planning

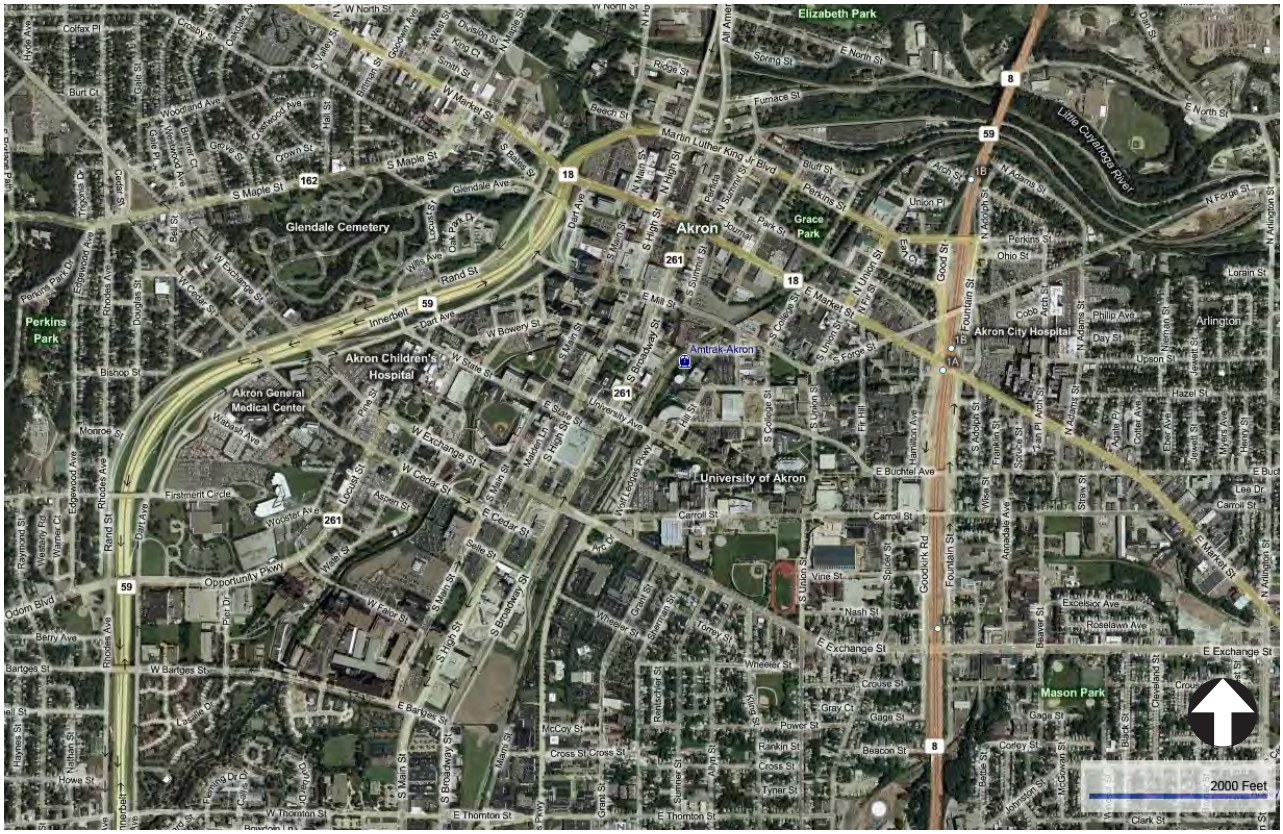

FIGURE 2: DOWNTOWN AKRON DISTRICTS

SOURCE: BFJ PLANNING, GOOGLE

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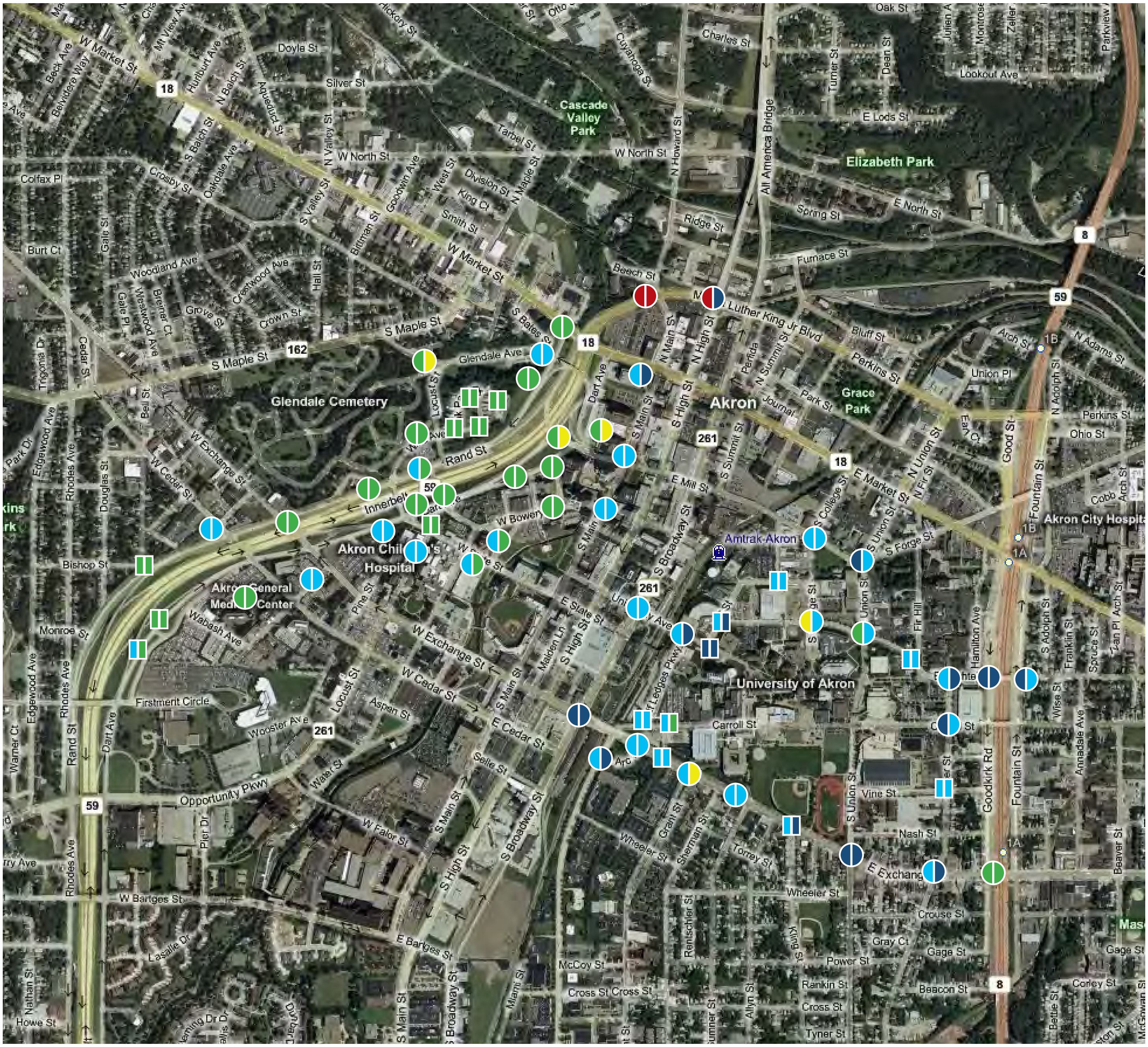
BFJ Planning



Level of Service

Signalized Intersections

AM/PM

- LOS of A
- LOS of B
- LOS of C
- LOS of D
- LOS of E
- LOS of F

Unsignalized Intersections

AM/PM

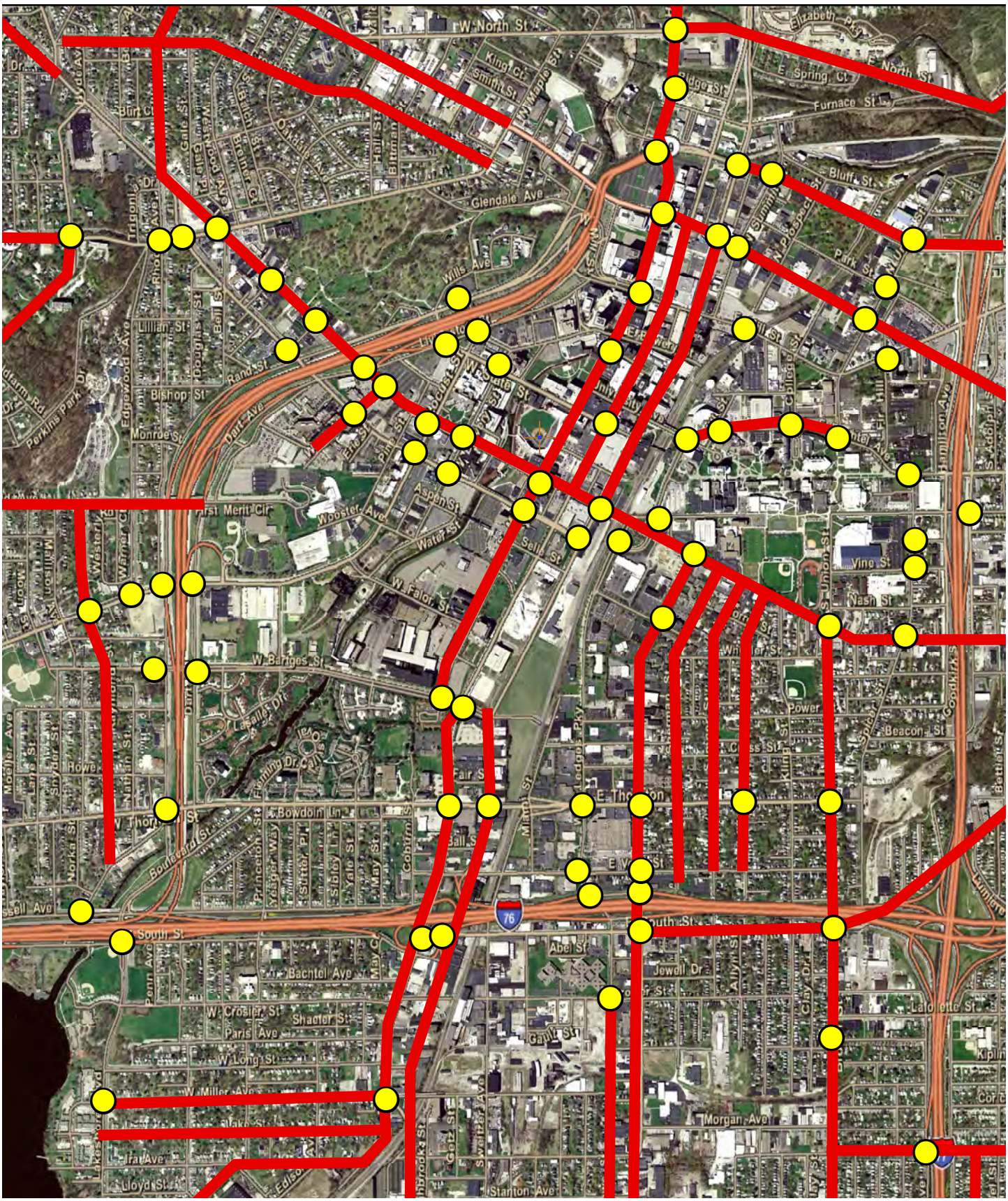
- LOS of A
- LOS of B
- LOS of C

Note: Levels of service along Innterbelt are projections for 2030

Source: Akron Innerbelt (SR 59) Study: 2030 No build LOS; and Transportation and Traffic Study for University of Akron and City of Akron (2008 LOS)

Figure 3: Traffic Levels of Service (AM/PM)

0 ft 2000 ft



Arterial section with 10 or more crashes per mile (2007-2009) and a crash rate of 1 or more per million vehicle miles traveled

Intersection with 10 or more crashes (2007-2009) and a crash rate of 1 or more per million approach vehicles

FIGURE 4: TRAFFIC CRASHES

SOURCE: AMATS

2 Pedestrian Friendliness

Improving the walkability of Downtown Akron has many benefits including improved accessibility, reduced transportation costs and greenhouse gas emissions, and improved public health and sense of community. It will also help create the kind of environment that will attract people and new investment to Downtown. Akron's development patterns which focus on vehicular mobility have created many challenges to creating a pedestrian friendly downtown. The success of walkable streets can be seen in cities around the world. Jan Gehl, a well regarded architect and pioneer of walkable communities, notes that cities that have made efforts to improve their streets are considerably better off than they were twenty years prior to implementation (Gehl Architects and NYC, 2008).

Akron's network of skywalks which connects parking facilities and major office buildings represents a particular challenge facing pedestrian friendliness. The skywalks enable office workers to park their cars and travel between buildings without having to set foot on city sidewalks. Although the skywalks have an advantage with regard to weather protection, they are robbing sidewalks of their livelihood! This is a major challenge Akron faces to enliven life at the ground floor level, especially along Main and High Streets.

The Downtown pedestrian streetscape has significant portions that are unpleasant to walk along. Some of the ground floor streetscape in the Downtown area has closed facades, blank walls, blind windows and a lack of detail. These developments have removed life from the streets and increased the feeling of insecurity once it gets dark. Examples of various types of active and inactive ground floor designs are shown in Figure 5 (Gehl Architects, 2009). Some of the major north/south blocks in the downtown area are very long and do not have regular opportunities for pedestrians to cross the street. Figure 6 illustrates the various degrees of pedestrian friendliness along Main Street, Market Street and Exchange Street. Physical attributes such as obstructions, crossing opportunities, environment, street buffer, scale, security and façade were factors considered in the rating system used to quantify pedestrian friendliness.

Implementing "Complete Street" designs is one way to transform Akron into a more walkable community. Complete Streets are those which are comfortable, liveable, and safe for pedestrians, bicyclists, transit riders, people with disabilities, as well as motorists. The following section describes recommendations unique to pedestrians. Strategies to promote complete streets will be discussed later in this report.

2.1 Form-Based Zoning and Ground Floor Design

In recent years, many cities have used methods to improve the attractiveness of ground floors to develop space quality (Gehl, 2010), and at the same time provide increased flexibility in terms of the uses allowed in the buildings. In general, form based zoning focuses on controling more the location, bulk and form of the building, rather than the uses. Typically, form-based zoning will require a continuous building façade with mandatory elements such as street-oriented buildings, active ground level uses and transparency requirements to help maintain an interactive environment where people walk slower and stop.

Ground floor commercial requirements at key locations could be used by Akron to ensure a mix of commercial and retail uses along downtown streets. Ground floor facades with glass storefronts encourage pedestrians to look inside. Blank street walls should not be permitted. Facades should not be plain or sterile but incorporate architectural features such as windows, entrances and limited variations in setback. The flexibility of form based zoning allows for a range of uses and design choices which can contribute to a more varied street edge. Potential form based zoning recommendations are listed below:

Potential form based zoning recommendations:

- Require continuous frontage along commercial corridors with a zero setback from the right of way
- Require 70% of the ground floor frontage at key locations to be occupied by retail and restaurant uses. The remaining frontage of the lot may be occupied by uses otherwise permitted including lobby spaces and parking entrances. Zoning changes should focus on where ground floor is feasible based on existing conditions.
- Require a minimum of 50% transparency of the first floor street wall. Necessary building elements such as columns or fire doors should not exceed 10' in width.
- Exempt schools, houses of worship and pre-existing lots of less than 20' frontage width from ground floor streetscape design/transparency regulations

Figure 7 illustrates a ground floor streetscape with proposed façade guidelines.

A — active

Small units, many doors
(15 – 20 doors per 100 m/328 feet)
Large variation in function
No blind and few passive units
Lots of character in façade relief
Primarily vertical façade articulation
Good details and materials

B — friendly

Relatively small units (10 – 14 doors per 100 m/328 feet)
Some variation in function
Few blind and passive units
Façade relief
Many details

C — mixture

Large and small units (6 – 10 doors per 100 m/328 feet)
Modest variation in function
Some blind and passive units
Modest façade relief
Few details

D — boring

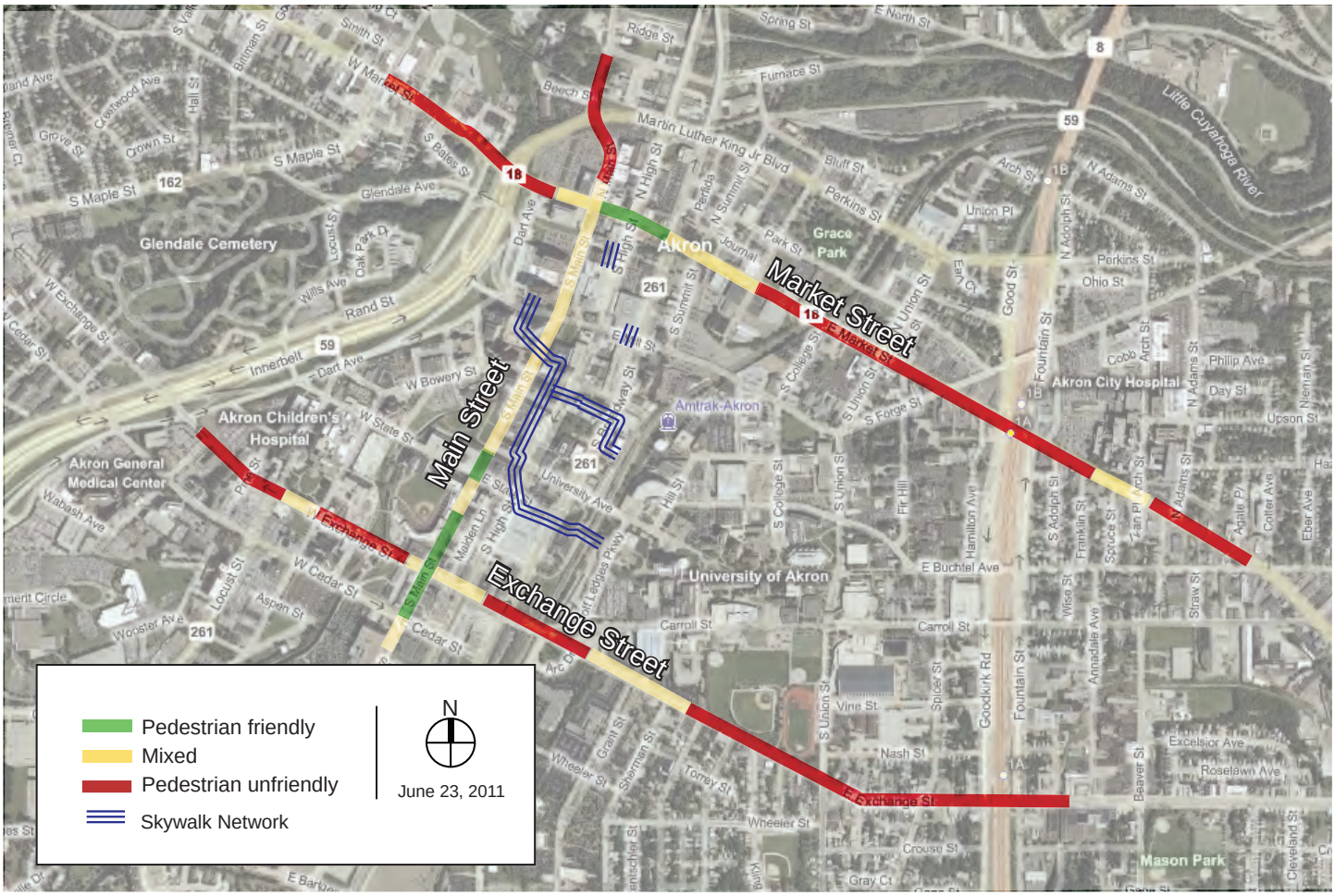
Large units, few doors (2 – 5 doors per 100 m/328 feet)
Almost no variation in function
Many blind or uninteresting units
Few or no details

E — inactive

Large units, few or no doors (0 – 2 doors per 100 m/328 feet)
No visible variation in function
Blind or passive units
Uniform façades, no details, nothing to look at

Source:
"Close Encounters With Buildings," Urban Design International, 2006
Further developed: Gehl Architects — Urban Quality Consultants, 2009

FIGURE 5: EVALUATION OF GROUND FLOOR DESIGN




Market Street


Market Street


Market Street


Main Street


Main Street


Main Street


Exchange Street


Exchange Street


Exchange Street

FIGURE 6: EVALUATION OF GROUND FLOOR STREETSCAPE

SOURCE: VAN AUKEN AKINS ARCHITECTS, BFJ PLANNING

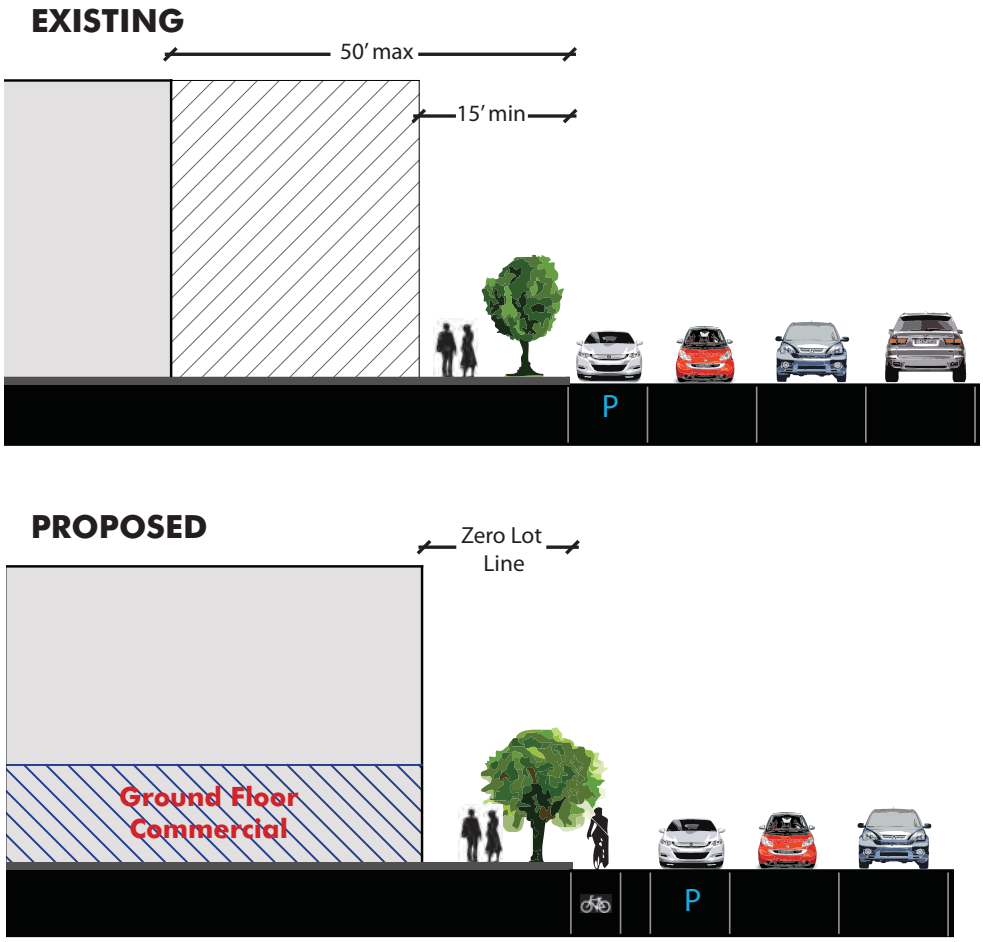


FIGURE 7: GROUND FLOOR STREETSCAPE

SOURCE: BFJ PLANNING

2.2 Wayfinding Signage at the Street Level

Successful wayfinding and placemaking is one strategy to bring people down from the skywalks to the street level. Wayfinding tools such as information kiosks and directional signage with distance indicators can be used to guide pedestrians from offices and parking to the street level and important nodes of activity. Similarly, at the street level, wayfinding signage can help establish a pedestrian friendly culture by orienting pedestrians, guide traffic flow, and imbuing streets with a human scale.

Wayfinding examples:

- Informational kiosks direct pedestrians to important nodes of activity and can anchor a network of sidewalk services such as wireless Internet hubs, bike racks, and public restrooms.
- Wayfinding signs at street corners. This example uses color and distance indicators to identify access points in an easily understandable way.

Informational kiosk, Atlanta, GA

Wayfinding signage, Des Moines, IA

2.3 Discourage New Skywalks

Skywalks are robbing sidewalks of pedestrians and have negative impacts on the feasibility of retail uses. At the same time the skywalks do not create attractive spaces inside the buildings or opportunities for retail or commercial activities. New skywalks should be discouraged.

2.4 Crossing Opportunities for Pedestrians

Some of the major north/south blocks in the downtown area are very long and do not have regular opportunities for pedestrians to cross the street. Specifically, Summit Street, Broadway, High Street and Main Street are all roads which have segments with very long distances between intersections (greater than 600 feet). Midblock crosswalks can be used along these blocks to allow more frequent gaps and reduce conflicts by concentrating pedestrian crossings into one central location.

Generally, midblock crossings can be created by using simple designs and logical guidelines. To be effective and safe, midblock crossings should be clearly visible (and well lit at night), they should reduce vehicle speeds at the crosswalk, and they should increase awareness of the presence of pedestrians. Simple design elements include ladder markings for crosswalks, pavement treatments (stamped and colored) and/or tabled crosswalk intersections (35 mph or less roads) for heavy volume pedestrian crossings. Crosswalk signs and yield to pedestrian signs prescribed by the Manual of Uniform Traffic Control Devices (MUTCD) are shown below:

Mid-block Bump-out


HAWK Signal

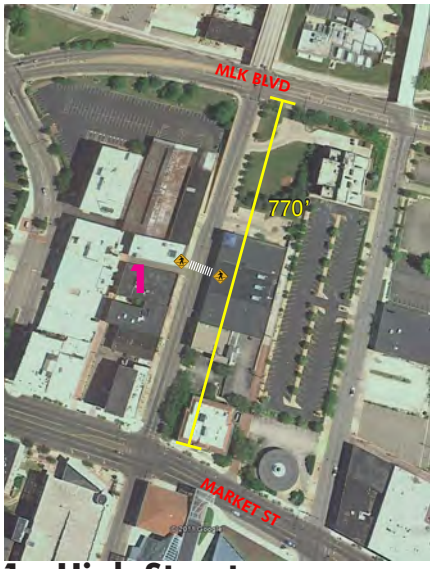
Flashing pedestrian crossing sign

Figure 8 shows those locations in downtown where mid-block crossings should be considered. Other midblock crossing design elements may include:

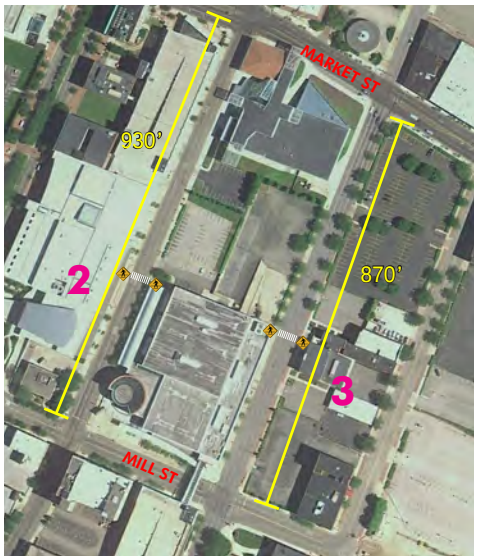
- Bulb-outs help slow traffic and reduce crossing distances for pedestrians. They should be considered at midblock crossings, especially when the roadway width is greater than 32 feet.
- Center medians can improve crossing safety by providing a pedestrian refuge, which will allow the pedestrian to cross each direction of traffic separately.
- Raised Crosswalks can be used to increase visibility of the crosswalk and to decrease vehicle speeds.
- Flashing yellow lights may be used at mid-block crosswalks if an engineering study indicates a need to increase awareness of the crosswalk location or the presence of pedestrians.
- Traffic signals can be installed at an intersection or mid-block if warranted by pedestrian volumes (MUTCD). When traffic signals are installed based on pedestrian warrants, pedestrian signals must be used. (WALK, DON'T WALK)
- Pedestrian hybrid beacons or **Hawk Signals** have been used safely and successfully in many cities to stop traffic and allow pedestrians to cross safely. Studies have shown a better compliance rate by motorists with a HAWK beacon than other devices at pedestrian crossings. The signals are designed for use in locations that do not meet traffic engineering 'warrants' for a conventional signal. The new signal is intended to aid pedestrians who

desire assistance crossing a street with heavy traffic and it also provides visually impaired pedestrians audible information as to when the WALK signal is on. The HAWK is technically a "beacon" in that it remains dark for traffic unless a pedestrian activates the pushbutton. When the pedestrian presses the button, approaching drivers will see a FLASHING YELLOW for a few seconds, indicating that they should reduce speed and be prepared to stop for a pedestrian in the crosswalk. It then goes to solid yellow like a typical traffic signal, advising drivers to prepare to stop. The beacon then turns solid red, requiring drivers to stop at the crosswalk. Finally, the beacon goes to flashing red, letting drivers know that after coming to a complete stop, they can proceed once the pedestrian has crossed safely. The beacon then turns to the dark condition.

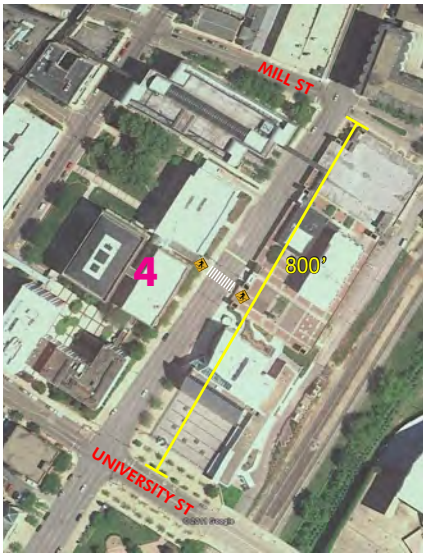
Other midblock crossing design elements are discussed in the Complete Streets section.



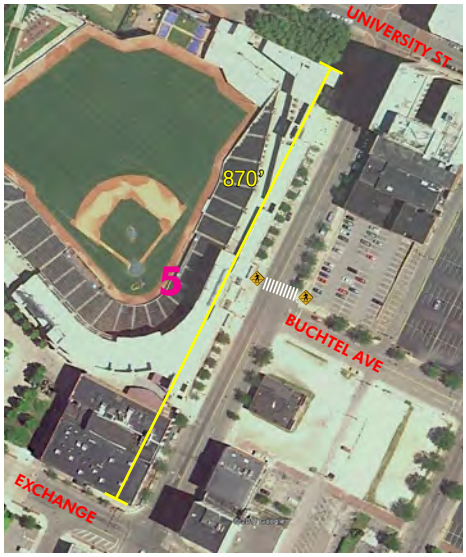
1 - High Street



2 - High Street, 3 - Broadway



4 - Broadway



5 - Main Street

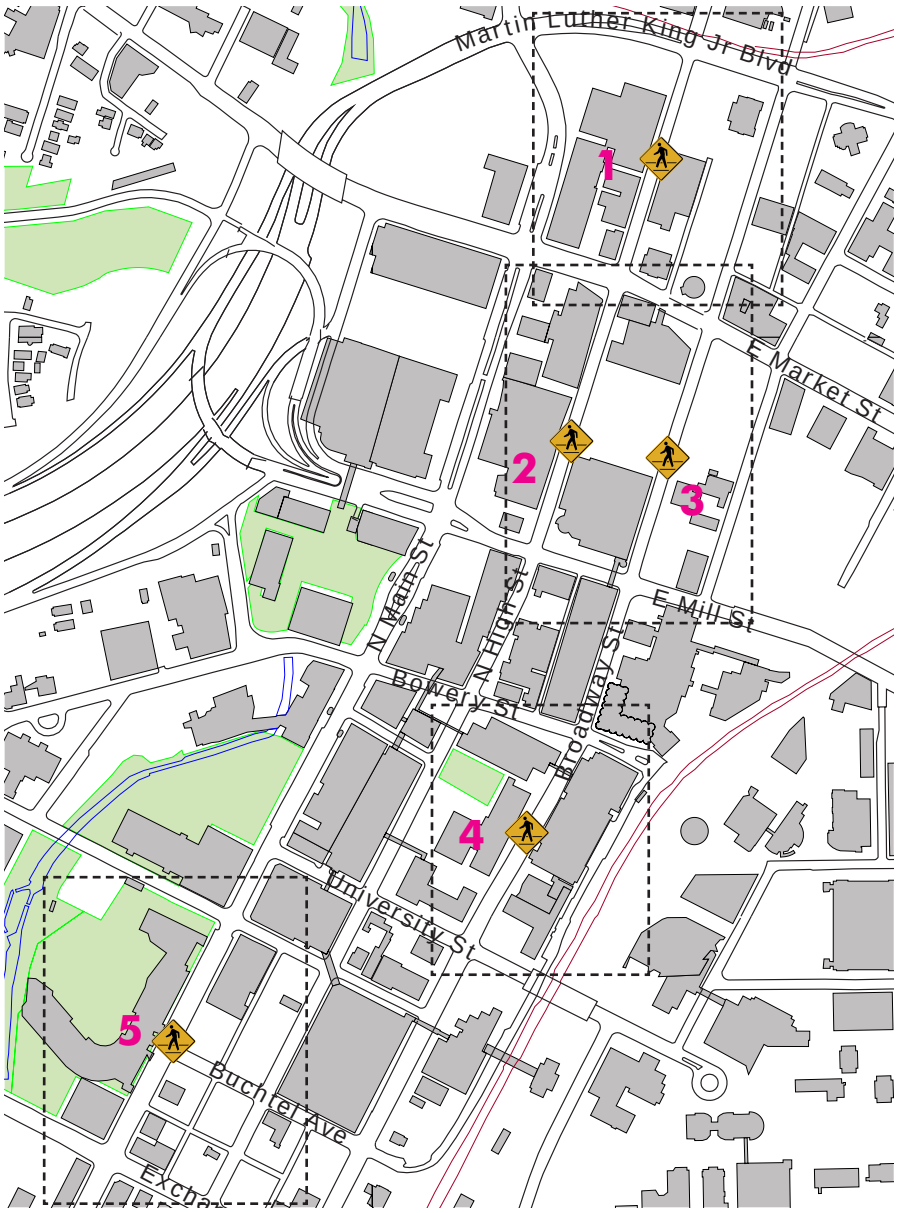


FIGURE 8: PROPOSED MID-BLOCK CROSSINGS

SOURCE: BFJ PLANNING

3 Bicycle Friendliness

While the bicycle mode share in Downtown Akron is relatively low, its size, scale and large and large student population suggest potential for significant increases. Bicycles offer an ideal mode to connect downtown's key destinations and emerging neighborhoods. The Akron Bicycle Plan (2009) established a vision for cycling in Akron with a baseline policy document from which a bikeway planning program can be implemented. One of the major short term goals of the document was to establish a bikeway network throughout the City (approximately 228 miles or 25% of total roadway mileage) that contains a variety of signage, marking and facilities that decreases barriers to cycling and increases connectivity to schools, work, libraries, commerce and the regional trail system. Along primary bicycle routes identified where average daily traffic (ADT) is greater than 10,000 vehicles, bike lanes, widened shoulders or curb lanes were recommended. Shared roadways with signage and shared-lane markings were recommended for secondary routes (6,000-10,000 ADT).

The University of Akron and the City of Akron have active bicycle organizations. The City has been working with the University of Akron and the University Park Alliance on a bicycle initiative to develop and test amenities that will make biking on and around campus more friendly. This initiative is the first effort in the City focused on promoting the bicycle as a mode of transportation rather than simply a source of recreation. Improvements mostly consisted of "Share the Road" signs and sharrow pavement markings on selected streets. Separate lanes for bikes were added on Spicer Street between East Exchange Street and Buchtel Avenue and on Brown Street between East Exchange and Wheeler streets. The City has yet to determine whether separate bike lanes are appropriate on Exchange Street from the Towpath Trail to state Route 8. Sections of Wheeler, Sumner, Carroll, Brown and Sherman streets were designated as "bicycle boulevards" — low-volume residential roadways where cars and bicycles equally share the right of way.

Figure 9 shows the existing bicycle plan for the City of Akron and proposed changes to the plan elements. Bicycle lanes are proposed to enable safe travel to the downtown area and along downtown's three key streets: Main Street, Market Street and Exchange Street. The proposed map features dedicated lanes along Main Street, High Street and Broadway as well as the cross streets which connect those three north/south streets.

The Towpath Trail has recently been re-established as a multi-purpose recreational resource for northeast Ohio and the surrounding region. The City completed several projects in 2009 and 2010 to connect the path including uncovering the Canal on Garden Alley next to Lock 3 Park. Replacing the bridge at Bartges Street, resolving the crossing at Exchange Street and creating a more direct link across I-59 to the Towpath are the only projects remaining to fully complete the pathway through Akron.

Improving bicycle safety is part of the broader complete street strategy which aims to make streets safe and convenient for all users. The following section describes recommendations specific to bicycle use. Since bicycle lanes are part of the wider complete street approach, general

recommendations are discussed here whereas specific interventions will be discussed in the complete street section of this report.

3.1 Separated Bicycle Lanes for Roads with On-Street Parking

A preferred option for primary bicycle routes is to physically separate the bike lane from traffic and from parked cars. This has been successfully accomplished along a number of Avenues in New York City. Unlike the typical on-street bike lane in which cyclists are placed between moving traffic and parked cars, this design creates a protected lane for bicycles between the sidewalk curb and a buffer next to the parked cars. This type of lane is relatively easy to implement, meets the objective of physical protection without significantly diminishing space for parking, and it has the advantage of preventing "dooring." An added benefit of the configuration is the creation of a pedestrian refuge area at the intersection where trees or landscaping can be placed. This extra row of trees can serve to slow traffic and give a boulevard feel to the street. The bicycle lane on Manhattan's Ninth Avenue is an example of such a physically separated bike lane. Figure 10 describes the bike lane alternatives, as well as their advantages and disadvantages.

3.2 Short-Term and Long-Term Bicycle Parking

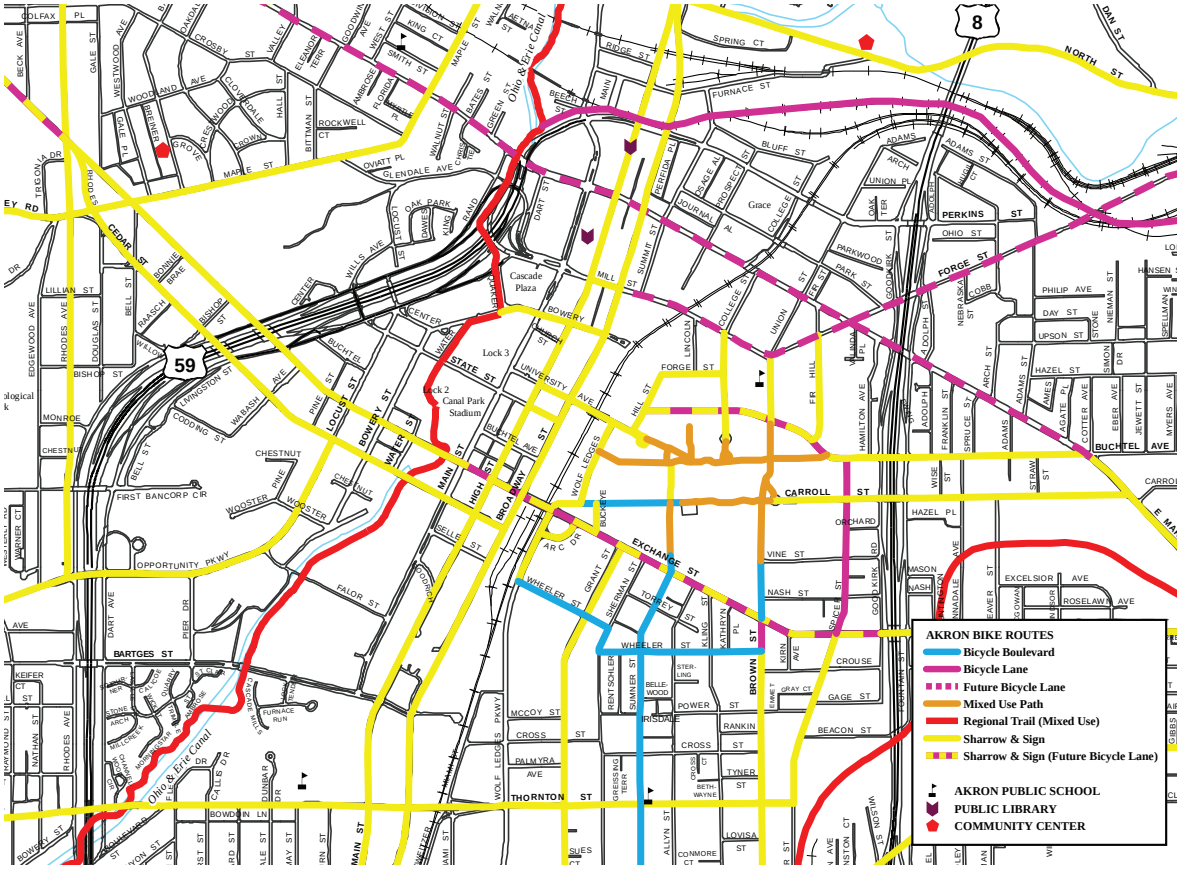
In order to foster a successful bicycle network, the city must encourage or provide safe and convenient places to park bicycles. The Akron Bicycle Plan sets a short-term goal of installing 60 bicycle racks per year throughout the City over the next five years (2009-2014). In order to facilitate improved bicycle parking opportunities, Akron should consider the recommendations below.

3.3 Bicycle Parking Requirements

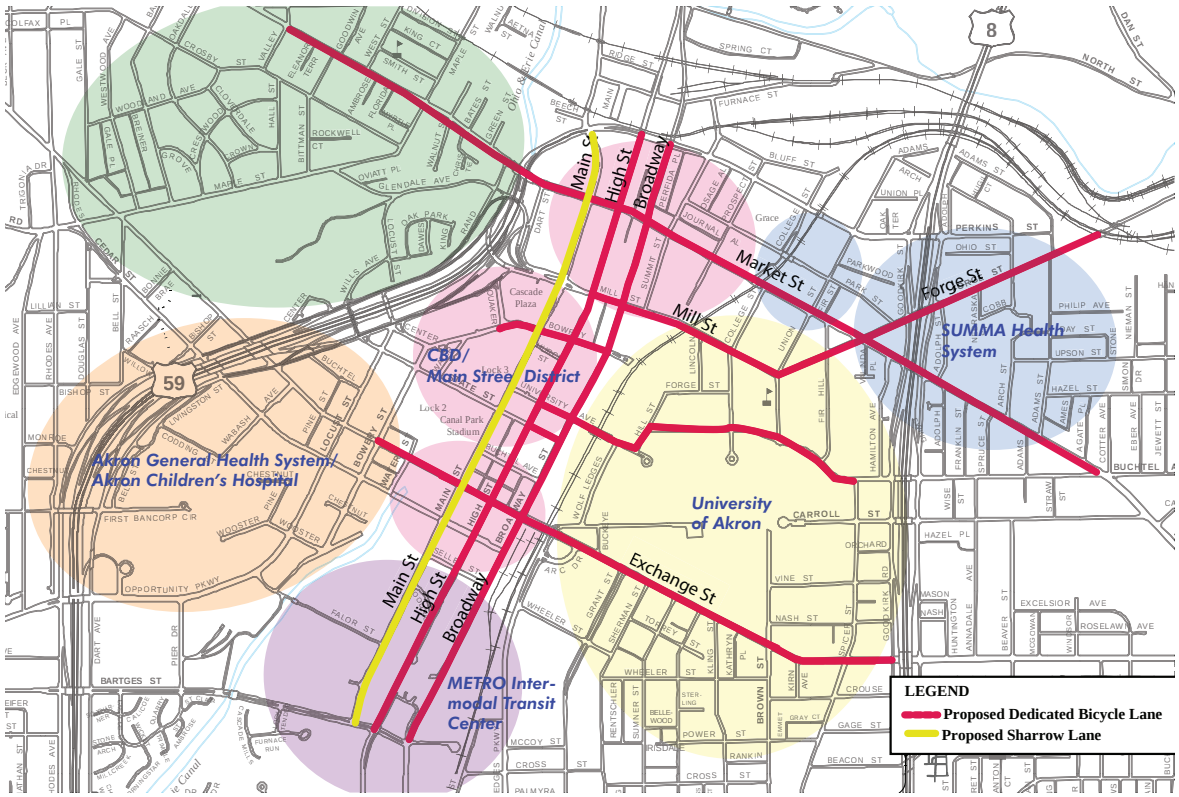
Ordinances which require short term and/or long term bicycle parking in new developments have been adopted by cities across the nation including Portland, New York City, Charlotte, Pittsburgh, Cleveland, San Francisco, Kansas City and Denver. These requirements have been used to foster development of both short term and long term bicycle parking at locations where it is needed.

Requirements for short-term bicycle parking encourage shoppers, customers, messengers and other visitors to use bicycles by providing a convenient and readily accessible place to park bicycles. Short term bicycle parking should serve the main entrance of a building and should be visible to employees and visitors. Strictly speaking, short-term bicycle parking refers only to bicycle racks. Effectively, it also comprises any fixed element of street furniture to which a bicycle can be chained. Racks allow planners to determine exactly where bicycles will be kept, helping to ensure that pedestrian flow and other sidewalk functions are not disrupted.

Long term bicycle parking provides employees, students, residents, commuters and others who generally stay at a site for several hours, a secure and weather protected place to park bicycles. Regulations should be based on the demand generated by different use categories and the level of security necessary to encourage the use of bicycles. Table 1 shows a sample of required minimum number of bicycle parking spaces for each use category (Portland, Oregon). No long-term bicycle parking is required on sites with less than 2,500 square feet of gross building area.



City of Akron Bikeways Map (October, 2008)

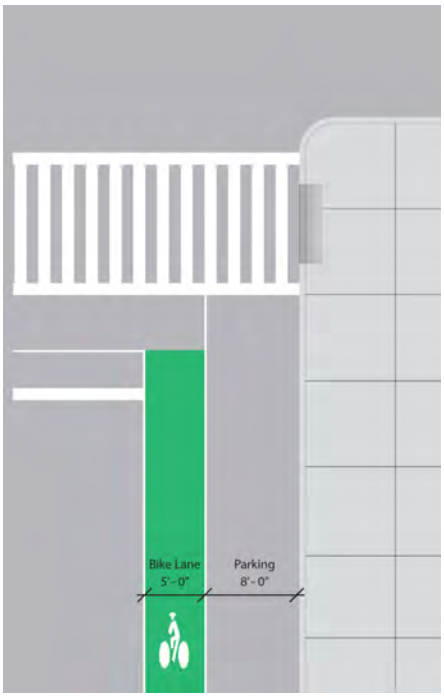


Proposed Changes to Downtown Bicycle Network

FIGURE 9: PROPOSED CHANGES TO DOWNTOWN BICYCLE NETWORK

SOURCE: BFJ PLANNING

Option 1: Standard Bike Lane

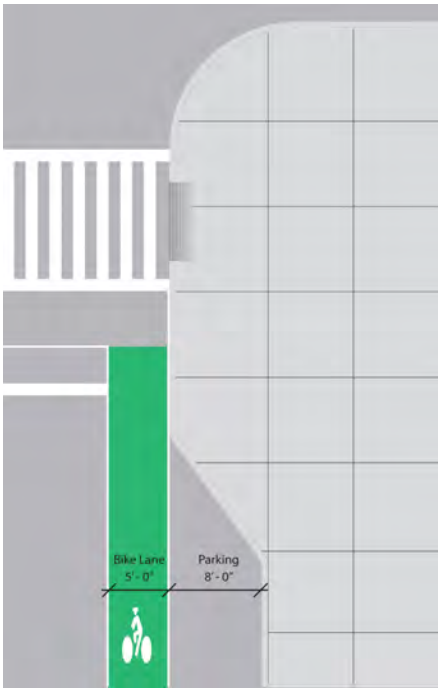


5 Feet additional space required

Advantages:
- Inexpensive.
- Simple Implementation.

Disadvantages:
- "Dooring" safety issue for bicyclists.
- No improvement for pedestrians.

Option 2: Standard Bike Lane with Curb Extension

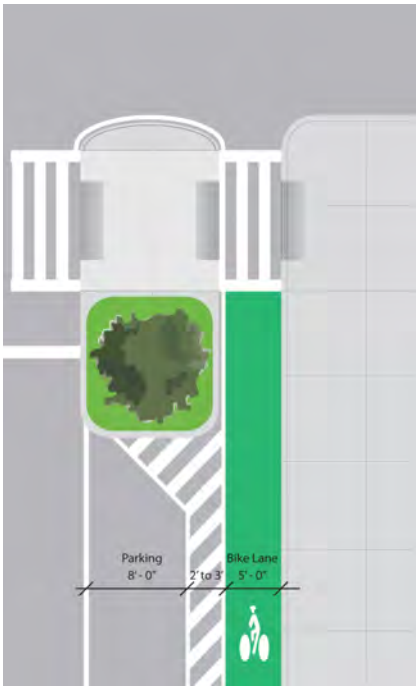


5 Feet additional space required

Advantages:
- Shorter pedestrian crossing distances.
- Slower turning vehicles.

Disadvantages:
- Expensive (relocation of water drainage & manholes).
- "Dooring" safety issue for bicyclists.

Option 3: Protected Bike Lane



7-8 foot additional width required.

Advantages:
- Improved bicycle safety.
- Shorter pedestrian crossing distances.
- Landscaping.
- Less expensive than Option 2.
- Allows for turn lanes as needed.

Disadvantages:
- Requires 2-3 foot additional width.

FIGURE 10: BICYCLE LANE ALTERNATIVES

SOURCE: BFJ PLANNING

Table 1: Minimum Required Bicycle Parking Spaces (Portland, Oregon)

Use Categories	Specific Uses	Long-term Spaces	Short-term Spaces
Residential Categories			
Household Living	Multi-dwelling	1.5 per 1 unit in Central City plan district; 1.1 per 1 unit outside Central City plan district	Household Living 2, or 1 per 20 units
Group Living		2, or 1 per 20 residents	None
	Dormitory	1 per 8 residents	None
Commercial Categories			
Retail Sales And Service		2, or 1 per 12,000 sq. ft. of net building area	2, or 1 per 5,000 sq. ft. of net building area
	Temporary Lodging	2, or 1 per 20 rentable rooms	2, or 1 per 20 rentable rooms
Office		2, or 1 per 10,000 sq. ft. of net building area	2, or 1 per 40,000 sq. ft. of net building area
Commercial Parking		10, or 1 per 20 auto spaces	None
Commercial Outdoor Recreation		10, or 1 per 20 auto spaces	None
Major Event Entertainment		10, or 1 per 40 seats or per CU review	None
Institutional Categories			
Manufacturing And Production		2, or 1 per 15,000 sq. ft. of net building area	None
Warehouse And Freight Movement		2, or 1 per 40,000 sq. ft. of net building area	None
Industrial Categories			
Basic Utilities	Light rail stations, transit centers	8	None
Community Service		2, or 1 per 10,000 sq. ft. of net building area	2, or 1 per10,000 sq. ft. of net building area
	Park and ride	10, or 5 per acre	None
Parks And Open Areas Per		Per CU review	CU review
Schools	Grades 2 through 5	2 per classroom, or per CU or IMP review	None
	Grades 6 through 12	4 per classroom, or per CU or IMP review	None
	Colleges Excluding dormitories (see Group Living, above)	2, or 1 per 20,000 sq. ft. of net building area, or per CU or IMP review	2, or 1 per 10,000 sq. ft. of net building area, or per CU or IMP review
	Medical Centers	2, or 1 per 70,000 sq. ft. of net building area, or per CU or IMP review	2, or 1 per 40,000 sq.ft. of net bldg area, or per CU or IMP review
	Religious Institutions	2, or 1 per 4,000 sq. ft. of net building area	2, or 1 per 2,000 sq. ft. of net building area
Daycare		2, or 1 per 10,000 sq. ft. of net building area	None
Other Categories			
Aviation And Surface Passenger Terminals, Detention Facilities		Per CU Review	Per CU Review

Note: Wherever this table indicates two numerical standards, such as "2, or 1 per 3,000 sq. ft. of net building area," the larger number applies.

3.4 Bicycle Racks as Functional Street Art

Bicycle racks are a highly visible street furniture element. Rather than an eyesore, bicycle racks can be designed to send a positive visual message. The Akron Bicycle Plan provides a variety of short-term and long-term bicycle storage designs. One way to raise awareness and promote cycling as a sustainable, mainstream transportation option is to have unique bicycle racks that brand cycling in the urban landscape. Other cities such as New York have had design competitions to tap the creative energies of the community. Custom designed bike racks may also inspire local businesses to sponsor more bike racks

NYC Bike Rack Competition – Winning Design

Creative bicycle rack design

4 Complete Streets

Complete streets are those which are comfortable, liveable, and safe for pedestrians, bicyclists, transit riders, people with disabilities, as well as motorists. Complete street designs help ensure that all users can safely and conveniently use these public spaces. While traditional roadway engineering philosophies have tended to center on how best to accommodate the automobile, the complete streets concept takes into consideration how a right-of-way serves all potential users in a community.

Complete Street policies have been embraced by states and communities around the country as a way to improve safety, lower transportation costs, provide alternatives to private cars, encourage health through walking and biking, create a sense of place, improve social interaction, and generally improve adjacent property values. In May, the Safe and Complete Streets Act of 2011 (H.R. 1780) was introduced at the federal level, which would require state transportation officials to consider complete street best practices in every phase of planning and development. Some states have adopted "complete street concepts" in their state legislation.

Complete streets vary by design and function, depending in large part on the surrounding land-use activities and context, and depending on their width. There is no "one-size-fits-all" design standard for a complete street. A complete street may include: sidewalks, bike lanes (or wide paved shoulders), special bus lanes, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, and more.

4.1 Neck Downs

Neckdowns narrow the crossing distance for pedestrians and slow down cars that are turning; this reduces the number of pedestrians struck by turning drivers. Capital improvement costs are a consideration with neckdowns. Installing neckdowns can cost over one hundred thousand dollars per intersection because the drainage, signage, electrical conduits, and lighting infrastructure may have to be reconstructed. Due to the high costs of installation, priority should be given to intersections where no drainage modifications are required or to intersections that are close to schools, churches and other areas with high pedestrian activity. Intersections with high pedestrian injuries should definitely be considered for neckdowns.

4.2 Roundabouts

Roundabouts are an effective way to increase the capacity, reduce vehicle delay and increase safety at certain intersections. The most appropriate locations identified for successful roundabout construction include, but are not limited to the following:

- High accident locations, especially those related to cross movements or turning movements

- Locations with high delays (especially if there is limited space to accommodate lanes of waiting traffic
- Locations where traffic signals are not warranted
- Intersections where it is difficult or expensive to widen the approaches sufficiently to provide the approach width needed for signalized intersections. Roundabouts function well with narrow approaches

It is important not to confuse the successful modern roundabout with the older traffic circles built in the early- or mid-20th century in the United States. The two main deficiencies of old traffic circles are that 1) entering traffic often had the right-of-way, which tended to cause lock-ups at higher volumes; and 2) the circles were often designed for high-speed entries, increasing the likelihood of accidents and making the old traffic circles dangerous. In contrast, the modern roundabout system of yield-at-entry requires that vehicles in the circulatory roadway have the right-of-way and all entering vehicles must wait for a gap in the circulating flow. Also, modern roundabouts are designed for slow entry speeds (typically 15 to 20 mph) making them very safe.


Modern roundabout in Malta, NY

The increased acceptance of roundabouts in the United States is due to two main factors:

Increased capacity and reduced vehicle delay
A high degree of capacity and fluidity can be achieved by the modern roundabout. When greater capacity is required, relatively simple improvements can be implemented such as widening the entries to provide more than one entry lane, and widening the circulatory roadway.

Improved Safety
Roundabout design has consistently proven to be superior in safety to cross intersections. Reduced speeds alone make impacts less likely and less severe when they do occur. Driver error is less likely because the driver who enters the roundabout must be alert to only one traffic movement – he/she looks left for an acceptable gap to enter into the flow. By contrast, a driver at a four-way intersection has to deal with two or three different movements. In a roundabout, no driver can run a red light; therefore, right-angle collisions are not possible. Crashes that might occur are generally side-swipe or rear-end types. The presence of the center island interrupts an otherwise straight path, forcing speed reduction and heightened awareness in the roundabout. It also is worth noting that reduced delays at roundabouts compared to signalized intersections have the effect of decreasing the level of frustration and aggressiveness of drivers. Table 2 shows the safety impacts of modern roundabouts.

Table 2: Safety Impacts of Modern Roundabouts

Type of Roundabout	Converted From[1]	# of Conversions[2]	% Reduction of All Crashes	% Reduction of Injury Crashes
Single Lane, Urban	Stop controlled	12	69%	80%
Single Lane, Rural	Stop controlled	9	65%	68%
Multi-Lane, Urban	Stop controlled	7	8%	73%
Urban	Signalized	5	37%	75%
Total	-	**33**	**47%**	**72%**

Source: Insurance Institute for Highway Safety, March 2000.

[1] Stop controlled intersections are those that have stop signs. Signalized intersections contain traffic signals.
[2] The number of conversions indicates the number of intersections that were converted from either a stop controlled or signalized intersection to a modern roundabout, and that were used for this analysis.

4.3 Bus Stops

Streets that are well designed for transit can encourage more people to get out of their cars and onto the bus. Such streets provide accessible bus stops and assist buses in moving through traffic. In addition, many cities have discovered that bicycling and transit go well together. Providing bicycle parking and bike lanes near bus stops can extend the range that customers can travel to reach transit.

Special attention needs to be given to bus stops where there are dedicated bicycle lanes because there are potential conflicts between bikers and people getting on or off the bus. Bus stops can be accommodated next to separated bicycle lanes by having a combination of roadway improvements and signage to make sure pedestrians, bicyclists and motor vehicle operators are aware of potential conflicts and proceed accordingly. One solution is to have a buffer zone with a speed hump along the bicycle path at the bus stop. This will help to slow down bicyclists and provide a dedicated space for bus loading and unloading. Since the bike route is raised to the level of the sidewalk, passengers won't have to negotiate multiple curbs. Pavement markings and signage will also help indicate cyclists to yield to pedestrians.

The example to the right from Downtown Vancouver shows this type of bus stop next to a separated bicycle lane. The second complete street alternative for Exchange Street shows a comparable configuration (Figure 11c). In this configuration, both bike lanes are on the north side of the street. Since there are fewer streets on the north side of Exchange Street, there would be fewer bicycle/motor vehicle conflicts.

Bus stop next to separated bike lane, Dunsmuir Street, Downtown Vancouver, Canada

4.4 Contraflow Bus Lane

Another complete street strategy is to provide a *contraflow lane*, a bus lane in the opposite direction on what would otherwise be a one-way street. These lanes are usually painted and delineated with a curb or stanchions to separate them from other vehicular traffic. Contraflow lanes sometimes can provide more direct routing for buses when one-way street patterns create detours. Contraflow lanes do not have the same enforcement problems as curbside lanes, since violators are easy to spot and catch. Contraflow bus lanes may also allow bicycles to use them.

Contraflow bus lane – Dublin, Ireland

4.5 Complete Street and Road Diet Design Scenarios

Complete street recommendations are illustrated for several key roads in Downtown Akron (Table 3). Many of the roads are currently operating at a level of service A or B during peak hours. All of the streets studied were determined to have sufficient traffic capacity and could eliminate a lane of traffic while maintaining efficient vehicular movement. The key factor in designing the street is to maintain the required capacity at the signalized intersection through the provision of left-turn and/or right-turn lanes. Figures 11-16 illustrate how a "road diet" can improve a street by removing a travel lane from a roadway and utilizing the space for other uses and travel modes. These improvements will improve the safety of the street compared to existing conditions primarily because of reduced speeds and protected car and pedestrian movements. In addition to a "road diet" the road configurations illustrate some or all of the following complete street features:

- Landscaped median that could also serve as a pedestrian refuge at major intersections
- One-way street conversion to two-way street
- Dedicated bicycle lanes (buffered with striping or placed inside of parking lane when possible to separate them from the vehicular lanes)
- Trees and landscaping in pedestrian refuge area
- Bus stops
- Contraflow bus lane
- Addition of on-street parking
- Roundabout (Innerbelt and Main Street intersection only)

The complete street design scenarios show how the improvements above can be incorporated into Akron's existing right-of-way. These scenarios would not require the acquisition of any property and could mostly be accomplished through restriping and painting. Some improvements such as bicycle lanes and bus stops should be prioritized along certain roads (see Sections 3 & 5). For example, bicycle lanes should be a priority along Exchange Street and Mill Street for east-west access, and along High Street and Broadway for north-south access. Based on preliminary traffic

data, it is believed that a road diet with bicycle lanes is feasible for Market Street. Although bicycle lanes on Market Street and Main Street are not a high priority, they should be considered in the long term. The design alternatives for Market Street show how the street could be reconfigured in two phases, where phase 1 incorporates on-street parking into the street and phase 2 has incorporates protected bicycle lanes.

Buses are an integral part of the plan; however, the locations for bus stops shown in the design scenarios are used to show how these facilities can be accommodated, even along streets with protected lanes. For example, the second alternative for Exchange Street shows how the complete street configuration might look if bus stops were implemented along the corridor. The exact routes and placement of bus stops will require further study and cooperation amongst stakeholders including the City, METRO and UPA.

Table 3: Complete Street Design Scenarios

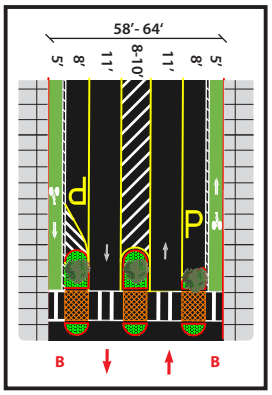
Street	Average Daily Traffic (ADT)	Existing Configuration	Proposed Configuration
Exchange Street Alternative 1 (Figures 11a/b)	~ 20,000–24,000	2 lane, 2 way road with left turn lanes and intermittent parking	2 way road, one through lane in each direction, with bicycle lanes, left turn lane, intermittent parking
Exchange Street Alternative 2 (Figure 1c)	See Above	See above	2 way road, one through lane in each direction, with bus stop, 2-way bicycle path, left turn lane, intermittent parking
High Street (Figure 12)	~ 5,000-8,000	3 lane, one-way road with intermittent parking	Two-way road, 1 through lane in each direction, with bicycle lane, left-turn lane and intermittent parking
Broadway with Contra-Flow Bus Lane (Figures 13a/b)	~ 4,000-12,000	4 lane, one-way road	One-way road, with contrafllow lane, bicycle lane, left-turn lane, intermittent parking and bus stops
Market Street and Forge Street Phase 1 (Figure 14a)	Market St: ~17,000–18,000 Forge St: ~4,000	Market St: 2 lane, 2 way road with left turn lanes Forge St: 2 lane, 2 way road	Market St: 2-way road, two through lane in each direction, with intermittent parking Forge St: 2 way road, one through lane in each direction, with bicycle lanes, left turn lane and landscaped median
Market Street and Forge Street Phase 2 (Figure 14b)	See Above	See Above	Market St: 2 way road, one through lane in each direction, with bicycle lanes, left turn lane, intermittent parking Forge St: See above
Innerbelt and Main Street Roundabout (Figure 15)		Intersection of 2 roads with 2 lanes/2 way lanes with left turn lanes	2 lane roundabout with landscaped medians
Main Street (Figure 16)	~ 7,000-9,000	2 lane, 2 way road	1 lane, two-way road with angled parking, sharrows, left turn lanes

ADT Source: AMATS (http://www.amatsplanning.org/traffic-count-data/

Exchange Street and Union Street

Existing Configuration:
2 lane, 2-way road with left turn lanes and intermittent parking

Proposed Configuration:
2-way road, one through lane in each direction, with protected bicycle lanes, left turn lane, intermittent parking



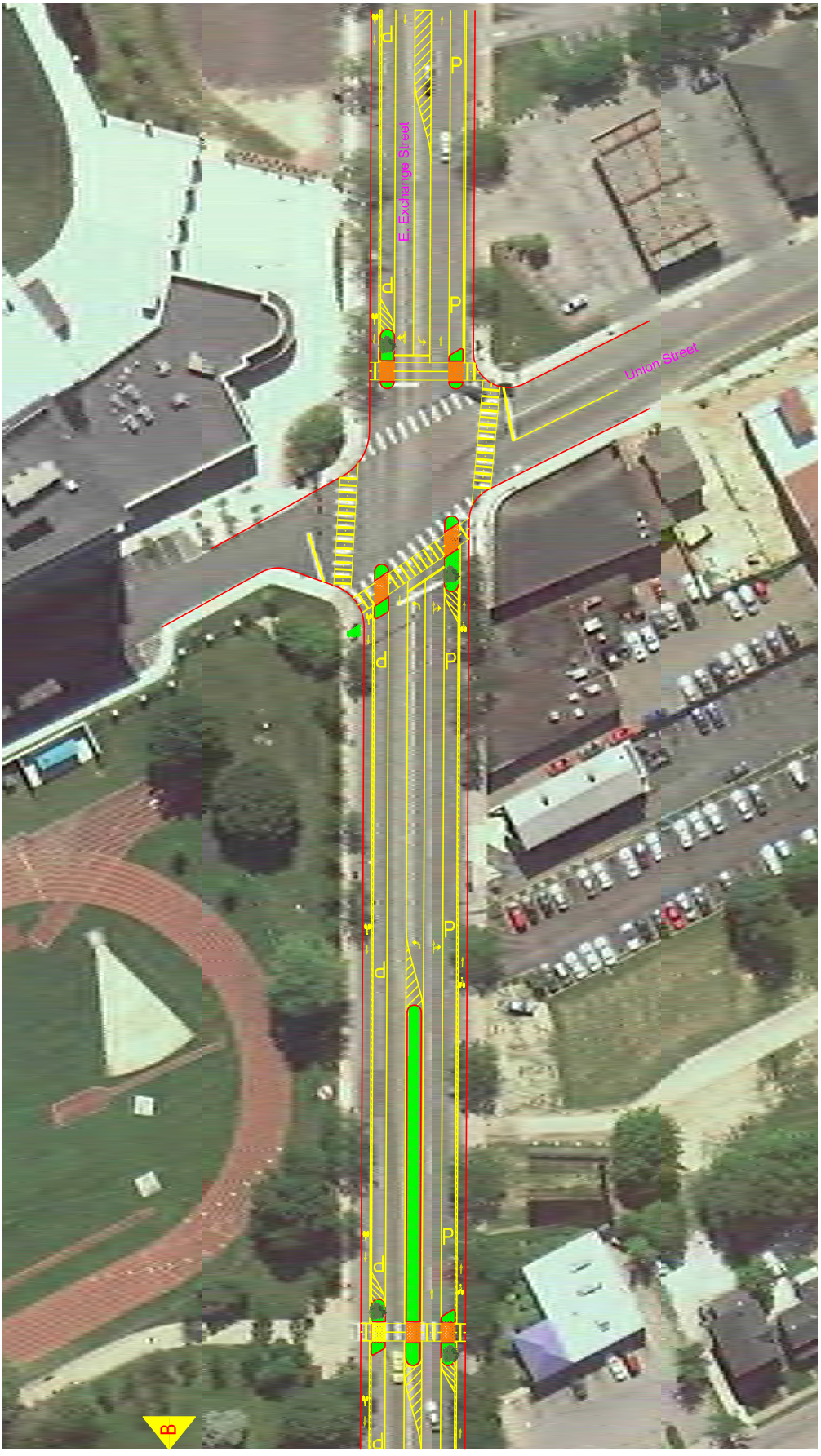
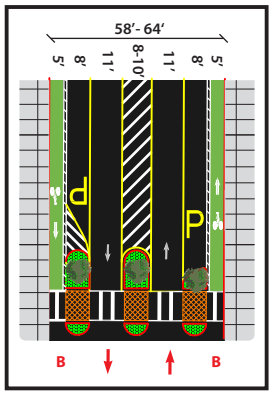


FIGURE 11 (A): EXCHANGE STREET - COMPLETE STREET CONFIGURATION

SOURCE: BFJ PLANNING

BFJ Planning

Exchange Street between King Street and Sumner Street (Continued)



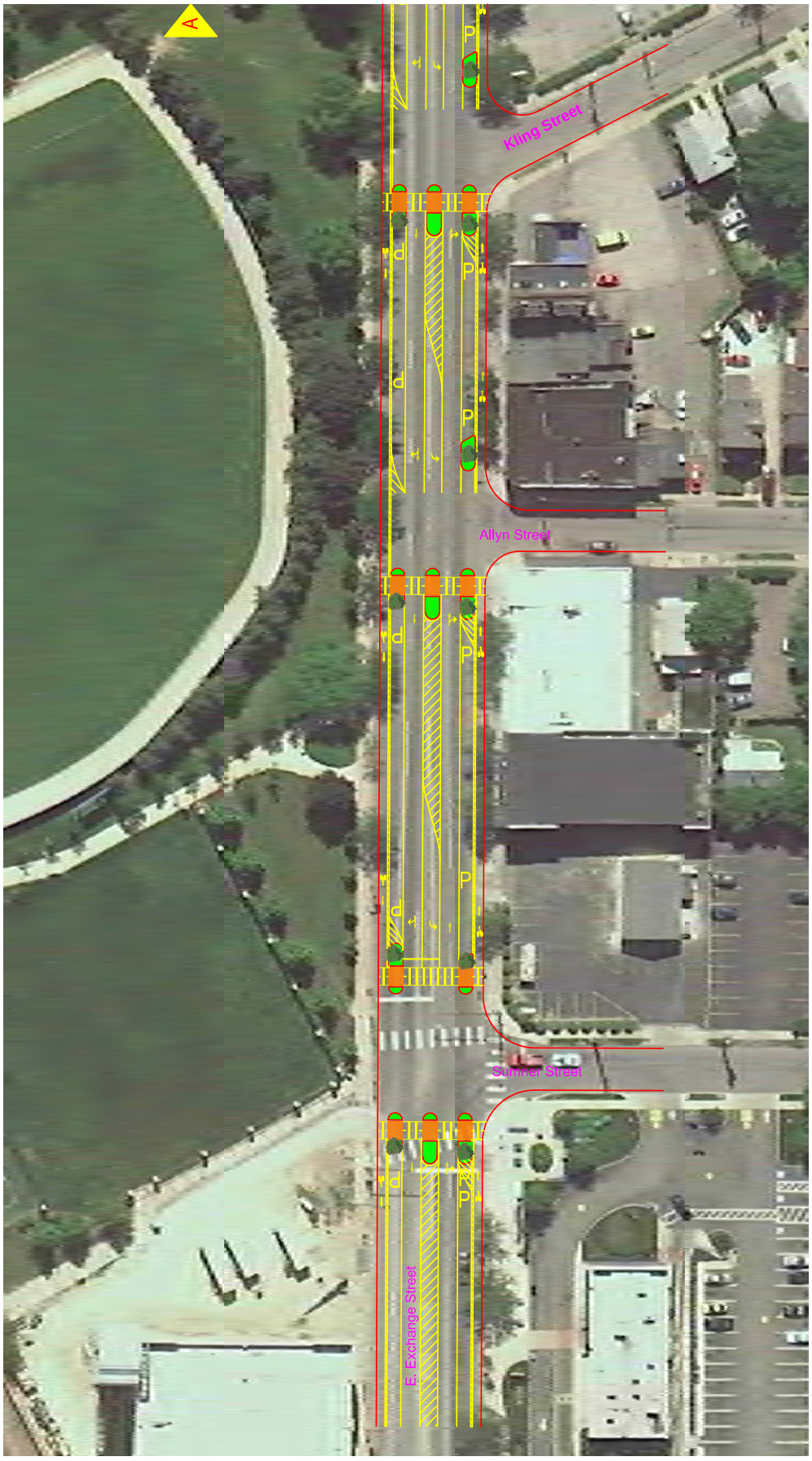
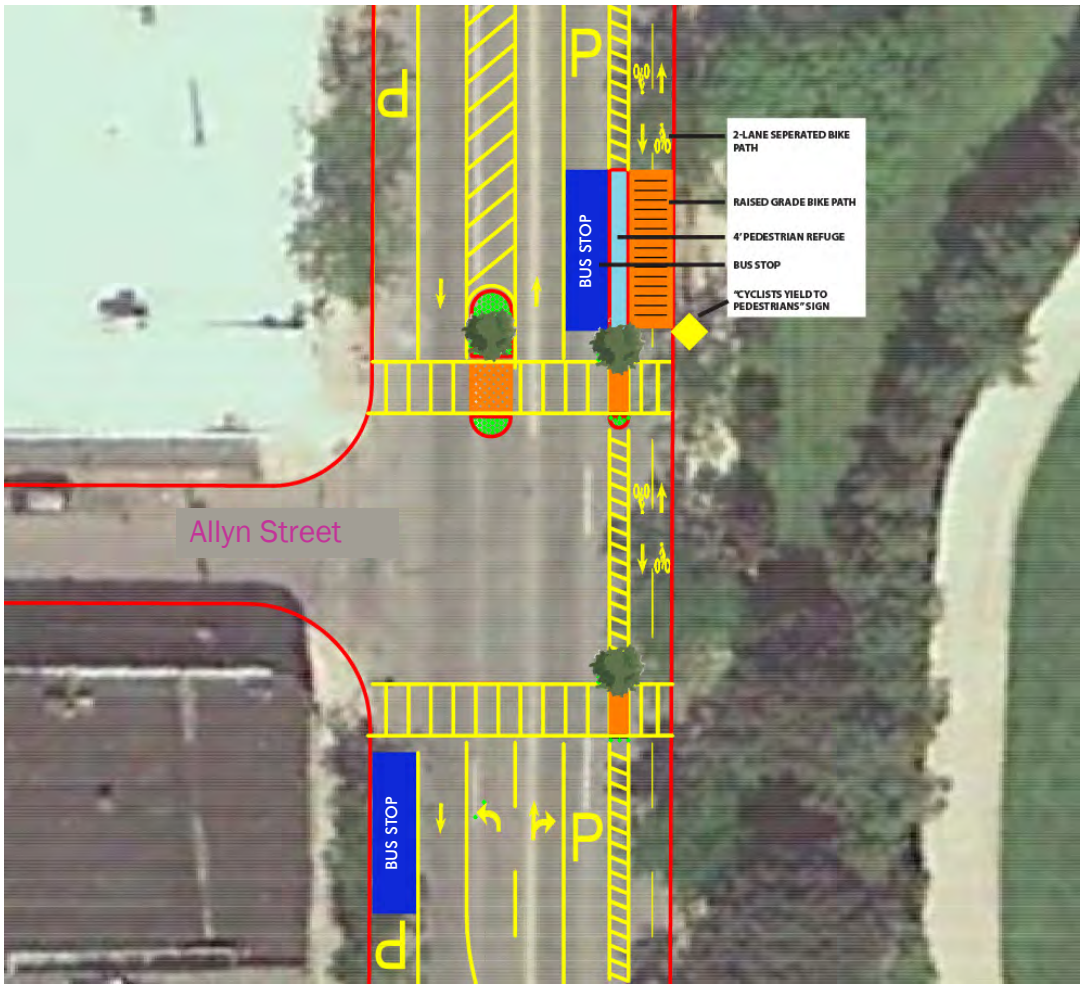


FIGURE 11 (B): EXCHANGE STREET - COMPLETE STREET CONFIGURATION

SOURCE: BFJ PLANNING



Exchange Street Complete Street Concept with bike lanes, on-street parking and left turn lane

Bus stops on 2-way bike path, Dunsmuir Street, downtown Vancouver, Canada

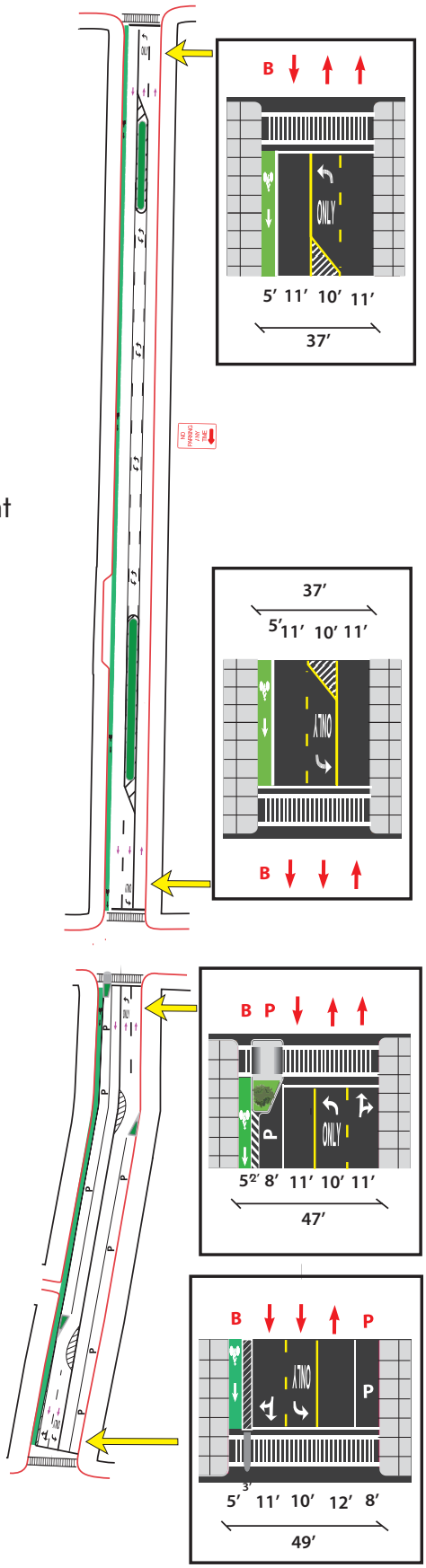
FIGURE 11 (C): EXCHANGE STREET - COMPLETE STREET CONFIGURATION WITH BUS STOPS

SOURCE: BFJ PLANNING

High Street between Market Street and Mill Street

Existing Configuration:
3 lane one way road (south-bound) with intermittent parking

Proposed Configuration:
2-way road, 1 through lane in each direction, with southbound bicycle lane, left-turn lane and intermittent parking



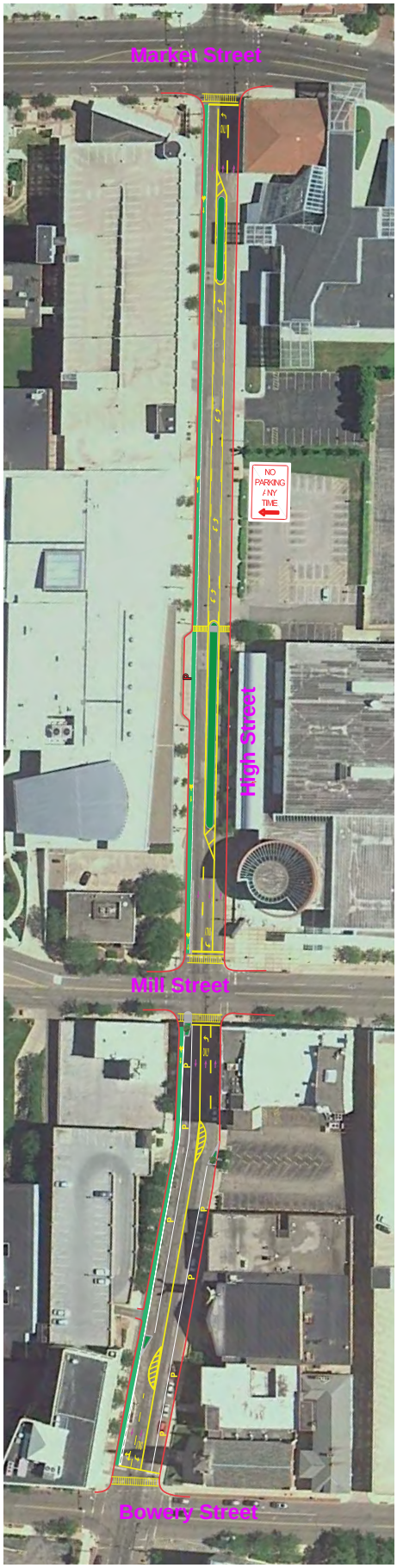


FIGURE 12: HIGH STREET - COMPLETE STREET CONFIGURATION

SOURCE: BFJ PLANNING

Broadway between Mill Street and Bowery Street

Existing Configuration:
4 lane, one-way road

Proposed Configuration:
One-way road, with contrafl-low lane, bus stops, north-bound protected bicycle lane, left-turn lane and intermittent parking

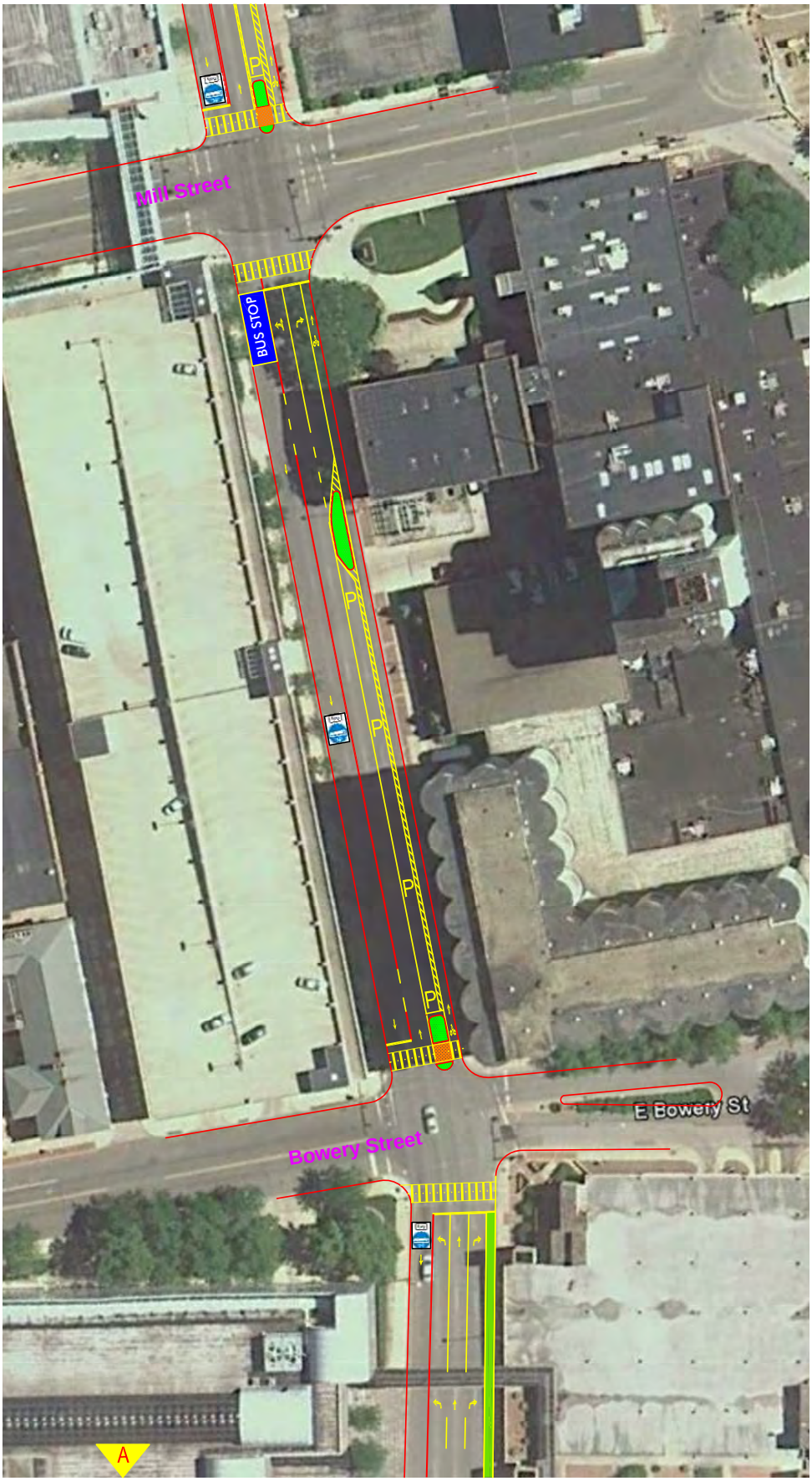


FIGURE 13 (A): BROADWAY - COMPLETE STREET CONFIGURATION WITH CONTRA-FLOW BUS LANE

SOURCE: BFJ PLANNING

BFJ Planning

Broadway between Bowery Street and University Ave (continued)

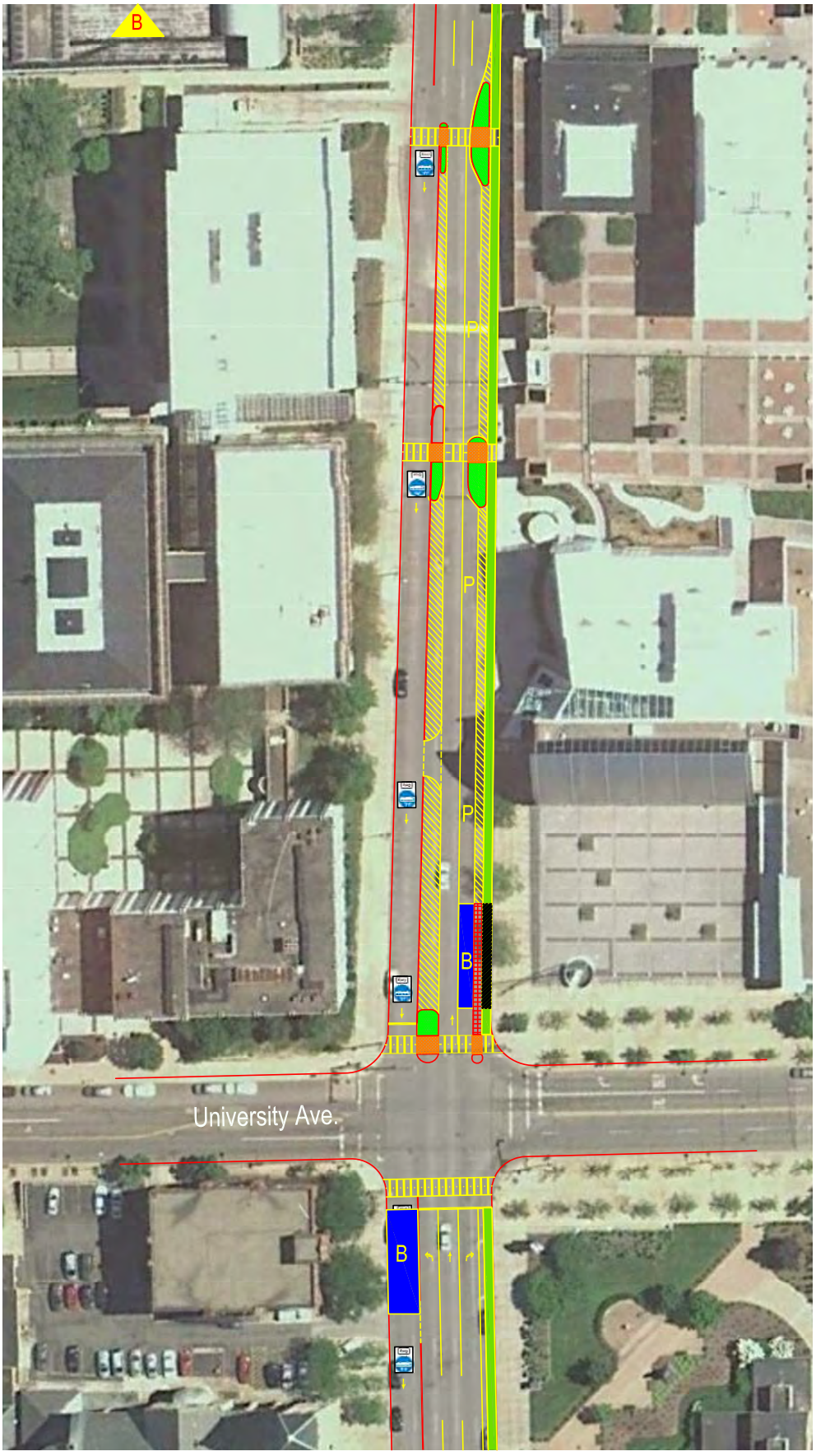


FIGURE 13 (B): BROADWAY - COMPLETE STREET CONFIGURATION WITH CONTRA-FLOW BUS LANE

SOURCE: BFJ PLANNING

BFJ Planning

Forge Street and Market Street - Phase 1

Market Street:

Existing Configuration:
2 lane, 2 way road

Proposed Configuration:
Slight road diet, intermittent on-street parking

Forge Street:

Existing Configuration:
2 lane, 2 way road

Proposed Configuration:
2 way road, one through lane in each direction, with bicycle lanes, left turn lane and landscaped median

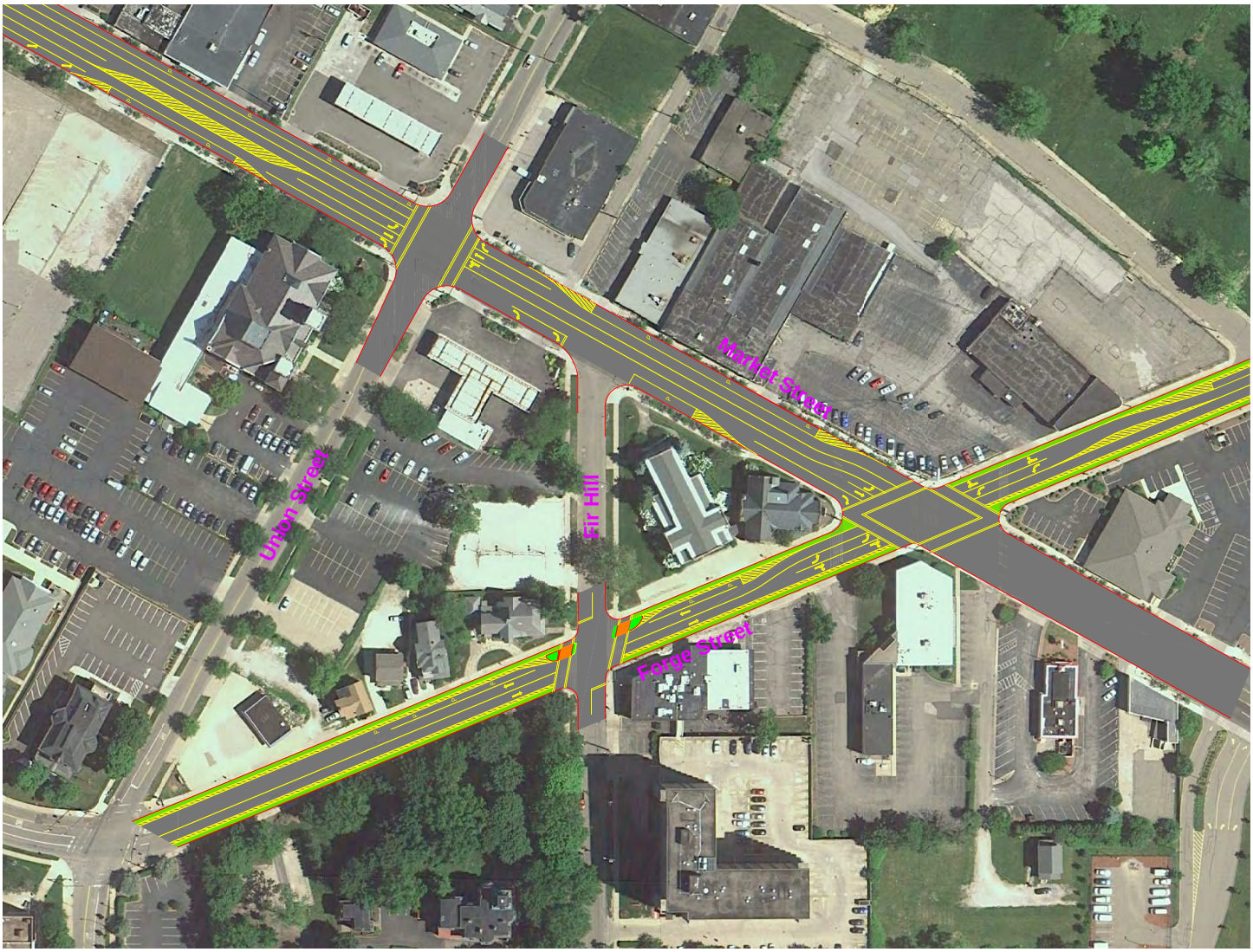


FIGURE 14A: FORGE STREET - PHASE 1 CONFIGURATION

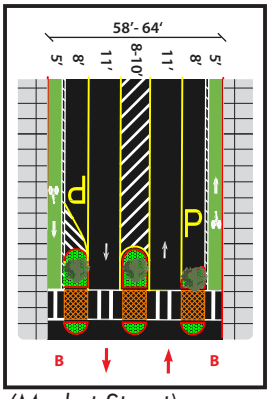
SOURCE: BFJ PLANNING

Forge Street and
Market Street - Potential Phase 2

Market Street:

Existing Configuration:
2 lane, 2 way road

Proposed Configuration:
2 way road, one through lane in each direction, with protected bicycle lanes, left turn lane and landscaped median



(Market Street)

Forge Street:

Existing Configuration:
2 lane, 2 way road

Proposed Configuration:
2 way road, one through lane in each direction, with bicycle lanes, left turn lane and landscaped median

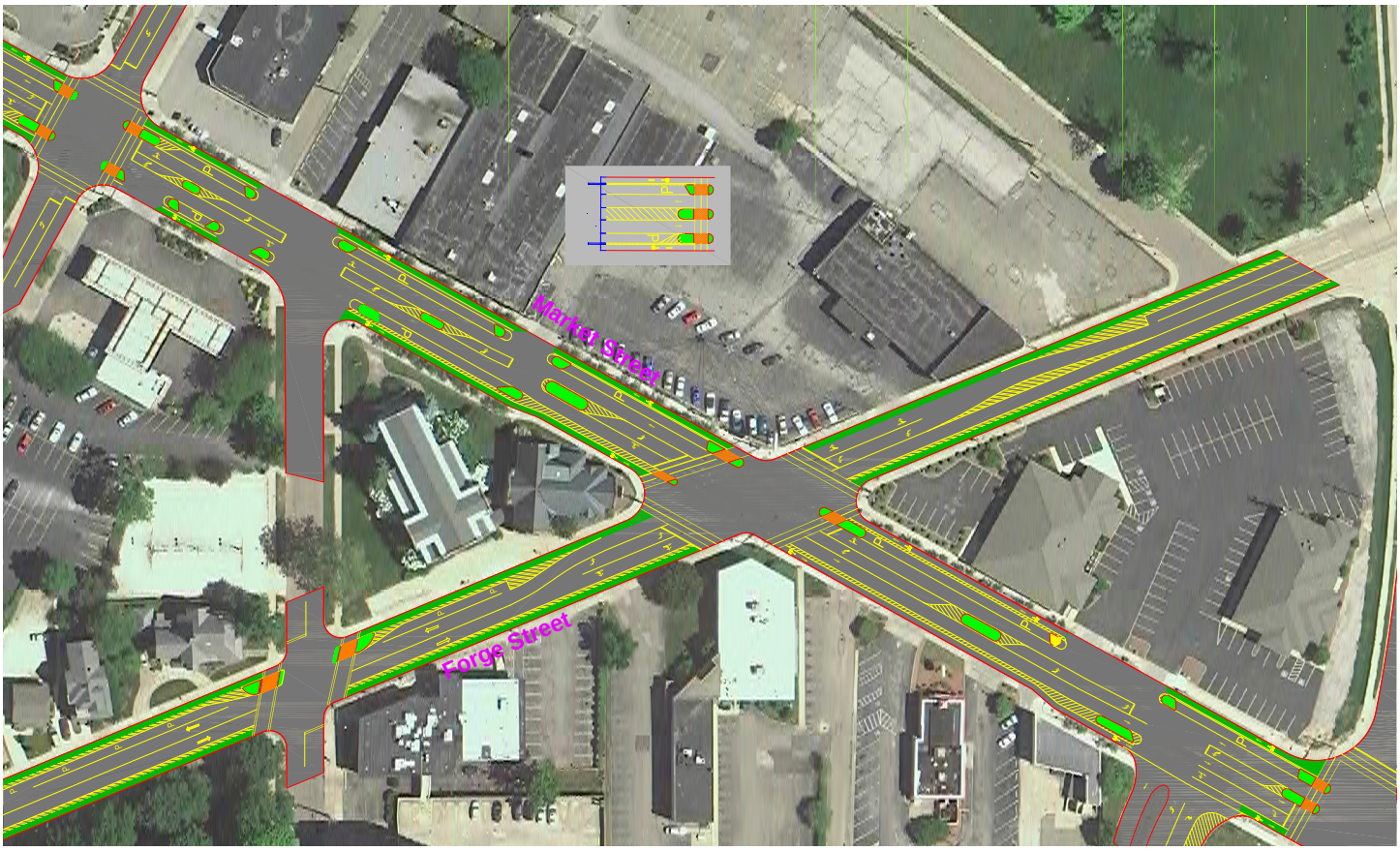


FIGURE 14B: FORGE STREET - PHASE 2 COMPLETE STREET CONFIGURATION

SOURCE: BFJ PLANNING

BFJ Planning

Innerbelt and Main Street

Existing Configuration: Intersection of 2 roads with 2 lanes/2 way lanes with left turn lanes

Proposed Configuration: 2 lane roundabout with landscaped medians

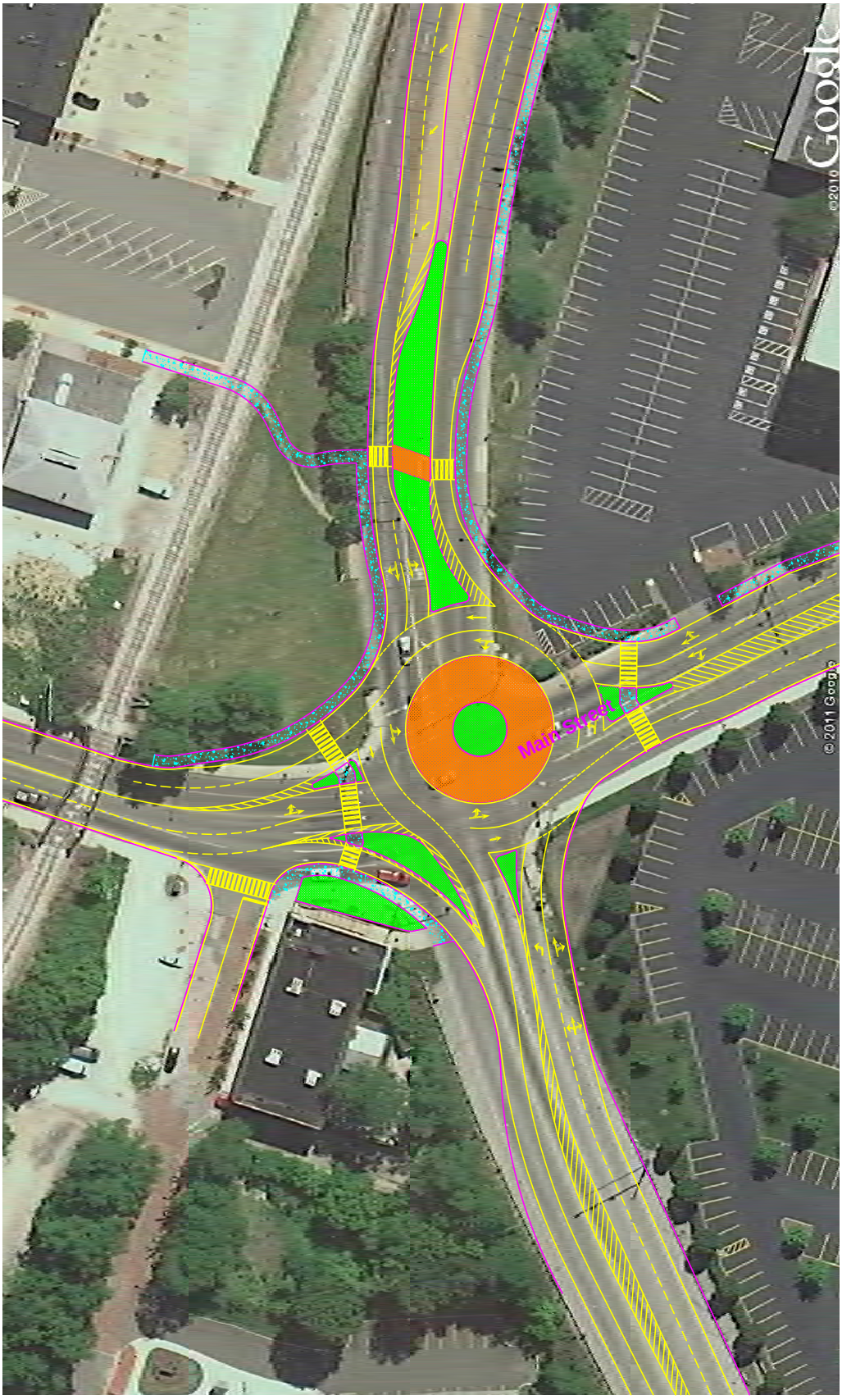


FIGURE 15: INNERBELT AND MAIN STREET ROUNDABOUT

SOURCE: BFJ PLANNING

Main Street between Market Street and Mill Street

Existing Configuration:
2 lane, 2 way road with intermittent parking

Proposed Configuration:
1 lane, two-way road with angled parking, sharrow, turn lanes at intersection

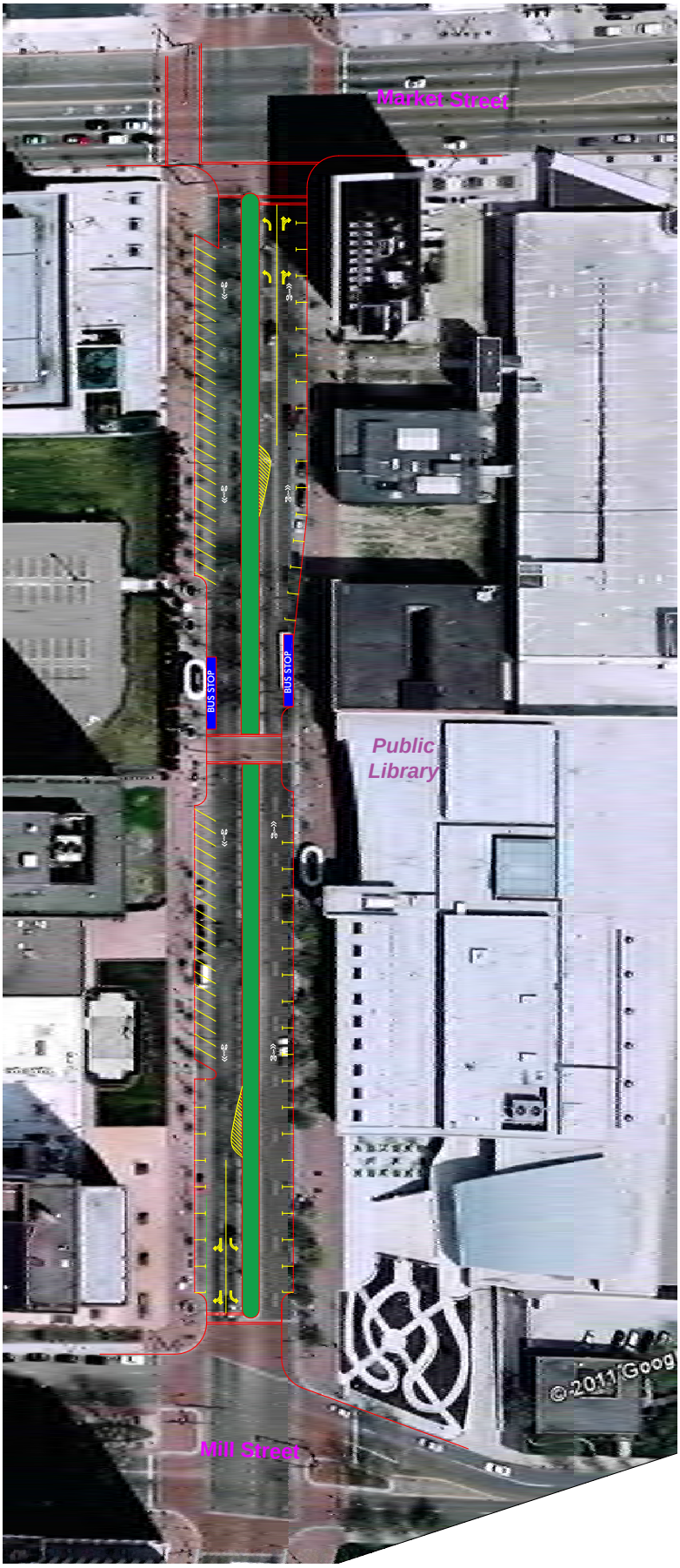


FIGURE 16: MAIN STREET - COMPLETE STREET CONFIGURATION

SOURCE: BFJ PLANNING

5 Transit Improvements

5.1 Circulator Route

One of the transit strategies that is likely to improve downtown connectivity is the operation of circulator shuttles that would serve the major downtown destinations. Figure 17 shows the concept of such a downtown circulator system. The following are the key principles that should be followed for this concept to be successful:

- The routes should be fairly direct and offer time-competitive service, rather than covering every potential destination with large loops that will result in slow and inefficient service.
- The routes should replace some of the existing shuttle services operated by the University or by other entities. As shown in Figure 17 the shuttles would replace some of the ROO routes (but not all), the Friday lunch time shuttle and possibly the service operated by Summa Health System. Depending on the routes and schedules, the circulator routes could also replace some of the regular Metro routes, or at least some of the regular Metro stops.
- The routes should also serve the satellite parking facilities as well as the Transit Terminal

Figure 17 shows potential routings through the center of the University and Summa campus, assuming that the shuttle buses would drive at low speed through these pedestrian zones. This would be a preferred routing because it would bring users to the center of those institutions. Alternative routes are shown in dashed lines if these routes were not possible. This concept needs to be studied in more detail in conjunction with the input from the major stakeholders, to determine its feasibility.

Circulator Route: Downtown Alliance Connector Bus (NYC)

The routes could build on the existing ROO express system which because many of the routes overlap and the existing ROO service has been favorably received by the City. Branding for this circulator route could take advantage of its relationship with the ROO bus. Potential names for the service include the "Roo Circulator", "ROO Connector", "ROO Special", and "ROO Extension."

The circulator routes could be operated with the financial assistance of the major institutions represented by the University Park Alliance, the Downtown Partnership, Metro and the City of Akron.

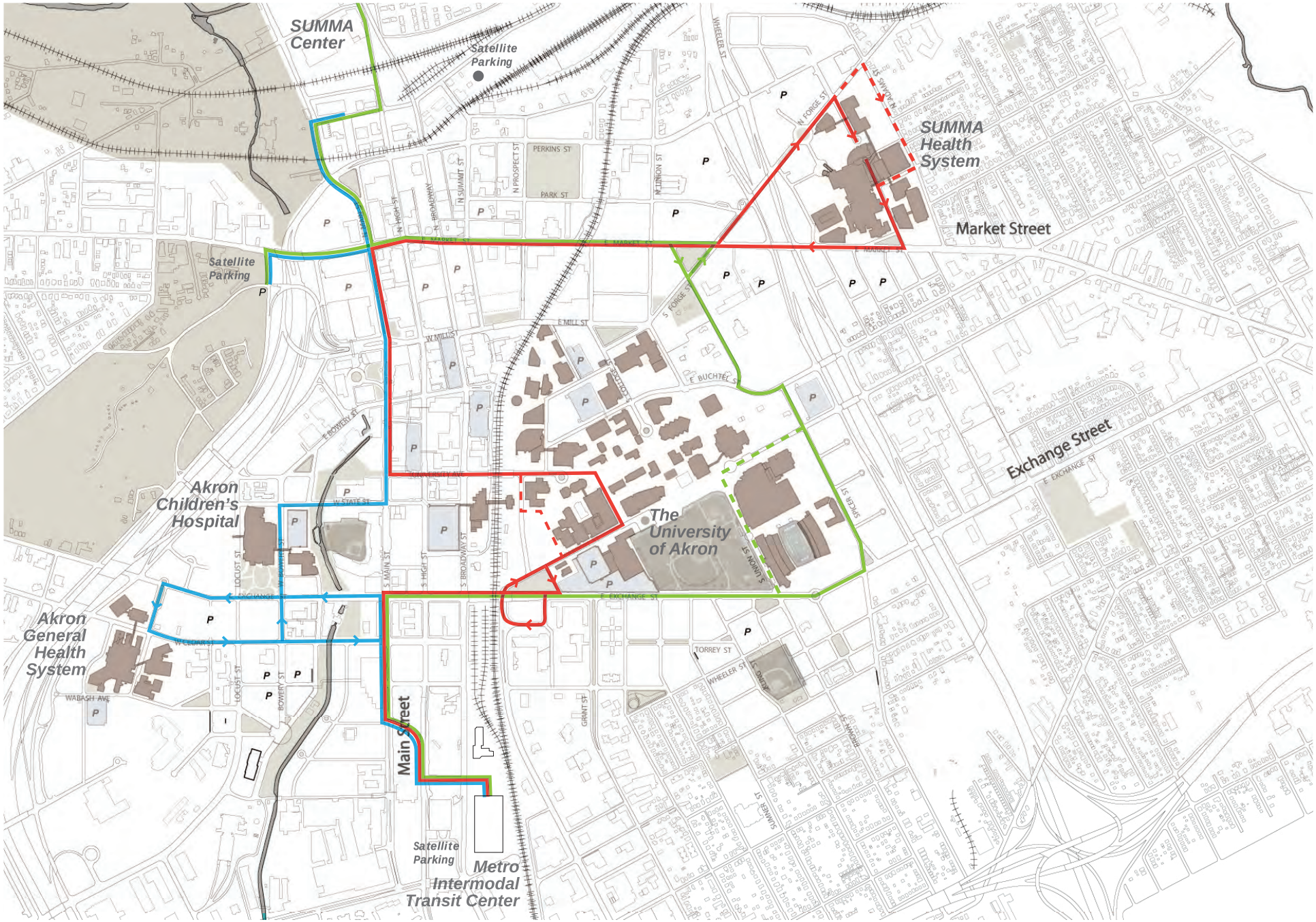


FIGURE 17: POTENTIAL DOWNTOWN CIRCULATOR ROUTES

SOURCE: BFJ PLANNING

5.2 Parking Policies and Strategies

There seems to be a perception of parking shortages in Downtown Akron today, yet there are substantial parking garages that appear to have excess parking all day long. The parking issue in Downtown Akron seems to be largely based on perception and cultural attitudes. The image of employees or visitors walking one or several blocks between their parking location and their destination downtown seems to be foreign in Akron. It seems that drivers expect to always park in or immediately adjacent to the building that they visit or work at. Policy makers have accepted that culture as a given or as a market constraint and have acted in consequence. This "parking culture" is a logical consequence of the way that Downtown Akron and many other downtowns have developed over the last 50 to 70 years: make downtown very accessible to the automobile by bringing cars in and out as fast as possible and as close as possible to their destination. All roads are designed primarily for the automobile, with little or no attention given to the pedestrian friendliness. The extensive skywalks reinforce that parking culture.

It is difficult to change that culture overnight, or to change it without improving the underlying conditions. The main goal of this study is to accelerate the improvement in pedestrian conditions in downtown, and to recommend parking strategies and policies that encourage the change in parking culture, and that will eventually lead to a more friendly and sustainable downtown. From an economic and efficiency point of view, the objective is to reduce the overall parking supply in relation to the economic activity and to improve the utilization of the existing parking supply. The following lists some strategies and policies that will assist in this direction:

5.2.1 Parking Management Study

The first step the city should undertake is to conduct a parking management study to review the existing parking operation and management of parking within the downtown area. This study should include an inventory of all on and off-street parking spaces in the study area and categorize them by type, use, location and regulations. The study should also review the feasibility of strategies and policies recommended in this section.

5.2.2 Parking Ratio Adjustment

Many city zoning codes require too much parking for new developments. As discussed above, in addition to the negative impacts on the downtown area, parking requirements can financially impact owners negatively and be a deterrent to prospective developers. Actual parking demands for retail and restaurant uses in downtown are often significantly lower than in suburban areas, since these uses attract patrons who are already parked as part of their work or residence in downtown. The table below shows typical parking demand ratios for a suburban area and a downtown area.

Table 4: Typical Parking Demand Ratios

Use	Akron Zoning Requirements	Suburban	Urban
Office	5.0 spaces/1000 sf	3.3 spaces/1000 sf	1-2.7 spaces/1000 sf
Retail	5.0 spaces/1000 sf	5.0 spaces/1000 sf	2-3.0 spaces/1000 sf
Restaurant	1 space/4 seats +1 space/2 counter stools	10.0 spaces/1000 sf	2-5.0 spaces/1000 sf
Apartment	1.5 spaces/DU	1.5-2.0 spaces/DU	1.0-1.5 spaces/DU
Hotel	1 space/room + 0.5 space/employee	1.0 space/room	0.5 space/room

The City should discourage reserved or designated spaces, since that leads to inefficient use of the parking supply. In large residential developments, there are always some residents that are out on vacation or business travel. The parking supply can be reduced by 10% if the residential development shifts from reserved spaces to first-come-first-serve parking.

5.2.3 Off-Site Parking and "Park-and-Walk"

The city should encourage a parking management program wherein retail customers, office workers and visitors "park-and-walk" from a satellite parking facility to their destination in the downtown area. This would involve the implementation of a creative branding and wayfinding program to inform the public about park-and-walk opportunities.

Off-site parking has the advantage that it generates walk trips between the main site and the parking facility, thus adding to the local street life. This can have economic benefits for a downtown in that it encourages longer visits and helps create better shopping opportunities. Off-site parking facilities also serve to help mitigate downtown traffic and facilitate shared parking by allowing more than one use for a particular facility. Off-site parking could be accommodated in a walking distance of 800 feet from the project site (subject to approval by the City Planning Board). Eight hundred feet is considered a short walking distance for most destinations.

5.2.4 Parking Wayfinding with Real-Time Availability Signs

The first priority should be to advertize the existence of a substantial parking supply and to inform drivers of the availability of parking at key locations. Wayfinding signage can help visitors easily and quickly find downtown parking facilities. This will also reduce vehicle miles traveled and extraneous traffic circulation. Some wayfinding possibilities include directional signage to parking facilities, signage that lists specific parking options/destinations, and integrated real time parking availability.

Large signs should be installed on major streets entering the downtown area to show drivers the nearest parking garages and the number of parking spaces available. The consistent theme and

design of the signage throughout downtown area reinforces its effectiveness. Examples of integrated real time parking signage are shown in Figure 18.

5.2.5 Paid Parking Downtown and 85% Occupancy Fee Policy

Parking in downtown costs a lot to the property owner (more than $20,000 per space in a parking structure) and also to the community in the sense that it constitutes an unproductive use of land in a part of the City where we want to have a compact arrangement of places of work, retail, residence and cultural and recreational activities. Free parking has detrimental effects on the livability of downtown. The City should adopt a policy that all users whether they are short-term or long-term users, should pay a reasonable fee to park downtown. The principles recommended by Donald Shoup in "The High Cost of Free Parking" should be followed. The fees for parking should be set such that there are always 15% of the spaces vacant. If a particular block tends to be fully occupied with on-street parking, the meter fees should be raised to create the 15% vacancy. This will reduce the extensive driving around the block to find that free or inexpensive space, and it will increase turn-over which is beneficial to the merchants. Once all users have to pay for parking in downtown, the other modes of transportation (bus, carpooling, bicycling and walking) become more attractive, as well as parking in satellite lots.

5.2.6 Municipal or Shared Parking

Downtown areas cannot become pedestrian friendly if each lot has to provide for its own parking, as is the norm in suburban areas where parking facilities for a single use have to be designed to satisfy the peak demand for that use even if that peak occurs only once per week. Such parking facilities are always underutilized for a substantial part of the week. Shared parking consists in combining the parking supplies of several uses. The main advantage of shared parking is that the parking supply can be reduced significantly because of the fact that not all uses peak at the same time. For example, a bank and a church can share parking since they have different peak days. Office buildings can efficiently share parking with restaurants or theaters, since offices require maximum parking during weekdays (generally during the morning hours), while restaurants and theaters require maximum parking during evenings and weekends. The more these uses have different parking demand peaks, the more efficient will be the shared parking strategy. Municipal parking facilities (publically or privately owned) in combination with in-lieu parking fees represent an ideal form of shared parking. The zoning code should therefore allow off-site parking and in-lieu parking fees. In-lieu fees would allow a developer to pay a fee per parking space to the City instead of building its required parking.

Shared parking can apply to a mixed-use development site with two or three uses, or to a particular neighborhood where a multitude of uses share the same parking facilities. The table below summarizes the peak times for various uses.

Table 5: Peak Parking Demand

Weekday Peaks	Evening Peaks	Weekend Peaks
Banks	Auditoriums	Religious institutions
Schools	Bars and dance halls	Parks
Distribution facilities	Meeting halls	Shops and malls
Factories	Restaurants	
Medical clinics	Theaters	
Offices		
Professional services		

Source: Victoria Transport Policy Institute

The percentage reduction in parking demand resulting from shared parking can vary significantly depending on the specific uses and proportions of each use. They could vary from 0% (for an office building and a school) to maybe half for an office and a theatre. The Institute of Transportation Engineers and the Urban Land Institute publish methodologies to calculate shared parking demands. Table 6 shows an example.

As can be seen from the table, the cumulative zoning requirement results in a total of 1,265 spaces, whereas the peak parking demand under a complete sharing situation results in 853 spaces during the evening peak hour. This represents a 33% reduction or a savings of about 412 spaces, a savings of $8 to $10 Million. To allow shared parking the spaces that are to be shared cannot be reserved for individual users. This may become a problem when market perceptions ask for assigned or reserved parking spaces. There are examples of high-end residential developments where the residents do not get an assigned parking space, but are always guaranteed a space.

Table 6: Typical Shared Parking Calculation

Building Use	Size	Peak Parking		Weekday AM (10-11 AM)		Weekday Lunch (12-2)		Weekday PM (3-4)		Weekday Evening (7-8)		Weekday Night (11pm-6am)		Saturday Midday (12-2)	
Seats	1000 Sq. Ft. or Dwelling Units	Ratio	Spaces	%	Cars	%	Cars	%	Cars	%	Cars	%	Cars	%	Cars
Retail	117.6	2.50	294	70%	206	85%	250	75%	221	80%	235	0%	-	100%	294
School	49.0		70	100%	70	100%	70	100%	70	5%	4	0%	-	5%	4
Restaurant	10.0	6.00	60	30%	18	75%	45	50%	30	100%	60	10%	6	75%	45
Health Club	33.0	5.00	165	70%	116	50%	83	75%	124	90%	149	0%	-	75%	124
Medical Office	40.0	3.50	140	100%	140	85%	119	95%	133	20%	28	0%	-	20%	28
Office	18.5	2.50	46.3	100%	46	85%	39	90%	42	10%	5	5%	2	20%	9
Residential	156.0	1.20	187	45%	84	45%	84	45%	84	70%	131	100%	187	60%	112
Cinema 1,200	30.0	0.25	302	0%	-	0%	-	20%	60	80%	242	80%	242	50%	151
Total			1,265		680		690		764		853		437		767

Notes: 1. The peak parking ratio represents the amount of parking that would have to be supplied if each use was built independently on its own lot. This could be the zoning requirement for the particular area or the ratios given for each use by the ITE publication "Parking Generation" 2010 and adjust these ratios for the modal split.

2. The percentages for the presence of each peak parking demand by time period are based on "Shared Parking" by the Urban Land Institute, Second Edition 2005, "Parking Generation" 4th Edition, Institute of Transportation Engineers, 2010, and on BFJ experience.

5.2.7 In-Lieu Parking Fees

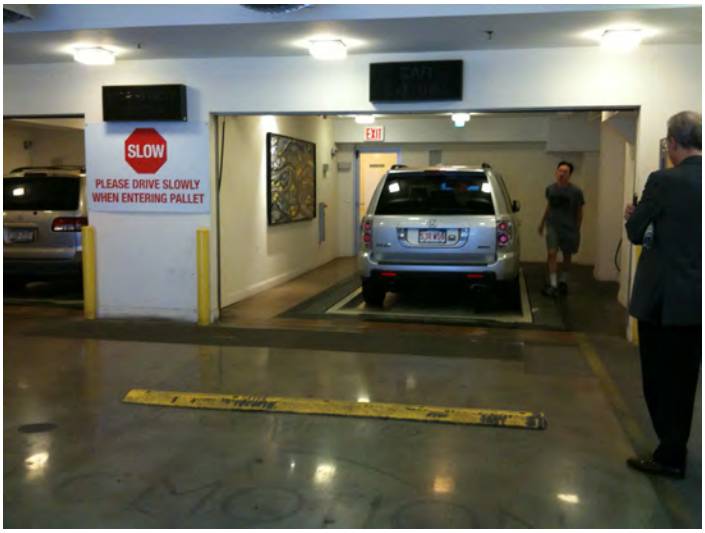
The City should also adopt the policy of in-lieu parking fees. The City would allow or even encourage applicants to pay a per-space fee to the City in-lieu of providing parking spaces on-site or off-site. These fees would be deposited into a special fund reserved for transportation and parking improvements in downtown. To make it easier for smaller businesses, a suggested schedule could be $5,000 per space for the first 5 spaces required, $10,000 per space for the next 10 spaces, and $15,000 per space after that. Instituting in-lieu parking fees assumes that the municipality or the agency that collects the fee will take the responsibility for addressing the parking needs. By addressing the parking need at a municipal level in a public parking facility it automatically becomes shared parking, i.e. much more efficient than individual parking facilities. This gain in efficiency, as well as other factors can be taken into consideration when the City sets the fee schedule.

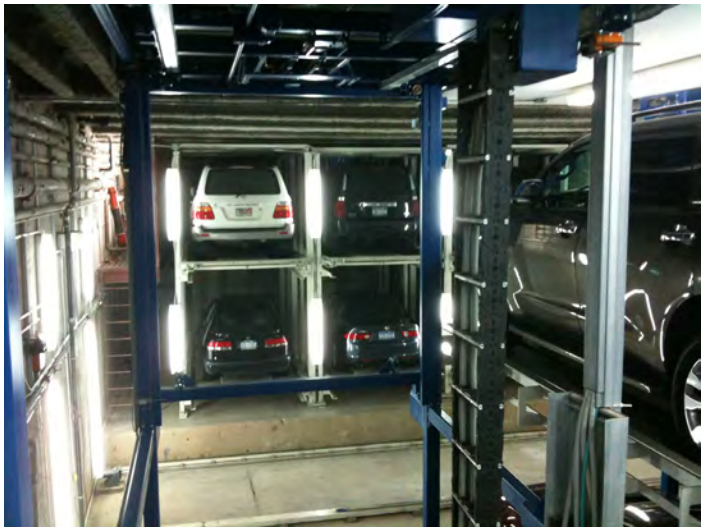
5.2.8 Robotic Parking

In a robotic parking garage the user drives the car onto a pallet and leaves the car there with locked doors. The car and pallet is then moved in various directions and turned 180 degrees and is brought into a storage space. When the user returns the car and pallet are retrieved from their storage location and brought back to the access space turned in the forward position. These robotic garages have significant advantages:

- Much more compact garage (the volume of a robotic garage is only about 35 to 45% of a regular garage)
- Lower operating costs (robotic garages can operate without attendants)
- Greater security (cars stay locked, no walking around in dark stair cases, or garage floors)
- Less pollution (no idling and driving in garage)
- Perfect shared parking (nobody gets a reserved space)
- No damage, no vandalism by parking attendants (the car fit and movements are electronically controlled)

Figure 18 shows examples of the parking strategies discussed above.





Robotic Parking in New York City

Integrated real time parking wayfinding signage family (Des Moines, IA)

Park & Walk Sign

FIGURE 18: PARKING MANAGEMENT STRATEGIES

6 Land-Use Strategies

6.1 Mixed Use Development

There is a significant opportunity in Akron to promote the re/development of a traditional urban/city neighborhood that has a mix of uses; is pedestrian oriented; and provides for a diverse public to live, learn, work and play. An increase in mixed-use development will promote an urban lifestyle typical of thriving urban areas where residences, related commercial and entertainment uses support one another. Further, by promoting mixed-use development and increasing residential density in this area, the City will re-establish a physical and walkable connection between the districts which surround the downtown area.

The past decade has seen a renewed interest in urban living, particularly among the two distinct market segments of younger households and empty nester households. Akron is behind the curve on the national trend toward downtown living and investment in older traditional neighborhoods. Although the market is unproven, a variety of sources point to untapped latent demand for downtown living – demonstrated by the Zimmerman/Volk study commissioned by the city in 2002, the University of Akron's Summit Poll 2002, testimony of the local building community, and the experiences of other regions making new investments in downtown housing. A market study conducted for the Innerbelt corridor stated that with the right sites, developers and development environment, housing and "niche" (specialty downtown retail, culture, and entertainment) retail can thrive in downtown Akron.

In order to foster more walkable and liveable neighborhoods, developments should have a mix of retail, residential and office uses and pedestrian friendly sidewalks. A mixed-use development contains different land uses that are in close proximity. Effective mixed-use are planned as a unified complementary whole, which includes integrating shared vehicular and pedestrian access in the parking areas. Mixed-use developments are often cited as ways to reduce traffic generation, particularly where homes and jobs are planned and developed within easy commuting distance and shopping is located close to residences. People are willing to walk about 1,500 feet – as long as there are points of interest along the way.

As discussed in section 2.1, ground floor retail should have a critical mass of pedestrian-scale uses, such as:

- Retail boutiques
- Hotels
- Grocery stores
- Housing
- Offices
- Artists' studios
- Restaurants
- Entertainment venues

6.2 Infill Development

One way to support more walkable and well functioning neighborhoods downtown is to foster infill development. Infill development is the process of developing vacant or under-used parcels within existing urban areas that are already largely developed. Infill development is the antidote to spread out patterns of growth which have resulted in increased traffic congestion, overstretched public facilities and increased infrastructure costs, reduced open space and other valued community resources and even reduced physical activity.

Fostering infill development of passed-over parcels within Akron could help to create walkable neighborhoods and communities. Infill development has the potential to build on the strength, reinforce and connect adjacent developments. Better use for infill development would be the mixed uses described above as opposed to parking garages, which are not a desirable use, as they do not support ground floor retail or walkable neighborhoods.

Akron has significant opportunities for infill development in or around the downtown area. Two of these opportunity areas include the redevelopment of the existing Akron Innerbelt (S.R. 59) and development over the train tracks. Construction for both of these projects would be expensive and would require high real estate values to reflect the structural costs. However, the cost of rebuilding these projects could potentially be more than offset by the expected economic benefits (investment, jobs and wages) and community benefits (walkability, community linkages, transportation options, etc.).

6.3 Use of Right-of-Way along Railroad Tracks

The train tracks, which run a north-south route through Akron, are a significant physical barrier to pedestrian traffic. If development was fostered around and over the tracks, linkages would be created between the downtown area and the University of Akron. Development should be encouraged that has a mix of land uses, including residential, retail and office uses, in order to make that corridor an extension of the downtown area. While the capital costs for building decking over train tracks would be high, the City should conduct a study to evaluate the feasibility and marketability of such a project. In Akron, the best opportunities for infill development over the tracks exist around University Avenue and Exchange Place.

Columbus, Ohio succeeded in developing retail along an overpass when they widened the I-670 highway. The pictures to the right show how the retail is cantilevered over the highway. This development reduces the visual impact of the highway, allows the neighborhood to be pedestrian friendly and improves the connection between both sides of the highway. As you can see from the picture to the right, from the street level, it is difficult to tell that his is a highway overpass.[1]

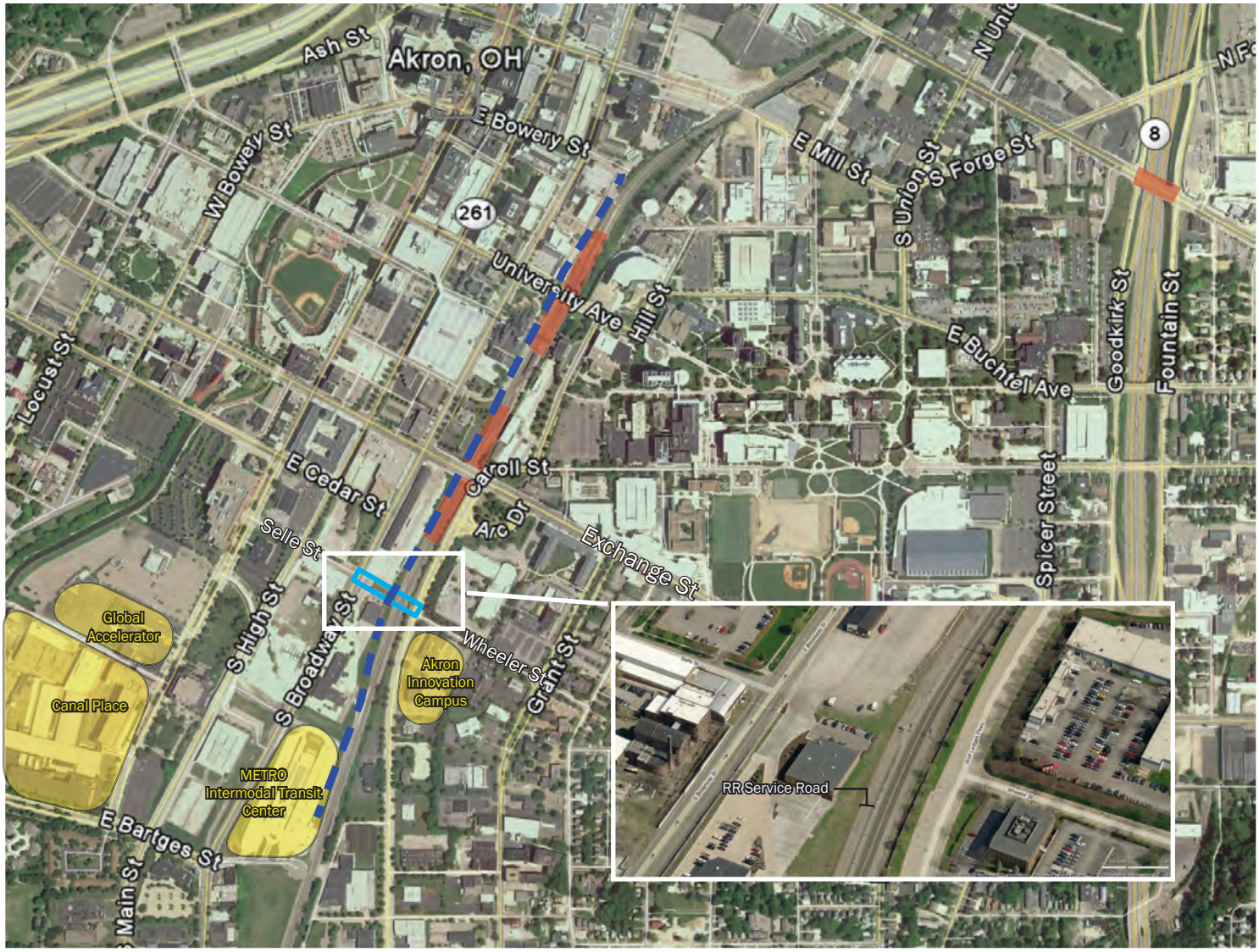
View of back side of development

View of development from street level

A bridge was recently rebuilt along Mill St, which connects the University at Akron's campus to the downtown area. South of Exchange Street, there is a 0.8 mile stretch before the next east-west street at E. Thornton Street. Bridging the tracks at Selle St. and Wheeler St. is an opportunity to connect the University Square District to the Canal District, downtown and the Intermodal Transit Center. There are also a number of employment centers on both sides of the tracks including Canal Place, the Global Accelerator, and the Akron Innovation Campus which would be well served by this increased connectivity.

Another opportunity along the train tracks is to use the right-of-way adjacent to the tracks to build a bus only lane. This could be achieved by connecting the various service roads just east of the train tracks between the Transit Intermodal Center and Bowery St. This lane would be for buses either departing or arriving at the Intermodal Transit Center for outbound or inbound buses. The city should conduct a study to evaluate the feasibility as well as the cost benefit of building these lanes. The potential transit and land use opportunities along the tracks discussed above are shown in Figure 19.

[1] Source: Alex Ihnen, http://nextstl.com/urban-living/how-to-hide-an-interstate-and-connect-a-city



Bridge over tracks connecting Selle St and Wheeler St

Bus only road

Potential infill development over tracks

FIGURE 19: POTENTIAL TRANSPORTATION AND LAND USE IMPROVEMENTS NEAR RAILROAD TRACKS

7 Financing and Implementation Priorities

The purpose of the implementation plan is to outline a series of steps and identify partners that can assist in implementing the recommendations from this study. Table 2 shows a matrix of implementation actions to help guide the recommendations towards realization. It provides a listing of the recommended improvements, cost estimates, potential funding sources, and the associated phasing. Recommended actions are categorized into short-term, mid-term and long-term actions based on when their anticipated year of completion. Short-term goals are recommended to be completed within 1-3 years. Mid-term goals are recommended to be completed within 4-7 years. Long-term goals are recommended to be completed within 8-10 years. Because a recommendation is listed as a long-term goal, that does not preclude it from being started in the short or mid-term.

Table 2: Implementation Priorities

Recommendation	Phase	Lead Agency	Partners	Possible Funding Source
High Priority				
Revise zoning code: • Form based zoning controls • Ground floor design guidelines • Bicycle parking requirements • Parking ratios	Short	City of Akron		City of Akron
Parking policy and occupancy study:	Short	City of Akron	Downtown Akron Partnership, UPA	DAP
Bus Circulator Route Study: • Routes and stops • Operation guidelines • Interaction with Roo Express	Short	UPA	City of Akron, METRO University of Akron	UPA, DAP FTA 5307, FTA 5339
Contraflow bus lane	Short	METRO/City		(AMATS) STP or CMAQ
Design study for complete street examples (in order of importance): • Exchange Street • Market & Forge Street – Phase 1 • Main Street and Innerbelt roundabout • Broadway (with contraflow bus lane) • High Street • Market & Forge Street – Phase 2 • Main Street	Medium	City of Akron	METRO	(AMATS) STP

Recommendation	Phase	Lead Agency	Partners	Possible Funding Source
Medium Priority				
Downtown pedestrian accessibility design study: • Mid-block crossing locations • Neck down locations • Wayfinding signage branding and implementation	Short	City of Akron	Downtown Akron Partnership, UPA	(AMATS) STP
Update Akron bicycle plan • Study new bicycle lanes indicated in Figure 1 • Bicycle rack design (or competition)	Medium	City of Akron	UPA, Downtown Akron Alliance, bicycle advocacy orgs.	STP DAP
Low Priority/Long Term Projects				
Infill feasibility study • Phase 2 of Innerbelt Study (S.R. 59) • Other infill opportunities including decking over train tracks, bus lane along service road and bridging of gap between Selle and Wheeler Streets	Long	City of Akron	UPA	STP