

Beyond Traffic: The Smart City Challenge Akron, Ohio



Challenge Statement

Akron is a city of innovation, continually reinventing itself as its economy continues to evolve. Today, we are a city of 198,000 people, with an infrastructure built for 290,000 people. So, unlike many U.S. cities, Akron's challenge is not to build more infrastructure to accommodate more people and cars. Even with an overbuilt infrastructure, the city still has major challenges surrounding adequate and attractive transportation between downtown and its inner core neighborhoods as well as using and marketing its downtown parking options properly. Our city's challenge is to make smarter, more efficient, and more effective use of the infrastructure that it already has, to better serve its residents, workers, and visitors.

As a city whose economy was heavily based on manufacturing, a sector that has changed rapidly in the past few decades, Akron has experienced substantial population loss over the past 50 years. As such, many formerly vibrant neighborhoods have experienced increasing vacancy and abandonment. Similarly, the transportation corridors that serve these neighborhoods are overbuilt for the amount of traffic that they carry. As neighborhoods have lost homes and stores, social and economic opportunities for the remaining residents have declined along with the population.

Akron has set a goal for itself of again surpassing 200,000 residents by 2020. Beyond that, the city has placed the audacious target of achieving 250,000 residents by 2050. To achieve this goal, the city must attract roughly 7% of the metropolitan statistical area's population to the urban core.

Given current demographic trends, it is increasingly apparent that more Americans are again looking for an urban living experience: well-educated young professionals, immigrants, and members of the Millennial generation, in particular. Cities are increasingly being viewed as not just places for people to work, or to play – but also, to live.

In Akron, we believe that by making our urban core a more attractive and functional place for more people to live, we can begin to attract more residents, who will, in turn, create markets for small business and neighborhood-level retail to grow and to thrive.

Creating this virtuous cycle of population growth, commercial activity, and reinvestment (both social and economic) is extremely important to our city. Over the past 50 years, the story of our city, and that of most of our peers in the nation's industrial heartland has been the opposite – a vicious cycle of population decline, abandonment, and disinvestment.

The size of the population living in the urban core itself has incredibly important ramifications for our tax base; our employment base; the performance of our schools; the distribution of everyday amenities like grocery stores, shops, and restaurants; the delivery of public services; and less tangible, but equally important things like our sense of place and our sense of self.

As our neighborhoods decline and become hollowed out, access to social and economic opportunities diminishes along with the population: jobs disappear, doctor's offices disappear, retail and grocery stores disappear – often relocated somewhere more distant and increasingly inaccessible.

It is the spatial disconnect between the location of residential areas, jobs, and everyday services, which presents some of the greatest social equity challenges for our residents. What, for many lower-income residents, may have previously been a quarter-mile walk to work or to the grocery store has evolved into a long, inconvenient bus ride to the suburbs; or an expensive trip in an unreliable car that serves as a fragile lifeline to social and economic opportunities far from home. For many of these residents, one late bus, or one breakdown of an old car reluctantly purchased due to unavailable transit service, could mean a lost job, leading to financial catastrophe. The technological enhancements to our transportation system that are described in this proposal are a critical component of an overall redevelopment strategy that will help the city reverse population decline, encourage private investment, and improve socioeconomic equity.

Improved management of current downtown parking and the use of the latest available technologies will provide opportunities for Akron to repurpose land in its urban core that is currently devoted to parking for more socially and economically productive uses, such as commercial and residential redevelopment.

Similarly, the establishment of attractive, efficient, and well-designed smart public transit, bicycle, and pedestrian corridors that would follow the routes of our old streetcar system, will serve to improve mobility *and* encourage denser mixed-use development in our urban core neighborhoods. These smart transportation corridors will attract new residents and businesses to our community, and will also provide existing residents with more convenient access to jobs, retail, restaurants and social services.

Millennials graduating from the University of Akron and Kent State University, as well as a growing and energetic population of employed young professionals, seek a vibrant and livable urban core. A significant refugee population, concentrated in the North Hill neighborhood (see Exhibit B), requires improved transportation options to fully participate in the local economy.

In addition, significant health disparities have arisen in the last decade in and around two zip codes in Akron, 44320 and 44307, stemming in large part from a lack of affordable and reliable transportation options. Currently, the African-American infant mortality rate in these zip codes sits at 14 per 1,000 live births. This compared to a rate of 5.7 for Non-Hispanic Whites in other neighborhoods in Akron.

Now, Akron is challenged to yet again reinvent itself. Within the Smart City Challenge lies the opportunity to not only transform existing infrastructure and reverse population decline, it can provide a level of connectivity that could improve the health, welfare and opportunities for current and future generations. For Akron, the promise of technology and enhanced mobility won't just mean improved public safety and a reduction in the city's carbon footprint; it holds the potential to create a stronger level of equity across the community. Akron must create the transportation networks that new generations demand. However, it equally needs to ensure that a newly expectant mother – whose present environment places her and her pregnancy at significant risk – has the ability to choose public transportation options that provide access the care she wants and needs.

Transportation technology can unlock the energy needs to grow Akron and improve the mobility and quality of life for all. At no time since the rapid expansion of the rubber industry, when electric streetcars shuttled workers through neighborhoods to the factories, has Akron been as ready for a transformation in public transit. The proposed vision below matches the spirit of the Smart City Challenge, while recognizing the needs of the citizens of Akron at this time in the city's history.

The Vision

The Smart City challenge project gives Akron an opportunity to leverage the advanced technology of the future with the sound urban design principles of the past. By so doing, it will be able to make its downtown look, feel, and function better than ever before. It will also be able to connect key inner-core neighborhoods to its downtown, by enhancing previous streetcar corridors with advanced technology and cutting-edge urban design practices.

Although this project will leverage the latest and best available transportation technology, it is predicated upon using that technology to make Akron a better-connected community – socially, economically, and environmentally.

Key Components:

- **An Akron Transit Application.** Through Intelligent Transportation Systems (ITS) technology, the transit app would provide a resident or visitor to user-focused mobility choices at their fingertips. Widely available smartphone technology across demographic subgroups can be leveraged to connect and engage Akron citizens with robust multimodal transit options throughout downtown and the surrounding neighborhoods. All use of ITS technology in the components below would link up to this global transit app. Users could also crowd source transit information that could be shared across users in real time. This component matches Vision Elements 3, 4, 5, 9, and 11.
- **A Smart Parking system in Downtown Akron.** This system would improve the experience of downtown visitors, by significantly improving wayfinding, accessibility, and utilization of the city's existing parking infrastructure. The system would utilize ITS technology to transmit available parking to a users' smartphone and on-board vehicle navigation systems, based on their current location and their anticipated destination. On the supply-side, the system would include vehicle sensors in the city's downtown parking decks and selected lots. On the demand-side, the project would create apps and interfaces for

visitors and residents to use their mobile phones and on-board vehicle navigation systems, in order to guide them to the best available spaces. There could be an option for prime or cheaper parking rate spaces for electric cars with an electric connection. This component matches Vision Elements 2, 3, 5, 6, 9, 11, and 12.

- **Bicycle and pedestrian improvements.** Upgrades would be focused in the former streetcar corridors (described below) and would include HAWK (pedestrian-actuated) traffic signals, bicycle infrastructure improvements (including bicycle-actuated traffic signals), a bike-share infrastructure and system, signage (electronic and conventional), and streetscaping such as buffered bike lanes to allow novice cyclists to traverse main roads safely. Ideally, bike-share infrastructure would utilize technology to inform users where available bikes were located via the Akron Transit App. Increased connectivity, particularly between the University of Akron and downtown neighborhoods, would be significant. This component matches Vision Elements 3, 4, 5, 7, 9, 10, 11, and 12.
- **Public transit upgrades.** The upgrades in targeted corridors (described below) would include improved transit waiting environments (including electronic and conventional signage), transit traffic signal priority (using ITS technology), all connecting to a central transit travel apps that would build upon METRO RTA's existing GPS vehicle locator system. By using technology, and artistry in urban design, these former streetcar corridors would be transformed into bus rapid transit corridors, improving transit service quality and boosting ridership. Buses, ideally electric buses, could run to all neighborhoods on a schedule, the transit app will allow you to view a schedule and pay. Additionally, electric or automated car-sharing can be deployed within neighborhoods to transport residents to improved transit waiting environments. This component matches Vision Elements 1, 2, 4, 5, 8, 9, and 11.
- **A downtown transit circulator service.** This would connect the parking decks, nearby attractions, all using ITS technology and connected to the transit app for parking, bike, and public transit. The same electric buses can also run on a downtown-only route, connecting to the neighborhood transit lines. The downtown electric buses can be "ordered" and paid through the Transit App (similar to Uber). This component matches Vision Elements 1, 2, 5, 7, 8, 9, and 11.

Geographic Focus

Downtown

Downtown is the cultural, economic, and governmental center of Akron. It is an important transportation hub for the city as the home to METRO Regional Transit Authority's transit center, which serves as the hub for all fixed-route service throughout Greater Akron, as well as connections to Greyhound and neighboring regional transit authority buses. Downtown is currently home to over 14,000 parking spaces (see Exhibit A), many of which sit empty or underutilized – especially in the evenings and on weekends. Even during the work day between 9:00 a.m. and 5:00 p.m., the city has an average vacancy rate in downtown parking of 23% (see Exhibit D).

Smarter management, and more efficient use of this existing parking (an estimated 188 acres throughout the downtown area), will enable the City of Akron to make much better, and more economically productive use, of some of the land and physical infrastructure that is currently devoted to parking.

The City of Akron is also currently in the process of rethinking the design of its existing street grid Downtown. In addition to an overabundance of parking, the Downtown contains many streets which are wider than is necessary for the amount of traffic that they carry.

Changes to the existing street grid which are either underway, or are in the planning stages, include complete streets redesigns (lane reductions with the space converted to on-street parking and bike lanes); the elimination of one-way pairs of streets; and the closure, reconfiguration, and repurposing of the Downtown portion of the Innerbelt Freeway (State Route 59). The Innerbelt project will free up an estimated 30 acres of land, previously devoted to an underutilized six-lane urban freeway, which can be repurposed for residential, commercial, and recreational uses.

Akron is a city which has been making (and will continue to make) a concerted effort to rethink its legacy transportation system, and is committed to redesigning it in a way that is more socially, economically, and environmentally sustainable. As such, the projects described in this Smart Cities proposal will serve to build upon and enhance many efforts that are already underway.

Highland Square

Highland Square (Exhibits B and C) is an inner-core neighborhood on Akron's west side, located approximately 1.5 miles from Downtown. The neighborhood is currently seeing renewed commercial and residential redevelopment, and is becoming increasingly attractive as a place to live, especially for Millennials and young professionals who are looking to settle in socio-economically diverse, walkable, mixed-use neighborhoods.

Highland Square sits on METRO RTA's Route #1 (West Market), which is the most heavily utilized transit route in its system. West Market Street, which forms the commercial core of the neighborhood, is located on a former streetcar line, and is the street upon which the enhanced public transit, bicycle, and pedestrian corridor would be focused.

Middlebury

Middlebury (Exhibits B and C) is an inner-core neighborhood on Akron's east side, located approximately 1.5 miles from Downtown. The neighborhood is one of the lowest-income areas in Akron, and is currently experiencing high levels of unemployment, poverty, and residential vacancy.

Despite its current challenges, Middlebury is a neighborhood that is well-positioned for growth and redevelopment. Its location is extremely advantageous, as its commercial core (at East Market Street and Arlington Street) is located within one-half mile of the City of Akron's three largest employers and economic engines – Summa Health System, Goodyear Tire & Rubber and the University of Akron.

Middlebury sits on METRO RTA's Route #2 (South Arlington) and Route #6 (East Market). Route #2 is the second-most heavily utilized bus route in the regional transit system. East Market Street, which forms the commercial core of the neighborhood, directly links the neighborhood to Downtown, Summa Health and Goodyear.

East Exchange Street, another important arterial serving the neighborhood, directly links Middlebury with the University of Akron. Both East Market and East Exchange streets are former streetcar lines, and both would serve as focal points of the enhanced travel corridor.

North Hill (Temple Square)

North Hill (Exhibits B and C), and its commercial core of Temple Square, is an inner-core neighborhood on Akron's north side, located approximately 1.5 miles from Downtown. The neighborhood is currently experiencing a resurgence of commercial and residential development, as thousands of immigrants from South Asia (primarily Bhutan, Nepal, and Burma) have settled there since 2008.

The recent immigrants to North Hill have helped to reestablish its traditional character as a walkable, mixed use neighborhood. Many of the residents either do not own vehicles, or have limited access to a vehicle, and instead rely on walking, biking and public transportation to get to where they need to go.

Temple Square sits on METRO RTA's Route #7 (Cuyahoga Falls Avenue). This route follows a former streetcar line, and the land uses and building stock along it still reflect its character as a heavily-utilized streetcar and inter-urban railroad line.

North Hill was also the site of last year's Better Block event, which according to national organizers in Dallas, was the largest Better Block event ever held in the United States. The Better Block itself, and subsequent community development efforts, involving both long-time North Hill residents and recently-arrived immigrants, have served to create a high demand for urban revitalization and transportation enhancements along North Main Street and Cuyahoga Falls Avenue, which would serve as focal points of the enhanced travel corridor.

Kenmore

Kenmore (Exhibits B and C) is an outer-ring neighborhood on Akron's southwest side, located approximately 3 miles from Downtown. The neighborhood developed in the 1920's as a streetcar suburb of Akron, and was annexed by the City of Akron in 1929.

Kenmore is a working-class, middle income neighborhood that contains an incredibly well-preserved (but currently underutilized) commercial core of historic buildings that extends for several blocks. This business district is located along Kenmore Boulevard, a former streetcar line which connected Akron with the neighboring city of Barberton.

Kenmore sits on METRO RTA's Route #8 (Kenmore/Barberton). This well-utilized bus route, and the historic streetcar-focused business district that it serves, represent an incredible opportunity for renewed commercial and residential redevelopment in an older neighborhood that is looking to reinvigorate itself. Kenmore Boulevard would serve as the focal point of the enhanced travel corridor.

Firestone Park

Firestone Park (Exhibits B and C) and its commercial core of Aster Avenue, is an outer-ring neighborhood on Akron's south side, located approximately 3.5 miles from Downtown. The neighborhood developed in 1915, as a planned allotment to house the workers of the adjacent Firestone Tire & Rubber Company.

Firestone Park is one of the best examples in the United States of previous corporate benevolence that resulted in a historic, well-planned, beautifully configured neighborhood. From the eponymous park in its center (shaped like the Firestone corporate logo), to its library, elementary school, and adjacent business district, Firestone Park, to this day, remains one of the most attractive and economically stable neighborhoods in the City of Akron.

Nevertheless, Firestone Park, in recent years, has increasingly lost residents and businesses to the suburbs. Its Aster Avenue business district, as well as nearby business districts along South Main Street and Grant Street (in economically-challenged South Akron), have become increasingly underutilized.

Firestone Park sits on Akron METRO RTA's Route #13 (Grant/Firestone Park). This bus route and the historic streetcar-focused Aster Avenue business district that it serves, represent an opportunity for neighborhood revitalization. Grant Street would serve as the focal point of the enhanced travel corridor.

Neighborhood Summary

Smart travel corridors, which utilize the latest available transportation technology to improve public transit, bicycling, and pedestrian use, will serve to link all five of these neighborhoods with one another, and with Downtown, in an efficient and effective way.

But beyond simple transportation efficiency, this project will allow us to use technology to accomplish multiple strategic goals: to shrink our infrastructure; save money; improve livability for neighborhood residents; help small business development; improve health outcomes by providing opportunities for biking and walking; and improve socioeconomic equity by making our neighborhood business districts more accessible and more attractive to investors that will bring new jobs, stores and housing.

Why Akron? Why Now?

By using ITS technology to make better use of the parking lots that have already been built downtown, more land will be available for the development of new housing units and commercial uses. This is especially important to consider as the northern mile of Akron's Innerbelt freeway is closed to traffic and waiting to be repurposed as a place to live, work, and play. Improved connectivity – using technology to help residents access parking, public transit, and bicycle/pedestrian facilities, means that less physical infrastructure will need to be devoted to automobile transportation, and more can be devoted to more economically productive uses – commercial properties, residential properties, and green space.

Similarly, as inner core neighborhoods become better connected to downtown, and to one another, through the use of technology, opportunities for renewed residential and commercial growth will be created. This, in turn, will lead to these neighborhoods becoming more attractive to new residents,

small businesses, and investors – improving social and economic outcomes for the entire city. A better connection between our neighborhoods and downtown will also have a direct and positive impact on a resident's ability to access proper healthcare, education and government services, many of which are located downtown.

Akron is **committed** to correcting its overbuilt infrastructure and maximizing the potential for denser, healthier, greener, transit-friendly neighborhoods both in and around downtown. As an example of this commitment the city will remove the majority of Route 59, commonly referred to at the Innerbelt, in 2016. Completed in 1969, the Innerbelt was envisioned as a 21.5 mile connection between Interstate 76/Interstate 77 and downtown Akron. However, only 2.24 miles of the project were ever completed leaving an awkward built environment that cuts directly through the heart of the city. Originally designed to handle 120,000 cars per day, the Innerbelt currently serves roughly 18,000 cars daily. Like San Francisco, California or Seoul, South Korea, Akron has the unique opportunity to remove transportation infrastructure and replace it with increased technology and neighborhood connectivity.

With such a major project (and a major opportunity) before the city, along with the need for innovations in the current overbuilt and underutilized infrastructure, the city is poised to, once again, reinvent itself.

Exhibit A

Public Parking Decks

- 1 - Broadway Deck, 120 S. Broadway St., 690 spaces
- 2 - Cascade Deck, 10 W. Mill St., 2,031 spaces
- 3 - CityCenter Deck, 122 S. High St., 289 spaces
- 4 - High-Market Deck, 40 S. High St., 595 spaces
- 5 - Morley Deck, 177 S. Broadway St., 349 spaces
- 6 - State Street Deck (O'Neill's), 55 W. State St., 559 spaces
- 7 - Opportunity Park Deck, 666 S. Broadway St., 925 spaces
- 8 - Akron Center Deck (Superblock), 11 W. Mill St., 1,014 spaces
- 9 - Northside Lofts Deck, 21 Furnace St., 28 spaces
- 10 - Summit County Deck, 200 S. High St., 1,140 spaces
- 11 - Bowery Street Deck, 199 W. Bowery St., 890 spaces

Public Parking Lots

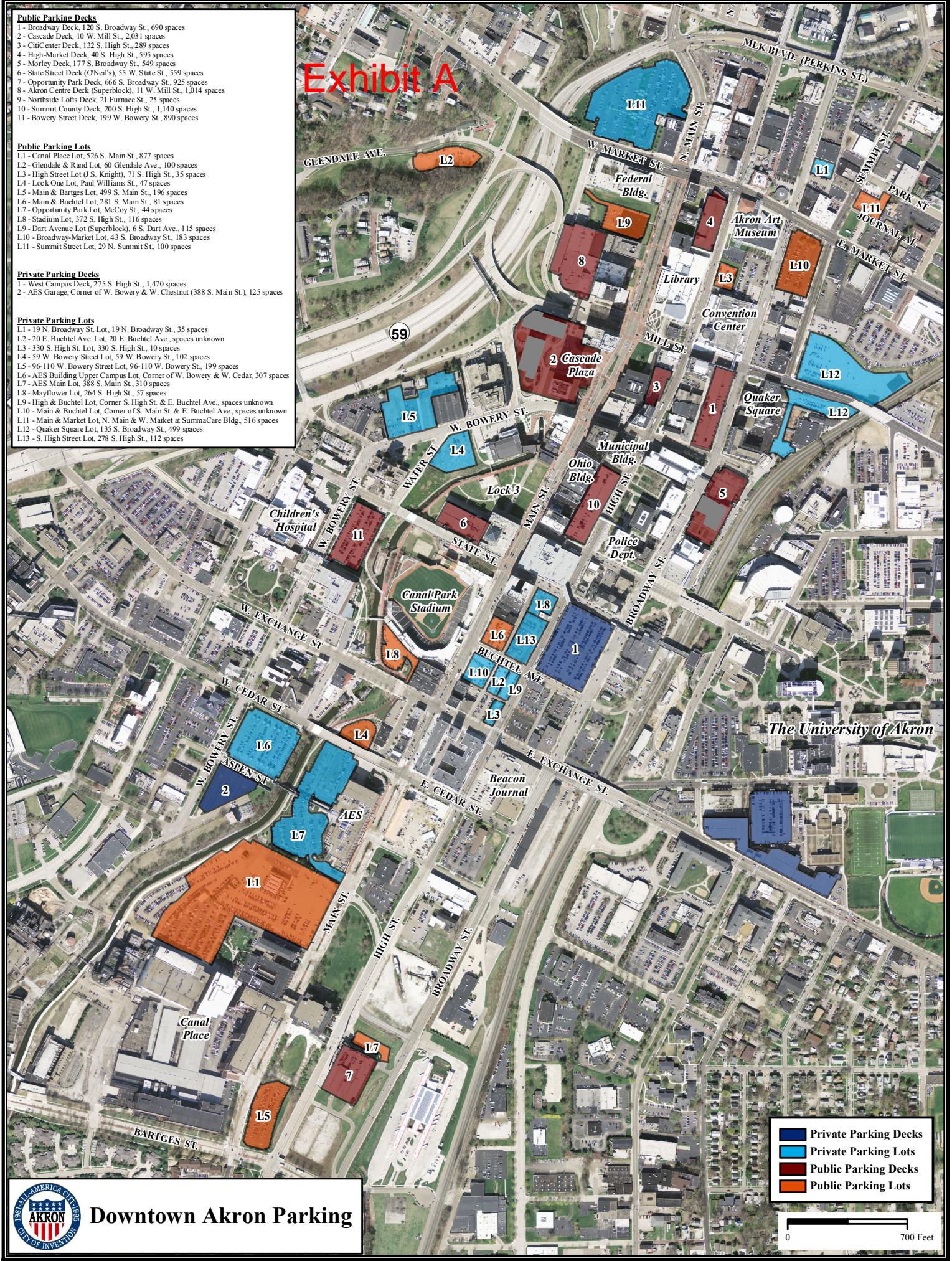
- L1 - Canal Place Lot, 526 S. Main St., 877 spaces
- L2 - Glendale & Rand Lot, 60 Glendale Ave., 100 spaces
- L3 - High Street Lot (J.S. Knight), 71 S. High St., 35 spaces
- L4 - Lock One Lot, Paul Williams St., 47 spaces
- L5 - Main & Barges Lot, 499 S. Main St., 196 spaces
- L6 - Main & Buchtel Lot, 281 S. Main St., 81 spaces
- L7 - Opportunity Park Lot, McCoy St., 44 spaces
- L8 - Stadium Lot, 372 S. High St., 116 spaces
- L9 - Dart Avenue Lot (Superblock), 6 S. Dart Ave., 115 spaces
- L10 - Broadway-Market Lot, 43 S. Broadway St., 183 spaces
- L11 - Summit Street Lot, 29 N. Summit St., 100 spaces

Private Parking Decks

- 1 - West Campus Deck, 275 S. High St., 1,470 spaces
- 2 - AES Garage, Corner of W. Bowery & W. Chestnut (388 S. Main St.), 125 spaces

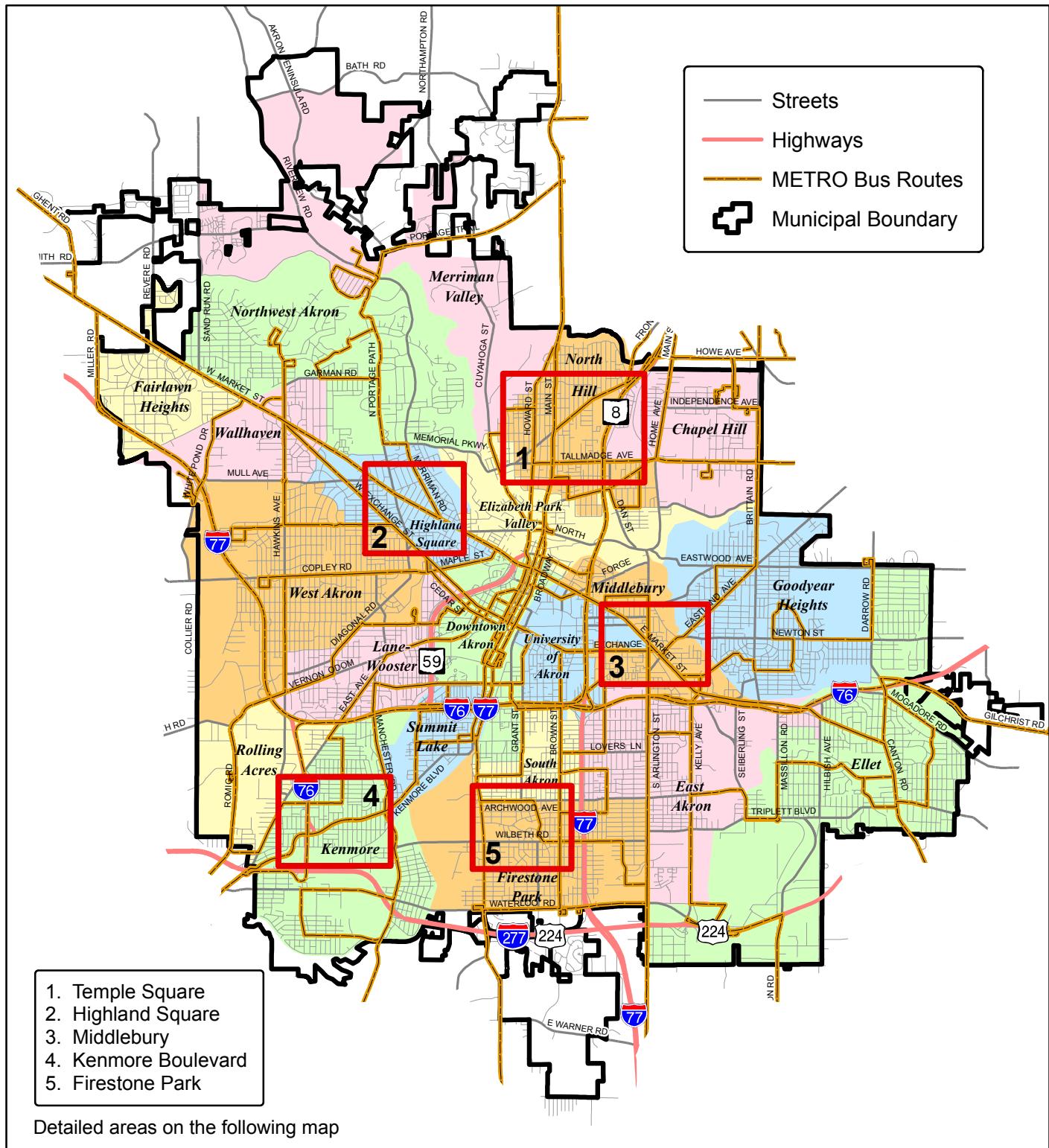
Private Parking Lots

- L1 - 19 N. Broadway St. Lot, 19 N. Broadway St., 35 spaces
- L2 - 20 E. Buchtel Ave. Lot, 20 E. Buchtel Ave., spaces unknown
- L3 - 330 S. High St. Lot, 330 S. High St., 10 spaces
- L4 - 59 W. Bowery Street Lot, 59 W. Bowery St., 102 spaces
- L5 - 96-110 W. Bowery Street Lot, 96-110 W. Bowery St., 199 spaces
- L6 - AES Building Upper Campus Lot, Corner of W. Bowery & W. Cedar, 307 spaces
- L7 - AES Main Lot, 388 S. Main St., 310 spaces
- L8 - Mayflower Lot, 264 S. High St., 57 spaces
- L9 - High & Buchtel Lot, Corner of S. High St. & E. Buchtel Ave., spaces unknown
- L10 - Main & Buchtel Lot, Corner of S. Main St. & E. Buchtel Ave., spaces unknown
- L11 - Main & Market Lot, N. Main & W. Market at SummaCare Bldg., 516 spaces
- L12 - Quaker Square Lot, 135 S. Broadway St., 499 spaces
- L13 - S. High Street Lot, 278 S. High St., 112 spaces



Smart Cities: Transportation Corridors
METRO Bus Routes Serving Downtown Akron and its Neighborhoods

Exhibit B



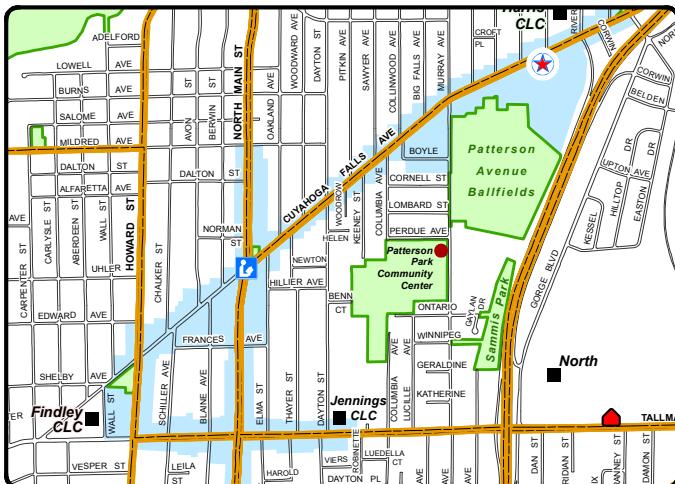
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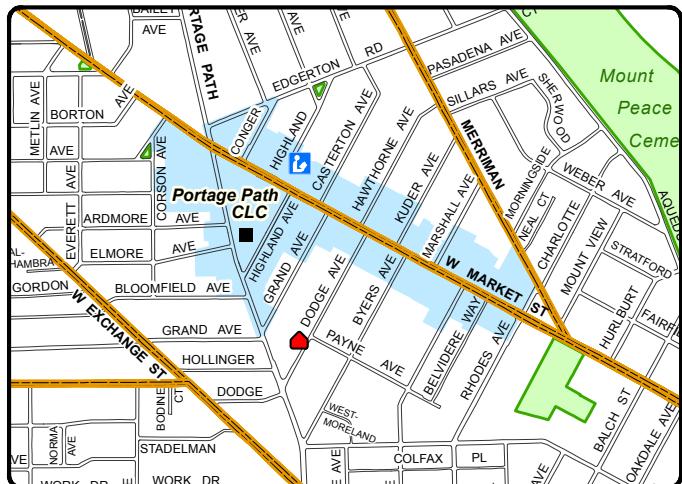
Smart Cities: Transportation Corridors

METRO Bus Routes Serving Akron Neighborhoods

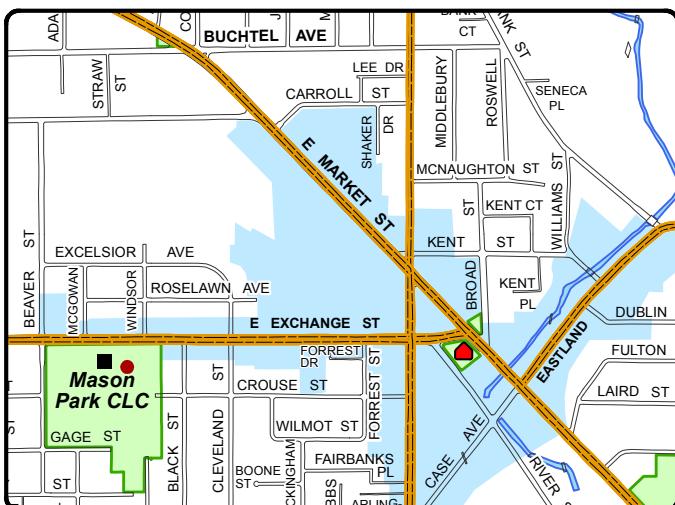
Exhibit C



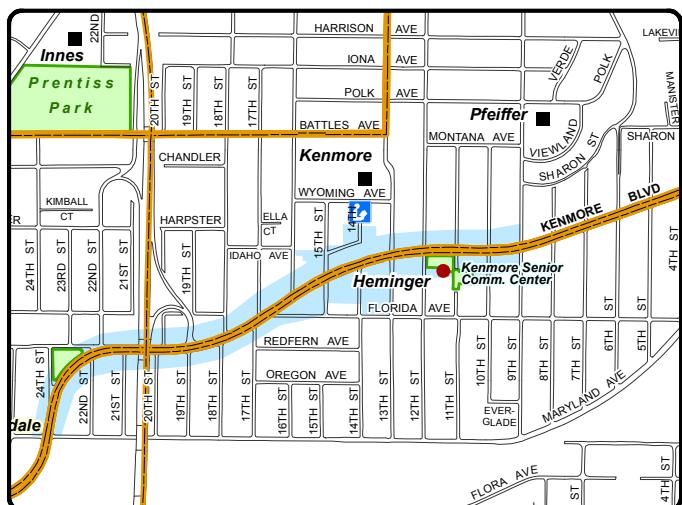
1. Temple Square



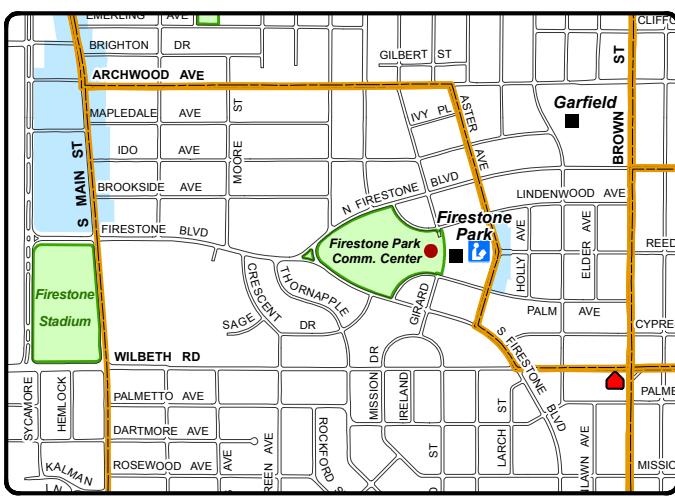
2. Highland Square



3. Middlebury



4. Kenmore Boulevard



5. Firestone Park

- Public Schools & Community Learning Centers
- Community Center
- Library
- Post Office
- Fire Station
- METRO Bus Routes
- Parks
- Business Area



Parking Vacancies

Exhibit D

Facility Deck	Space Count	Average Daily Vacancy 9:00 am -5:00 pm
1 -Broadway	690	390
2-Cascade	2031	453
3-CitiCenter	289	25
4-High &Market	595	275
5-Morley	549	45
6-State St.(O'Neil's)	559	250
7-OPG	925	125
8-Akron Centre	1014	25
9-Summit County Deck	1140	100
Totals	7792	1688
Surface Lots		
L-1 - Canal Place	877	100
L-2 - Glendale & Rand	100	85
L-3 - High St Lot(JS Knight)	35	2
L-4- Lock One	47	40
L-5- Main & Bartges	196	20
L-6-Main & Buchtel	81	10
L-7-OPG Lot(McCoy St)	44	38
L-8-Stadium Lot	116	95
L-9-Dart Avenue	115	50
Bowery & Water St	150	125
Totals	1761	565
Subtotals	9553	2253