

City of Buffalo, New York

# THE FUTURE OF MOBILITY: REMAKING BUFFALO FOR THE 21<sup>ST</sup> CENTURY

**CNU**  
Congress for the  
New Urbanism



 **Stantec**



Just as increased access to cars reshaped our world after World War II, the next generation of mobility innovations will once again shape the future of our cities and regions. As highways and interchanges have ceded their role as economic engines to lively downtowns and walkable urban neighborhoods, a new generation of mobility innovations, first shared, next connected, and by the late 2030s...shared automated mobility—will power economic growth.

The Congress for the New Urbanism (CNU) partnered with the City of Buffalo and Stantec's Urban Places team to organize a community-based charrette in February, 2020, focused on a fundamental challenge posed by these rapid changes: how can Buffalo, and similar older industrial cities across North America, start today to put these transformational mobility innovations to work unlocking a new era of opportunity,

access, and equity? As the charrette drew to a close, the unfolding COVID-19 pandemic brought new urgency to shaping city and regional transportation systems that spur the development of more diverse and resilient economies and also focus on the availability of safe and reliable transportation options for our vulnerable residents.





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# THE TEAM

## CNU

- Lynn Richards, President and CEO
- Ben Crowther, Program Manager, CNU Transportation Initiatives
- Clifford Benjamin “Ben” Herring, PAADG Studio, CNU Charrette Urban Design Coordinator
- Rob Steuteville, Senior Communications Advisor
- Avery Kelly, Program Fellow

Sixteen CNU members-at-large contributed their skills as planners, architects, transportation engineers, and community advocates.

## City of Buffalo and other local agencies:

### Office of Strategic Planning

- Brendan Mehaffy, Executive Director
- Nadine Marrero, Director of Planning
- John Fell, Senior Planner

### Department of Public Works, Parks & Streets

- Michael Finn, Commissioner
- Nolan Skipper, Acting City Engineer
- Julie Fetzer, Senior Engineer

### Buffalo Urban Renewal Agency

- Nathan Neuman, Community Planner

### Greater Buffalo Niagara Regional Transportation Council

- Lisa Kenney, Smart Mobility Advisor
- Kelly Dixon, Principal Planner

### Niagara Frontier Transportation Authority

- James Morrell, Deputy Director, Public Transit
- Nadine Chalmers, Senior Transportation Planner

### Office of the Mayor

- Byron W. Brown, Mayor
- Elizabeth A. Ball, Deputy Mayor
- Ellen Grant, Deputy Mayor

### Lead Sponsors:

- Douglas Development
- Phillips Lytle
- Ciminelli Real Estate Corporation

### Additional Sponsors

- Buffalo Transportation Pierce-Arrow Museum
- Buffalo Niagara Partnership
- AAA Western & Central New York
- Advanced Network Services
- Ford Mobility
- Via

## Stantec's Urban Places

- David Dixon, FAIA, Vice President, Stantec's Urban Places Fellow
- Ralph DeNisco, Senior Principal, Urban Mobility Planning
- Greg Rodriguez, Principal, Mobility Innovation and Policy
- Ali Kershek, Marketing & BD Manager, Urban Places
- Maryellen De Vivo, Senior Graphic Designer



## Congress for the New Urbanism Legacy Projects

Through our Legacy Projects, the Congress for the New Urbanism (CNU) recruits national design firms to work directly with local partners to create strategies that empower local leaders, advocates, and residents in communities to implement New Urbanist principles, improve residents' access to services, employment, and retail on foot, and stimulate new investment without creating the conditions for displacement.

Legacy Projects leverage professional design assistance to execute projects in neighborhoods that have experienced decades of disinvestment, have majority minority populations, or have been overlooked by mainstream planning and investment strategies. They bring real solutions to neighborhoods in a way that values and taps into the lived experience of residents; facilitating engagement, discussion, problem-solving, and ultimately community buy-in for the final plans.

Each project is designed with a "start now" mentality, including implementation strategies that allow for change to be seen on-the-ground in as little as nine months. CNU Legacy Projects have an implementation rate of over 90%, shifting the narrative around planning and design in communities who often see professional, expensive plans shelved for decades.



*Credit: CNU*

## Stantec's Urban Places

Bringing together global experts in smart mobility, planning and urban design, resilience, real estate feasibility, mixed-use architecture, smart cities, and brownfield redevelopment, our Urban Places team provides our clients innovative and creative plans and designs from a cohesive, focused team. Helping clients realize the full range of benefits that flow from fully urban, walkable downtowns, neighborhoods, and suburban centers, our process is driven by data and grounded in the marketplace. We create plans that inspire people, generate excitement, and respond to stakeholder concerns—building consensus in complex planning environments and with diverse communities. And perhaps most noteworthy our work gets implemented. Our team helps communities across North America chart a path to greater livability, equity, and sustainability.



*Credit: Stantec*

# A letter from the Mayor

I want to thank the Congress for the New Urbanism, Stantec's Urban Places, and all of the other individuals, organizations, businesses, and civic leaders that participated in the public design workshop and charrette which played an instrumental role in the creation of this report. Urban centers are confronting a set of challenges unlike any other they have faced before. A global health pandemic, the consequences of centuries of racial injustice, rising unemployment, and the need for police reform are just some of the issues city leaders and residents must now address.

The City of Buffalo has a critical role to play in this movement and must continue to develop critical strategies to reenergize our community. This report is a roadmap for the development of future mobility options that will play a role in the further growth of Buffalo's diverse cross-section of neighborhoods, entertainment districts, and commercial corridors.

This report and the recommendations contained within it are key to the success of Buffalo's Race for Place, which is an exciting initiative launched by City of Buffalo and the Buffalo Urban Development Corporation. Buffalo's Race for Place is intended to help advance the Western New York region by providing support for innovative and inclusive talent attraction efforts; sparking dynamic public and private sector approaches to infrastructure and public realm improvements; access and mobility enhancements and integration of Smart Cities technology for an urban center that is competitively positioned to attract talent; foster entrepreneurship and to encourage further investment; while providing the innovative strategies for mobility options needed to ensure equitable access that is reflective of the diversity within our community.

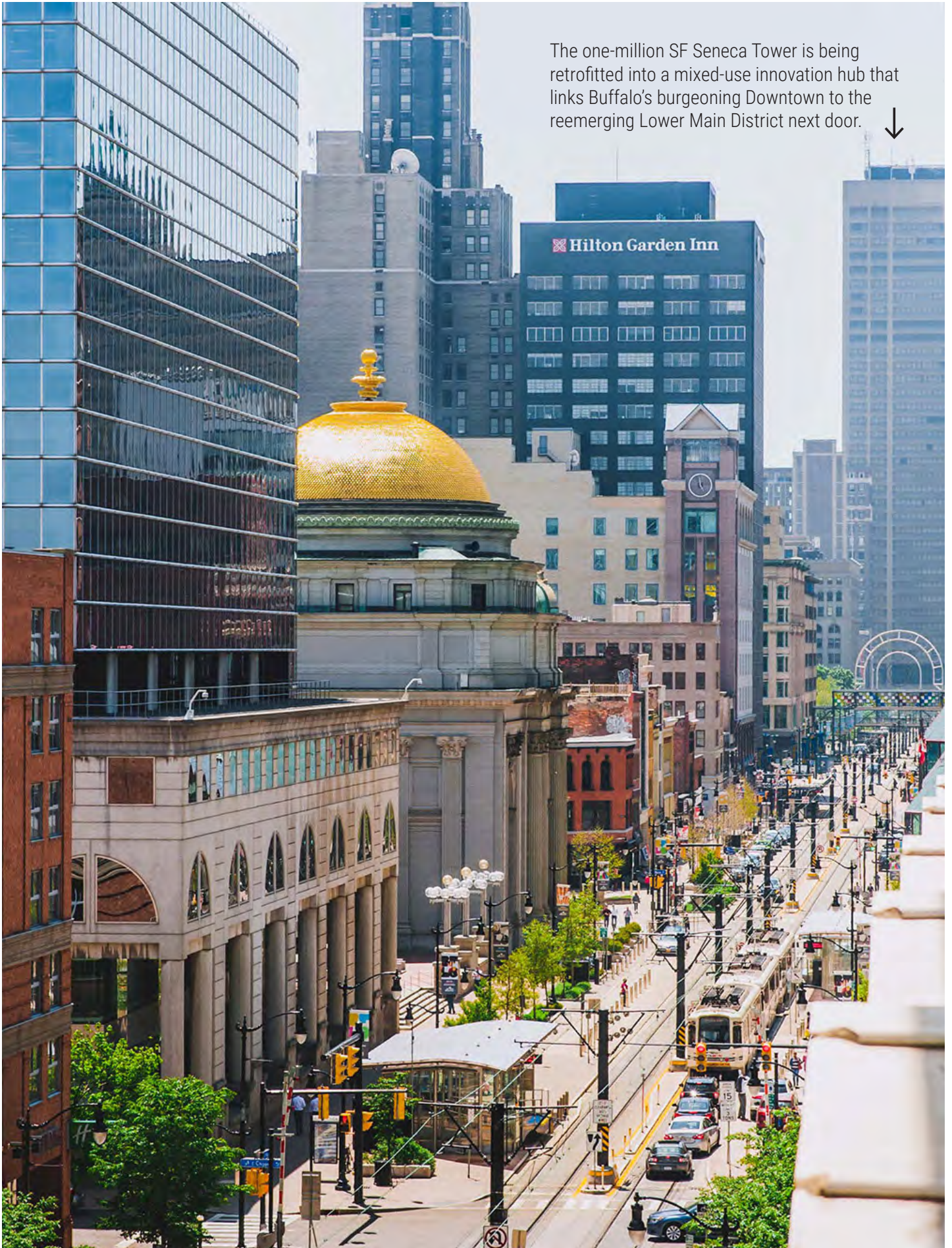
The urban mobility revolution is making that sort of energetic and creative activity possible. This kind of mobility infrastructure can quickly and easily bring people from diverse areas together, relying on a mixture of diverse modes of transportation, accessible by persons across the socio-economic spectrum and within easy distances of people's homes and destinations.

I look forward to working with our various stakeholders, strategic partners, and community members to bring these recommendations to fruition. This type of innovation and out of the box thinking are an essential driving force behind Buffalo's future success and prosperity in the global marketplace.

***City of Buffalo, Mayor Byron W. Brown***



The one-million SF Seneca Tower is being retrofitted into a mixed-use innovation hub that links Buffalo's burgeoning Downtown to the reemerging Lower Main District next door. ↓





# 2 CNU'S COMMITMENT TO THE FUTURE OF MOBILITY

We stand now at the cusp of a transportation revolution—one that once again will not only fundamentally change how we get around, but will also reshape the way cities operate and look. The widespread introduction of next generation transportation technologies is already occurring in our communities, and we should start planning for their arrival now. Automated vehicles, advances in micromobility such as dockless e-scooters, on-demand partnerships with microtransit, and dynamic parking pricing are already starting to change how we move about cities, and therefore how we should plan and design them—this is both the opportunity and the challenge as we prepare for new mobility paradigms.

This CNU Legacy Project, which seeks to empower local leaders, advocates, and residents to implement New Urbanist principles that help people and businesses in their communities thrive, creates both a policy toolkit as well as tailored, yet universally adoptable mobility and design recommendations for the City of Buffalo to reimagine a Lower Main Street using emerging mobility solutions to continue the district's revitalization, unlock equitable urban development, and provide an inclusive and vibrant public realm. Considering different scenarios for the rollout of transportation technology, the workshops during the charrette focused on the following areas:



Credit: Stantec



- **Policy:** What proactive policies can the City undertake to ensure transportation technology addresses the mobility needs of all its residents? How can Buffalo tap the potential of shared automated mobility to attract people, jobs, and investment to the urban core? How will technology like automated vehicles or e-scooters interact with existing transportation networks such as Main Street’s light rail and policies such as the City’s elimination of parking minimums for new developments? How can technologies like dynamic parking pricing reduce congestion and support the City’s Green Code and Infrastructure and Public Realm Master Plan?
- **Street Design:** Based on recommended policies, what physical changes to the streets and areas around Lower Main Street can be made to enhance its downtown character, encourage lively, walkable development, and ensure flexibility to accommodate future transportation trends?
- **Land Use:** With less pressure to accommodate parking—together with automated shuttle connections to nearby underutilized parking facilities—can vacant or underutilized land and surface parking lots be reprogrammed for workspaces, housing, and public space? How do we plan for parking that we may need today to support the district’s growth, but which may well be redundant in one to two decades, while at the same time creating a public realm that serves as the foundation for a thriving, lively district?



Today, driverless low speed automated vehicles operate in mixed traffic and provide low cost, high frequency mobility in urban places. (Low Speed Automated Shuttle Study and Plan, Chamblee, GA).

# 3 OUR CHARGE



Buffalo Mayor Byron Brown joined by Executive Director of Strategic Planning Brendan Mehaffy briefing media following the Mayor's opening comments at the charrette. The Mayor charged participants with making sure mobility innovations promoted increased equity.

*Credit: Stantec*



**Buffalo Mayor Byron Brown opened the charrette by noting that “mobility”—broadly defined—had shaped Buffalo’s history and would represent an important key to unlocking its future. He reminded participants, however, that mobility is not itself a goal. It is a means to larger, critical goals.**

He challenged the charrette participants to work together to use enhanced mobility to achieve core Buffalo values:

- **Equity**
- **Inclusion**
- **Opportunity for all**

This challenge was supported by the City’s announcement around new funding for an initiative called Buffalo’s “Race for Place” to support new innovation-focused public-private partnerships and the expanded mobility options necessary to give everyone access to the benefits these partnerships can generate.



# WHY THE FOCUS ON MOBILITY?

**Why did the Mayor focus on mobility? Because, while the second half of the 20th century was shaped around cars, the first half of the 21st century is being shaped around people. Offering the people of Buffalo more convenient and less expensive mobility alternatives to car dependence is critical to enhancing economic opportunity, livability, and equity across the entire community:**

- Today, cities and regions thrive when their downtowns thrive. Expanding the variety of mobility options that support downtown walkability and bikeability—and the talent, jobs, and investment that this walkability attracts—represents the first task for every city and region across North America.
- The benefits of enhanced mobility are not all about economic opportunity—expanding mobility options outside of automobiles also offers people access to more walkable, and therefore far healthier lifestyles. Across North America, cities where people walk more and drive less record significantly better public health data.
- Expanding alternatives to exclusively depending on auto-ownership (such alternatives termed by one planner as “mobility independence”) also promotes equity. Across North America people who live in transit-served neighborhoods spend roughly half as much of their annual incomes on transportation than their peers without convenient access to transit. People with access to transit—particularly people living in lower income neighborhoods—also have greater access to more and higher-paying jobs, healthcare, education...and each other. Are there ongoing challenges? Yes, making sure transit is available when people need it and offers the connections they need.
- Coming out of the COVID-19 pandemic will undoubtedly impose challenges on prioritizing shared mobility. This starts with making sure transit is not seen as just a means of transport for the underserved, but instead investing to ensure it is the catalyst that spurs integration of all forms of mobility. Next generation mobility solutions offer the opportunity to complement and enhance the ability for transit to move people in an efficient and economically focused manner. It will be important to continue to invest in shared mobility solutions as the public health emergency moves into the rear-view mirror. A failure to do so risks exacerbating the transportation pitfalls discussed in this report, including prioritizing single occupancy car trips over people and housing.

In short, planning for a Lower Main district that enhances opportunity, livability, and equity for all of Buffalo starts with mobility independence—and mobility independence starts with increased mobility options that begin reducing the costly dependence on owning a car.

## THE HUMAN FACE OF MOBILITY TECHNOLOGY

Communities can inspire the use of next generation mobility solutions to fill existing transportation gaps that impact individuals and economic opportunity. These transportation shortfalls have become especially apparent during the ongoing public health emergency where individuals without access to a car are faced with complicated health and safety questions—e.g. whether to stay home or risk taking transit to go to a grocery store. While every decision has associated risks, new technology focused mobility innovations provide the opportunity to mitigate risks for vulnerable populations through not only passenger movement, but also goods movement when considering automated delivery services, for example. Through the recommendations in this report, there is the opportunity to inspire use cases that focus on the needs of people and how those needs can be met by access to reliable, safe, and affordable transportation options. This must continue to include investments in transit as discussed herein, but also thinking about ways

to use mobility and innovation to improve the existing transportation system.

The value of mobility is taken for granted. But we need to challenge basic assumptions. We have the opportunity to present mobility for what it is—the ultimate equalizer—and shift the focus from the vehicle to people. Instead of focusing on the technology, we should be focused on the passenger—whether it be choosing a car, van, bus, rideshare, or even a dockless scooter. Why did an individual choose that mobility option? Were there alternative choices? What impacts does that decision have on infrastructure maintenance costs? By reframing the conversation around the needs of ALL individuals within a community and effectively integrating emerging transportation innovations to meet those needs through an informed vision and policy framework, we have the opportunity to transform our approach to mobility and ensure safe, reliable, and affordable transportation options are provided to all segments of a community. In other words, matching the transportation needs of people to viable transportation options.

# 4 A NOTE ABOUT THE IMPACT OF COVID-19 ON PLANNING

The COVID-19 pandemic is accelerating some trends and slowing others. But it is not changing the importance of planning now to ensure that the accelerating pace of mobility innovations can be a powerful tool for unlocking greater economic opportunity, equity, and resilience.







**Mayor Brown opened the charrette just as news of the COVID-19 outbreak had begun to spread, but before any of us knew this report would be issued in the midst of a global pandemic. Roughly a year into the pandemic, significant data is emerging that suggests that the Mayor's charge is even more essential today than the day he delivered it:**

- **Equity**—as a growing body of data confirms that the incidence and impacts of COVID-19 have been much more severe for lower-income households and people of color, the pandemic has shed a harsh light on the growing costs of inequity and importance of taking meaningful steps to extend equal opportunity regardless of income, race, ethnicity, abilities, or other lines of difference.
- **Community**—the isolation the pandemic has imposed on so many has further energized the call for common ground—new, accessible, public realms planned, programmed and designed to bring diverse people together to celebrate—and reinforce—our sense of shared humanity and community.
- **Recovery**—the underlying demographic and economic dynamics that have made Downtown the economic and equity engine for not just the City of Buffalo, but the entire region, will be firmly in place—for at least the next two decades—as we emerge from the pandemic and begin again to move forward.

# 5 EXECUTIVE SUMMARY

## Shaping emerging mobility paradigms to serve our communities

A series of revolutionary new urban mobility paradigms are set to unfold over the next two decades: first shared, then connected, and by the late 2030s, shared automated mobility. CNU partnered with the City of Buffalo and Stantec's Urban Places team to meet a critical challenge posed by these rapid changes—managing the advent of transformational mobility innovations to resolve longstanding problems and turn fundamental goals into new realities—for the benefit of our communities.

The destructive impacts triggered by the emergence of the current mobility paradigm—the rise of universal access to cars after the end of World War II—are well documented. For the following seven decades we let the needs of cars reshape our communities—to the point of near universal auto-dependence. Cars reshaped virtually every aspect of our communities across North America, rather than the other way around.

We paid a very steep price: year after year of relentless sprawl and the creation of severe transportation inequities.

We cannot afford to repeat the same mistake. But history is in danger of repeating itself. As we enter an era of rapid mobility innovation that promises even more profound transformative impacts, there is once again lots of focus on how our communities need to adapt to the needs of new mobility technologies—the vehicles, software, and infrastructure. What's missing? A parallel focus on how we can use emerging mobility technologies as planning tools to shape more livable, opportunity-rich, healthy, equitable, and mobility-resilient communities. In other words, we need to act now to ensure that we shape the advent of coming mobility innovations to meet the needs of our communities and avoid repeating the scenario in which the last round of mobility innovations reshaped our communities to meet the needs of mobility.

Identifying core community needs and developing complementary policy frameworks that integrate next generation mobility solutions effectively represent parallel key steps toward putting mobility in the service of community-building. As we enter two decades or more during which demographic shifts will deliver unprecedented demand for urban living and a knowledge-dominated economy will follow an increasingly scarce workforce back into cities, we have a unique opportunity to repair the damage of fifty years of sprawl and usher in a new era of urban revival that is inclusive and focused on community. The COVID-19 pandemic will likely slow progress, but the fundamental forces shaping an era of mobility innovation paired with urban opportunity are firmly in place. Our ability to employ emerging mobility technologies to unlock this opportunity will represent the key.



# The Future of Mobility: Shaping the Future of Buffalo...

Credit: Google Earth



Credit: Bill Bronrott



...starting with **Lower Main**



The charrette focused on Buffalo's Lower Main Street district, immediately south of Downtown. Today, much of Lower Main represents a mix of grand old buildings that tell the story of Buffalo's earlier success as a manufacturing center and surface parking lots—together with some urban renewal-style redevelopment.

## Enter Buffalo.

After CNU and Stantec's Urban Places announced interest in finding a partner to explore how communities can begin now to shape the advent of rapidly emerging mobility technologies to achieve fundamental community goals, Mayor Byron Brown stepped forward. He proposed that his City represents an ideal setting for exploring the goals, visions, and policies that Buffalo and similar mid-sized cities across the Northeast and Midwest—battered by a decades-long decline in manufacturing—should put in place today to unlock a brighter future. The goal laid out was one of new partnerships focused on the future with a message of revival, innovation, and economic opportunity, unlocked by new mobility paradigms that increase access for all. With this in mind, the “people first” theme of this report seeks to rethink planning and design that focuses on people first rather than the current paradigm that puts single occupancy car trips over pedestrians and cyclists; though change is being implemented through policies like “Vision Zero.” CNU, the City of Buffalo, and Stantec's Urban Places worked together to organize a week-long charrette that brought a wide spectrum of the Buffalo community into the conversation. To ensure that the charrette produced tangible recommendations that could be put in place today, the Mayor proposed the charrette focus on the City's Lower Main district. The southern half (and least redeveloped part) of a Downtown already beginning its revival, Lower Main presents a relatively blank slate to demonstrate and incubate innovative mobility solutions—both from a policy and services perspective—that can unlock revitalization across the district.

## VISION

**Transform Lower Main into a mobility and equity innovation zone that serves as an incubator for leveraging economic, equity, and livability benefits from a quickly emerging era of unprecedented mobility innovations. The following principles translate these goals into action:**

- Make Buffalo a leader in planning for this emerging era.
- Build on unprecedented connectivity to achieve the walkable density that supports an amenity-rich, urban environment.
- Leverage this fusion of connectivity and amenity to transform the district into an economic, fiscal, and equity engine for the City and region.
- Take concrete steps to ensure that the full spectrum of the Buffalo community can share equitably in an era of expanded opportunity.
- Ensure that the zone’s public realm actively invites inclusion and emerges as a place that everyone in Buffalo can call “mine”.
- Build-in the authenticity of Buffalo’s living culture by incentivizing local entrepreneurs, artists, chefs, and others to become part of the mobility and equity innovation zone community.
- Create a district that grows greener as it grows denser.

## A Mobility and Equity Innovation Zone

This vision can be unlocked by designating Lower Main as a mobility and equity innovation zone. The headline that launches the mobility and equity innovation zone? A shared mobility corridor that frees people from the expensive necessity of owning a car. Its signature service—a shared, automated shuttle—provides convenient, inexpensive, and on-demand access connecting every part of the mobility and equity innovation zone to each other, Downtown, Buffalo Niagara Medical Campus and other innovation centers like SUNY Buffalo, together with surrounding neighborhoods. Augmented by shared-mobility hubs (think e-scooters, e-bikes, and on-demand services that provide first- and last-mile solutions), this shared mobility corridor will be synonymous with an amenity corridor that concentrates a critical mass of “third places”—unique retail, cafés, music, and restaurants to bring local streets to life and accelerate urban revival that attracts people to live, work, learn, play, and innovate in the mobility and equity innovation zone. Reducing auto-dependency sets the stage for another goal—eliminating the need for investment in expensive structured parking by reducing near-term demand and taking advantage of the ability of connected and then shared automated mobility to further sharply reduce parking demand over the next two decades. Reduced auto-dependency together with density and lively streets also promotes walking, which more than any other factor correlates with improved public health data as well as enhanced vitality and higher real estate values. Altogether, the mobility and equity innovation zone represents a national model for exploring community-building opportunities linked to mobility innovations.



The headline is a north/south mobility corridor that pairs light rail and low speed automated vehicles to connect the mobility and equity innovation zone directly to other centers of Buffalo’s growing innovation economy via a low cost/high convenience mobility corridor.



Credit: Stantec



Mobility innovations are at work in all-weather environments.



*Credit: Chris Keefe, Aurigo VP Autonomous Programs Director, North America*

## Rethinking the Value of Mobility

A mobility, policy, and people-focused innovation district is an achievable vision. It is framed in technology terms, but it is people and community-powered. The technology exists today to launch low speed automated vehicle (LSAV) shuttles in mixed traffic and complementing shared mobility hubs that support existing public transportation investments—offering low cost/high convenience mobility. (Note: LSAVs are being deployed in communities through short-term pilots and deserve wider study today especially as effective and accessible first/last mile solutions).

Community comments received during the week made it clear that such an area—focused on innovation with people, equity, and mobility prioritized—would enjoy considerable support. Working collaboratively to implement the mobility and equity innovation zone not only unlocks immediate opportunities to test ideas, but sets the stage to take greater advantage of the advent of connected mobility over the next decade, followed by shared automated mobility over the following decade. Implementing these transportation technologies in ways that support community-based outcomes will enhance not just economic opportunity, but also quality of life.

The mobility and equity innovation zone presents the chance to break down silos and rethink existing policy and regulatory structures. Not only is there the chance to incubate new mobility-focused innovations like automated and connected vehicles,

dockless micromobility, and pick-up and drop-off zones for shared mobility, but there is also the opportunity to retool policy and regulation development to align housing, mobility, and employment. Of course, change is never easy to implement, which is why starting with a focused area and vision will foster the important collaboration needed locally, regionally, and with the State.

Many of the concepts proposed during the week, including automated and connected vehicles, were received with understandable skepticism from the general public. With the mobility and equity innovation zone, a real-time incubator can be created that allows controlled testing of new innovative concepts providing the opportunity to allow the community to experience new visions for how to approach both future land use and transportation decisions. To shift that skepticism, giving the community the chance to experience next generation mobility solutions, provide feedback, and help shape the scaling up of successful demonstration projects is a key opportunity for the mobility and equity innovation zone.

The recommendations made in this report merge the realities of today, including challenges from the COVID-19 pandemic, with the innovation-driven opportunities of tomorrow. Investment in planning and coordination today ensures those opportunities are made for Buffalo tomorrow. By continuing the momentum from the CNU/City of Buffalo/Stantec's Urban Places smart mobility charrette, the foundations are in place to overcome challenges and reach with innovation for a more inclusive, mobility-oriented, and opportunity-minded future.

# 6 CONTEXT: TRANSFORMATIONAL CHANGE 2020-40

More than at any point since the Great Depression, and increasingly over the next two decades, downtowns will represent **critical economic—and equity**—engines for their cities and regions. How North American cities manage these two decades of rapid mobility innovation will be central to the success of their downtowns, cities, and regions.

As it continues to build a more diverse economy, few cities and regions illustrate this dynamic as clearly as **Buffalo**.



↓ Charrette leader, David Dixon (Stantec's Urban Places) briefing participants about how mobility innovation can help Buffalo—and similar regions recovering from the decline of North America's manufacturing economy—unlock transformational opportunities stemming from rapidly changing demographics. As these changes spur steadily growing interest in urban living and working, they offer Buffalo new opportunities to leverage investments in its knowledge corridor to expand its knowledge economy.

Credit: Stantec



## Economic imperative: downtown revival is essential for regional economic success

Like the rest of the developed world, an aging North American population is spurring a growing shortage of skilled and educated workers. In 2020, the workforce is growing at roughly half its 2010 pace and in 2040 it will still grow even more slowly than in 2010.<sup>1</sup> At the same time, as knowledge industries (think life science, eds and meds, automated manufacturing) increasingly drive economic growth, roughly nine out of ten net new jobs today require some form of higher education—and within a decade a majority will require a four-year degree or more. For the first time in history, today a majority of North American manufacturing jobs require a college degree. These seismic shifts—projected to accelerate over the next 20 years—are producing unprecedented competition for talent.

No region can ignore this “new economy” and focus only on maintaining traditional jobs. Knowledge industry growth creates jobs across the economy. The Economic Policy Institute reports knowledge industries provide higher “multipliers” than traditional industries.<sup>2</sup> The International Downtown Association’s (IDA) research reports downtowns with a large share of knowledge

industry jobs held an even larger share of all jobs in their cities—suggesting success in attracting and retaining talent yields broader benefits in terms of creating local jobs. And national data indicates regions that are failing to attract knowledge industry jobs and investment are not only falling behind their more competitive peers in job growth, but also growth in wages. For example, economist Enrico Moretti and the City of Buffalo report that each new knowledge industry job creates five additional jobs for folks with a wide spectrum of skills and interests.<sup>3</sup>

While Buffalo, like every North American city, can and must do a more effective job of cultivating homegrown talent by providing the education and skills essential for entry into the knowledge economy, every region in North America must also compete to attract talent. IDA reports that today no region can succeed in the new economy without a walkable, highly-amenitized, culturally rich downtown that attracts and retains talent. And as CityLab observed in a 2018 report, these places also need to be designed around people, not cars.

Some good news for the Buffalo region: it currently produces more than 20,000 university and college graduates annually—a great incentive to continue revitalizing downtown into a place that retains talent.

<sup>1</sup>“A look at the future of the U.S. labor force to 2060,” Mitra Toossi, Bureau of Labor Statistics, September, 2016

<sup>2</sup>“Updated employment multipliers for the U.S. economy Report,” Josh Bivens, Economic Policy Institute, January 23, 2019

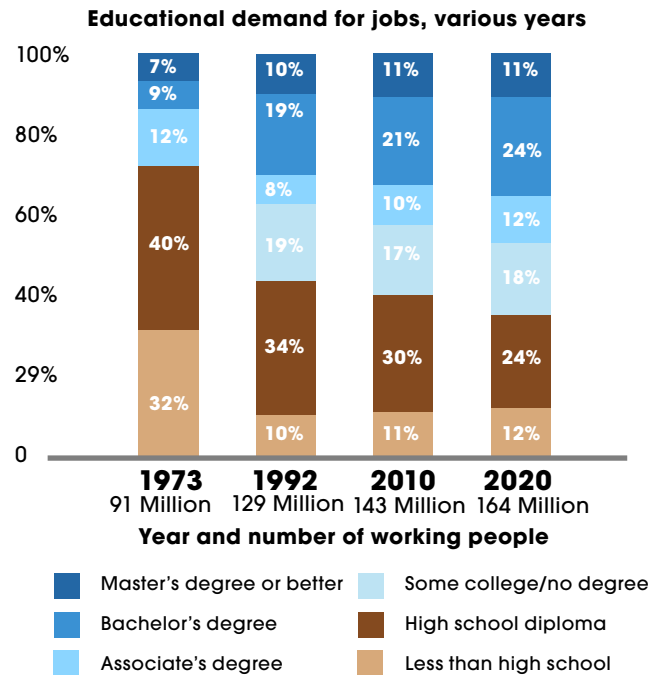
<sup>3</sup>The New Geography of Jobs, Enrico Moretti (Mariner Books, 2013)

## Demographic opportunity: housing demand fuels downtown revival

For decades, households with children dominated North American housing markets, fueling a flight to the suburbs and pulling life out of downtowns. Now, demographic trends have taken a dramatic U-turn. In recent years, the share of new households without kids has grown dramatically. According to Harvard’s Joint Center for Housing Studies, this group is projected to constitute roughly four-fifths of all net new households between 2018-2038,<sup>4</sup> setting the stage for a significant revival of downtowns and surrounding urban neighborhoods across the United States. Buffalo’s downtown story is even more optimistic. A still larger share of the region’s growth over the next two decades—projected to top 10,000 households—will be concentrated in households without kids who would have long demonstrated a strong preference for living in downtown or nearby urban neighborhoods. Drilling into this data suggests greater opportunity for downtowns—including Buffalo. Households with more education and higher incomes are more interested in downtown living than their peers. Across all incomes, households in the top 40% by income have been moving into urban centers in growing numbers while those in the bottom 60% by income have been moving out—in many cases because of a growing shortage of affordable housing. These trends are already reshaping housing markets across the United States—in many regions, downtown values have moved well above their pre-2008 crash highs, while values in many of their suburban peers still lag pre-2008 levels.

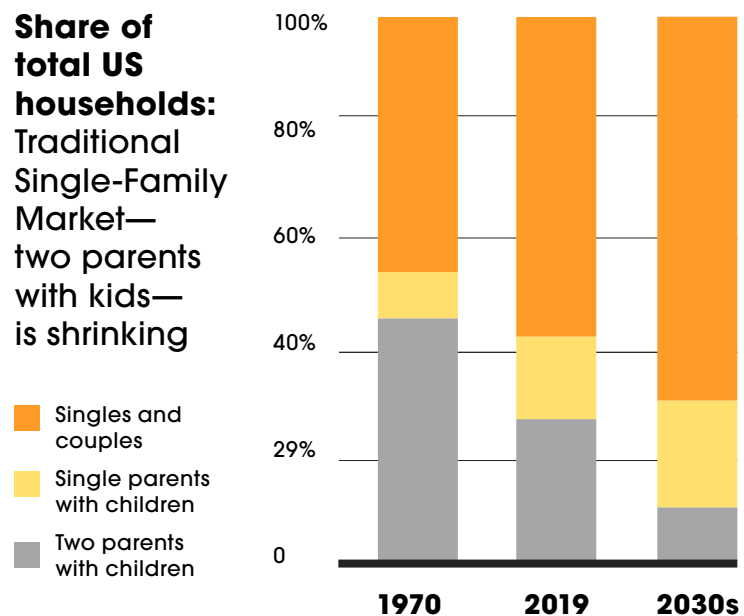
<sup>4</sup>Updated Household Growth Projections: 2018-2028 and 2028-2038,” Daniel McCue, Harvard’s Joint Center for Housing Studies, 2018

Today 2/3s of all jobs require higher education...



Credit: Stantec, US Bureau of Labor Statistics

**Share of total US households: Traditional Single-Family Market—two parents with kids—is shrinking**



Credit: Stantec



## ...creating a growing knowledge worker shortage

By 2020, advanced economies could have too few college-educated workers and too many workers with secondary degrees.

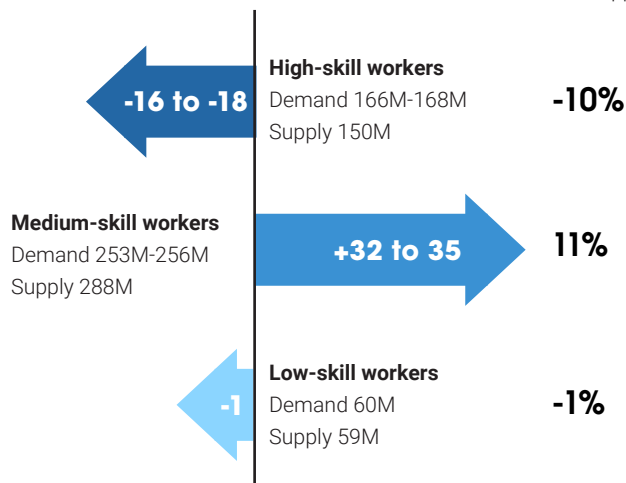
### Projected 2020 labor demand and supply by skill level

millions of workers

### Share of total

% of demand (for shortages)

% of supply (for surpluses)



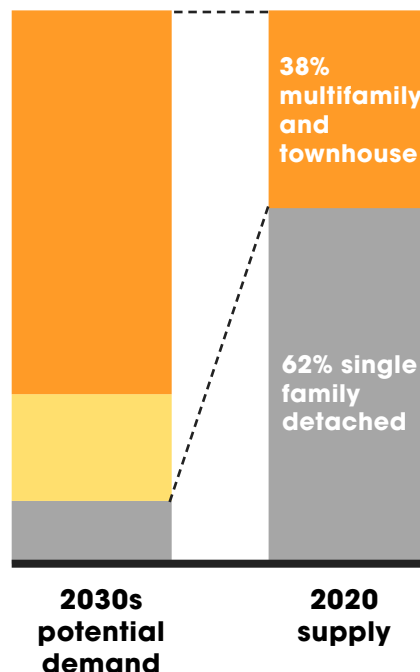
Today, as knowledge industries increasingly dominate economic growth, two-thirds of all jobs require higher education—including more than 95% of all net new jobs created since 2010. (US Bureau of Labor Statistics).

This shift toward a knowledge economy is creating strong global competition for educated workers, who are increasingly attracted to regions with lively, walkable, live/work/play/innovate downtowns and urban neighborhoods—like the mobility and equity innovation zone. (Brookings Institution)

Credit: Stantec, Brookings Institution

**2030s:** today less than 40% of US housing stock matches the housing most new households will be searching for

- Singles and couples
- Single parents with children
- Two parents with children



Dramatic demographics shifts have created the most urban housing market in North American history. More than 80% of net household growth (read housing market) to 2030 and for at least another decade will consist of singles and couples, who strongly prefer urban living. As a result, the Buffalo region will enjoy strong demand to live in places like the mobility and equity innovation zone even though overall population growth will likely continue to be slow. (Harvard's Joint Center for Housing Studies)

Credit: Stantec



## Mobility disruption: mobility drives transformative change

**Economic and demographic trends may create an imperative and opportunity for downtowns, but mobility innovations already underway will once again shape the future of our cities and regions.**

The rapid rise to dominance of a new mobility paradigm—universal access to automobiles—unleashed five decades of suburbanization (and urban decline) following the end of World War II. However, over the past two decades, in Buffalo and many other cities, a reaction has set in. The urban core is once again viewed as a place for living.

And once again, the advent of new mobility paradigms will have a transformative impact on our communities. Over the next two decades, emerging mobility innovations will help unlock unprecedented urban opportunity. The first waves of change have been focused around mobility-on-demand—served both by global transportation network companies (TNCs) like Uber and Lyft (which together already command more than twice the stock market value of GM and Ford) and ever-evolving micromobility technologies employing shared bikes and e-scooters. Mobility-on-demand is already steadily increasing the convenience and decreasing the cost of living and working in higher density downtowns. However, equity challenges exist, especially with those that are “unbanked” (without access to bank accounts or credit cards).

On the horizon are new mobility paradigms which within two decades promise more transformative and faster





impacts than universal access to cars seven decades ago. These changes extend to on-demand food and goods delivery (which COVID-19 has helped move to the head of the innovation line). The impacts of these paradigm shifts will be decidedly pro-urban. First, over the next ten to twelve years, connected mobility will rise as a paradigm. While connected vehicles won't drive themselves, they will self-park—and far more efficiently than we park them today. Within a decade, the capacity of every parking facility in the United States will begin to rapidly increase, spelling the end of providing additional parking as a requirement—and significant cost—for urban development. Also within the following decade, automated mobility will become the paradigm. In urban places—particularly downtowns with the density of people and destinations to support on-demand service—this paradigm will take the form of shared automated vehicles (SAVs). SAVs offer two distinct advantages. Because they eliminate the need to park, they will significantly increase the convenience of urban life. At the same time, by the late 2030s Stantec projects that the use of SAVs will cost far less

than owning and operating a private vehicle and could represent an annual “urban subsidy” of roughly \$5,000 (2020 \$s) or more for folks living and working in downtowns and close-in urban neighborhoods. SAVs also provide windfalls around reduced greenhouse gas emissions and reduced congestion. And as a boon to urban retail, SAVs will mean cities can manage curbside access in new ways—freeing up curb access for pickup and drop off, providing much greater access to local shops and eateries in addition to making curbside deliveries more convenient.

The blueprint for managing this continued disruption will come in the form of policies focused on modernizing the status quo for transportation, including curb and right-of-way management, procurement and partnerships, land use, data governance, funding, equity and accessibility, infrastructure, and revenue.

Credit: Stantec



Stantec’s Urban Places proposed mixing pedestrians, automated shuttles, conventional vehicles, bikes and transit for “Brooklyn Village”—a new mixed-use, mixed-income district with a strong focus on equity in Charlotte, NC.

# A note about **equity** and **inclusion**

These demographic and economic trends have set the stage for an urban conundrum that is flashing warning signs for a growing equity crisis. To attract the talent that in turn attracts knowledge industry jobs and investment, North American cities need to leverage growing urban housing demand to spark redevelopment that makes their downtowns and urban neighborhoods more walkable and amenitized—while also making mobility investments that make them more accessible. In the process, enhanced walkability, amenity, and accessibility attract increased numbers of affluent urban dwellers who push up housing prices and displace lower-income individuals.

The answer is not to stop making our cores better places to live and work. Instead, we need to simultaneously launch more robust urban equity agendas that ensure that the full spectrum of our communities share in growing economic opportunity and enhanced quality of life.

We all have much work to do. As the popularity of urban living has soared across North America, so has the displacement of lower-income households, many to outer suburbs. Since 2000, the number of households living at or below the poverty line in these suburbs has increased by more than 60%—roughly three times the rate of increase in cities. Buffalo’s policy of “anchoring affordability” represents an important step forward in enabling all residents to benefit from positive changes to their neighborhoods without fearing these changes will lead to displacement. This policy is bolstered by strong local workforce readiness and job training programs and initiatives like Queen City Pop Up that supports minority and disadvantaged businesses. Buffalo’s city staff also noted that providing enhanced access to jobs, healthcare, and education across more Buffalo neighborhoods would make these neighborhoods better candidates for City affordable housing funds. These programs reflect a spirit of enlightened self-interest. They are not only the right thing to do, they generate substantial benefits—bringing Buffalo’s diverse living culture to life with a diverse mix of people, unique small businesses, and an energetic arts presence that celebrate the city’s living culture.



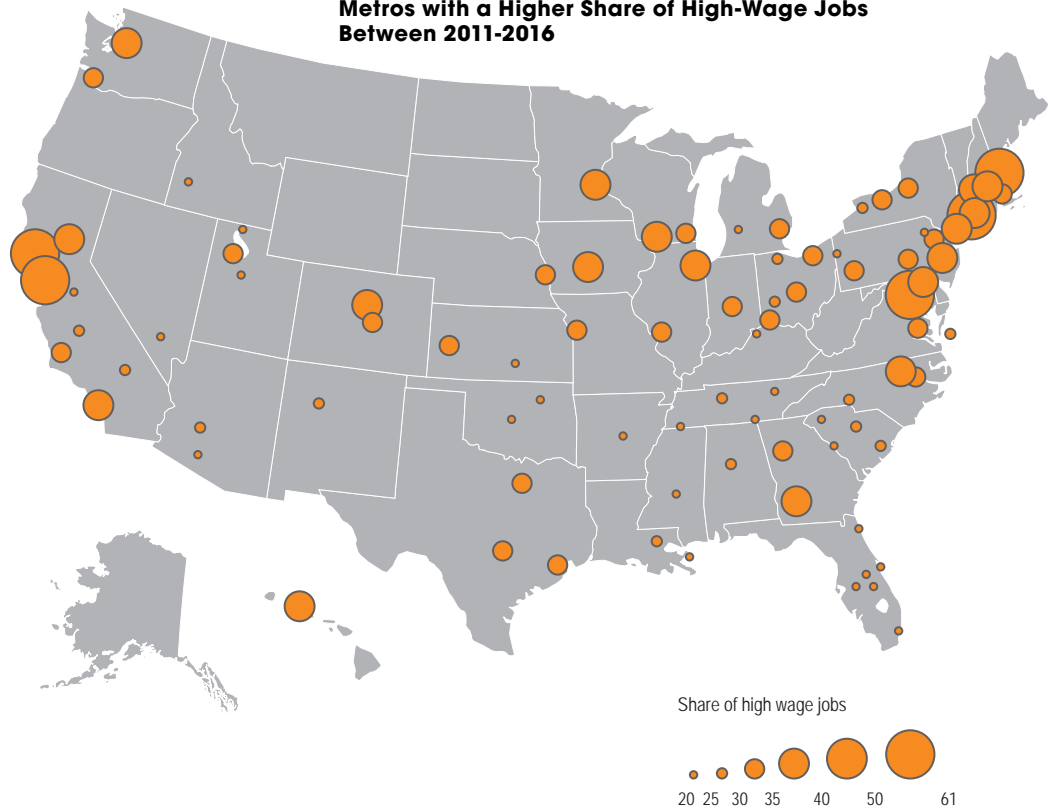
# Jane Jacobs Conundrum:

Jane Jacobs Conundrum: When America's cities started losing people, jobs, and investment following World War II, author Jane Jacobs prophesied that the key to urban recovery was fostering a new generation of lively, amenitized, diverse downtowns and urban neighborhoods. As urban revival over the past two decades has demonstrated she was right.

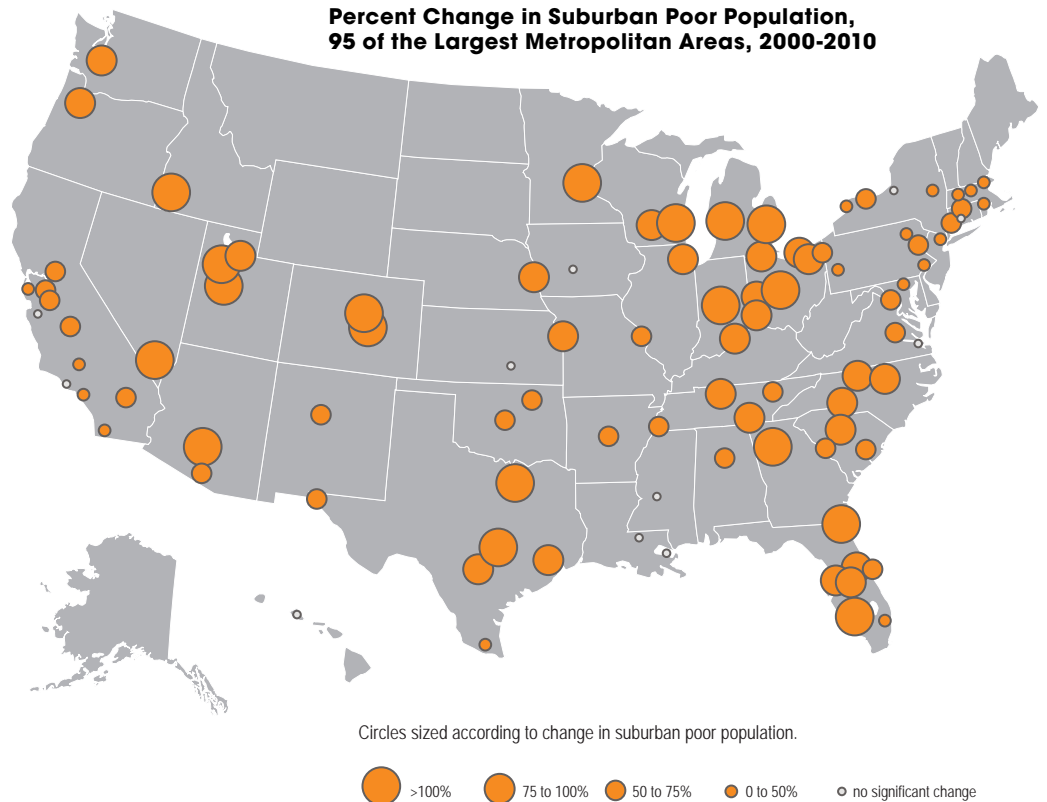
However, what Jacobs was not able to foresee was the growing wealth gap across the US, which meant that as urban places became more desirable, and more affluent households moved back into cities, urban success has translated into growing gentrification and displacement in many cities.

As cities succeed in adding more high-paying jobs, more lower-income households are likely to be displaced to suburbs.

**Metros with a Higher Share of High-Wage Jobs Between 2011-2016**



**Percent Change in Suburban Poor Population, 95 of the Largest Metropolitan Areas, 2000-2010**



Top, source: Stantec graphic, based on Taylor Blake's mapped data "Share of high-wage jobs by metro" based on the detailed analysis of geographic job growth in America's 100 largest metros between 2011 and 2016 from Emsi.

Bottom, source: Stantec graphic, based on Brookings Institution "Percent Change in Suburban Poor Population, 95 of the Largest Metropolitan Areas, 2000-2010" analysis of U.S. Census and American Community Survey data

# 7 WHAT YOU TOLD US

twenty-  
minute  
city





**Buffalo is often described as a ‘20-minute city’, meaning that a driver is able to get from any one point in the city to another in 20 minutes or less. Buffalo’s wide streets, with their significant excess capacity, makes this possible, at the expense of a vibrant and lively urban core filled with people, not cars.**

During our four days in Buffalo, we held two well-attended public meetings to gather input on the mobility issues faced by the community, particularly with regards to accessing Lower Main and downtown, and reactions to future mobility solutions that can unlock economic and urban development.

The responses we received focused around a shared theme: rebalance transportation options so that Buffalo’s reputation as a 20-minute city extends to all modes of transportation, including a combination of walking, biking, and public transit.



The following is a summary of the **themes** and corresponding **comments** that track the **analysis** and **recommendations** included in this report:



## About getting in and around Lower Main and downtown

### General

- It is difficult to get to Lower Main during off-hours without a private vehicle.
- Access from public transit often requires several connections from outer neighborhoods.
- There is a split perception on parking:
  - Those who live in the City think there is excess parking, which should be converted into other uses.
  - Those who live in the suburbs think parking is scarce and difficult to find.
- Wide, one-way, auto-oriented streets such as Oak and Elm are barriers to walking.
- There are limited options for getting to the airport other than a private vehicle.
- There is a lack of shops, cafés, restaurants, and bars that attract people to Lower Main.
- It is easy to drive to/within Lower Main, less so to walk, as the neighborhood lacks wayfinding to guide pedestrians, especially those with disabilities.

*Takeaway: Smart mobility is not just about technology, it has to start with filling fundamental gaps in the existing transportation system. Currently, a car is required to easily access Lower Main. This emphasis on automobile infrastructure has created a perception of Lower Main as a place to drive through, not a destination in its own right.*

### Walking/Biking/Micromobility

- Pedestrians and cyclists perceive Lower Main as unsafe, because streets are wide, one-way and vehicle speeds are often high.
- Crosswalk infrastructure needs improvement. In addition to repainting, crossing signals should be on recall and allow a lead for pedestrians to cross before signals change for cars.
- It is difficult to enjoy signature public spaces like Niagara Square, because the streets that surround them are one-way, excessively wide and difficult to access on foot.
- There is a lack of bike infrastructure, particularly protected bike lanes, which forces cyclists to choose between riding on streets and riding on sidewalks.
- There is a desire for bike share/bike racks at transit stops to bridge first/last mile connections.
- There is a desire to integrate micromobility options like e-scooters and e-bikes into public transit systems to also bridge first/last mile connections. However, people want to see the parking of these options managed in some way, so that they don't become obstructions when not in use.

*Takeaway: There are opportunities to improve existing transportation infrastructure to promote the mobility innovations discussed in this report. Mobility should be multi-modal and should include "people first" solutions while also promoting use of transit, biking, and walking, if Lower Main is to become a place that people desire to go to.*





In focus groups, Buffalo residents offered valuable information and insights—including detailed perspectives on planning and urban design goals for the mobility and equity innovation zone.

Credit: Stantec

### Public Transportation

- There is a repeated call for more amenities at bus shelters, including not only weather protection, but also technology such as real-time arrival information.
- Bus routes also need improved efficiency and reliability and participants identified dedicated bus lanes and signal preemption for buses as two ways to achieve this.
- There is an identified lack of east/west transit routes that connect Lower Main to adjacent residential neighborhoods.
- There is a call for accessible buses and stations that provide features and services to riders with disabilities.
- There is a desire for improved technology associated with bus service, including real-time tracking data and Wi-Fi on board buses.
- Free fares make Lower Main’s light rail service appealing to riders, which could be replicated along other transit routes to increase ridership.

*Takeaway: Public transportation is a foundational element of the transportation system and remains the most efficient way of transporting large numbers of people. Finding ways to use new mobility innovations to complement public transit provides an opportunity. Technology can also be used to increase accessibility and service to transit users.*

### About Creating a Smart and Inclusive Buffalo

- New mobility technology must incorporate universal design. The same goes for the stations and streets that support these new services.
- The City of Buffalo needs to ensure that new mobility technologies, whether automated shuttles or e-scooters, don’t cluster in a single area like Lower Main, but are brought to other parts of the City as well.
- If Lower Main offers a testbed for these new technologies, then neighborhoods underserved by transportation alternatives to cars should be the first recipients of these new technologies after they are tested.

*Takeaway: Technology and innovation offer an important opportunity to increase mobility options for all citizens, including those with disabilities, aging populations, and underserved communities. Using the introduction of new mobility innovations to refocus conversation on equity and accessibility offers key chance to improve livability in communities.*

Credit: CNU



All mobility needs to be accessible to everyone, especially during inclement weather.





Integrating  
new  
technologies



Credit: Bill Bronrott



## A Note about Technology and Innovation

Technology and innovation are being incorporated into many aspects of everyday life within communities across the country. Whether it be smart signals that promote the better flow of traffic, connected water meters that detect leaks and save money on water bills, electronic next bus signs, or partnerships with TNCs like Uber, Lyft, and Via, the opportunity to harness the efficiencies from the safe and effective use of technology is great.

The integration of new technologies into communities requires a vision and a supporting policy framework. Often, new technologies do not fit existing governance and regulatory structures. Overcoming this requires adaptability and creativity, in addition to promoting demonstration projects to test and learn from.

One of the important policy issues emerging around the use of technology in communities is the collection and use of data, which poses privacy considerations that need to be managed and mitigated. As more data from the use of new mobility innovations is collected, considerations around anonymization and avoiding reidentification become more important due to sensitivities around geolocation data.

During the ongoing COVID-19 health emergency, we are seeing the privacy versus public health debate

play out as data from cellphone use is being used to track whether or not citizens are complying with social distancing guidelines.

With all this in mind, it is important to have the right policy foundations in place that track the integration of technology into communities. A cornerstone of such policies, including a data management framework, should be transparency since public trust is an important element of data collection.

From a transportation perspective, having a framework that promotes the sharing of mobility data from transportation providers can deliver a number of benefits, especially around planning and project prioritization. Data is also essential to power the many app-based solutions that the City is currently or planning to implement.

Stepping forward into the future, while there is broad consensus that SAVs can support public transit by shuttling riders to/from stops, often known as first/last mile, important questions persist about how to achieve the potential synergies between transit and automated mobility. Having a framework that promotes the use of data safely and collaboratively offers the ability to develop solutions that frame Mobility as a Service (MaaS). For example, in the Buffalo region, this data can help inform the Niagara Frontier Transportation Authority to better integrate public transportation into both trip planning and utilization as well as ensure that users have more options and the ability to make mobility choices that fit their needs.



Mayor Brown (at far end of table) and charrette team leaders engaged with community members in a broad array of topics that impact how the City should plan for mobility innovations—equity, economic opportunity, accessibility, and placemaking were all top concerns.

# 8 THE MOBILITY AND EQUITY INNOVATION ZONE

## Why Create a Mobility and Equity Innovation Zone?

**The concept of a district focused on mobility, equity, and innovation highlights the opportunity to foster the deployment of new mobility and land use policy solutions within a concentrated area—the focus area for the study.**

With the mobility and equity innovation zone, the City can demonstrate, incubate, and integrate new policies, technologies, and planning solutions with the goals of assisting the transportation system to move beyond the status quo. For example, with a streamlined demonstration area, the ability to show the viability of taking away a lane of traffic on the weekend to be repurposed as a shared-use mobility lane becomes more possible.

### Modernizing Governance and Regulatory Structures Collaboratively

Perhaps most importantly, the mobility and equity innovation zone provides the opportunity for coordination with the State for proposed demonstrations that do not fit neatly into existing laws and regulations. Like many states, the State of New York has antiquated laws focused on human-driven vehicles that has impeded the testing and deployment of next generation mobility solutions like automated vehicles and dockless micromobility. Recent legislation has created a framework for the testing of automated vehicles, but State approval is required. Also, most recently, legislation has been passed in New York that removes restrictions around the operation of e-bikes and electric scooters by local governments so long as certain safety focused conditions are met. Building off this momentum provides both an opportunity to test mobility and innovation focused solutions and to coordinate such testing with the State.

Being able to deploy dockless micromobility solutions in a safe manner will be an important component of the mobility-focused strategy recommended in this report. However, it is necessary to realize that micromobility will not fill all existing transportation gaps. Accordingly, all viable next generation mobility solutions should also be considered by the City to ensure the needs of all constituents are met.

With this in mind and due to the specific geographic focus of the mobility and equity innovation zone, the City can coordinate and request necessary exemptions for other identified mobility and innovation focused solutions from the State and/or regulatory agencies that are specific and defined. As further incentive to provide such exemptions, the City can easily report back on successes and provide data-supported recommendations. Such an approach can be a model for data driven coordination around changes to existing transportation regulatory frameworks at the State level that support the safe and effective deployment of new mobility solutions like dockless micromobility, microtransit, and automated and connected vehicles which will likely revolve around public-private partnerships and new, creative funding mechanisms.

With the idea of a **shared-use mobility lane**, a lane of traffic would be taken away from single occupancy car trips and would be focused on sharing a lane for bikes, scooters, and LSAVs, for example. Clear safety regulations will be needed, but managing safety while promoting new modes of transportation will be an important part of achieving the mobility efficiencies discussed in this report.



Credit: Mike Godfrey, Fisher Associates



← The study area: Buffalo's Lower Main Street district, immediately south of Downtown.

### Merging Mobility and Land Use and Scaling Up New Innovative Solutions

Another key component of the mobility and equity innovation zone is its focused ability to serve as an incubator around new land use and mobility concepts—the opportunity to reduce silos and merge planning for development and transportation can be realized. Further, the mobility and equity innovation zone provides the important opportunity to evaluate and consider how demonstration projects may be scaled to other parts of the City. For example, innovative mobility solutions like shared-use mobility lanes, microtransit, and LSAVs appropriate for mixed-traffic can be deployed to enhance mobility in underserved areas of the City where such solutions will support enhancing one of the equalizers for economic advancement—access to safe, reliable, and affordable transportation options. The power of mobility has perhaps never been as clear as now as we navigate the COVID-19 public health emergency.

### Data Driven Regulations

The data from the demonstration projects launched within the mobility and equity innovation zone can help identify where new mobility-focused solutions can provide increased access to safe, reliable, and affordable transportation options to other parts of the City—areas with existing mobility gaps. Also, the corridor focus of the proposed mobility framework provides opportunities to identify additional corridors throughout the City—employment, healthcare, healthy food, education, and recreation—that allow solutions incubated within the mobility and equity innovation zone to be scaled to other parts of the City.

Further, the data collected from the demonstration projects within the mobility and equity innovation zone will allow for the identification of modernizations needed to existing governance structures, or the adoption of new policy frameworks focused for the safe and effective integration of next generation mobility solutions within the City and in alignment with the City's vision for innovation, for example: curb management; permitting and enforcement; data sharing and governance; liability, insurance, and risk management; procurement and contracting; and equity and accessibility.

While anticipated policy and implementation challenges, they will all need to be rethought in light of rapid mobility innovations. This zone represents an incubator where Buffalo can study and evaluate change. This incubator can be about far more than introducing new technologies into the City's transportation ecosystem. It can also inspire innovation around governance, policies that promote more desirable development, strategies that foster greater economic equity and environmental equity, and similar improvements. With proactive planning now, Buffalo is able to ensure mobility innovations are put to use supporting the City's ability to achieve its vision for the future of Buffalo, rather than technology influencing changes that may not support important goals around equity, accessibility, and economic opportunity.

The collective goal is to reach with innovation in a collaborative and coordinated manner and with data to support efficient, effective decision-making.



A north/south mobility corridor that pairs light rail and low speed automated vehicles will connect the mobility and equity innovation zone directly to other centers of Buffalo's growing innovation economy—the Downtown, Buffalo's Medical Center and the State University of New York at Buffalo campus via a low cost/high convenience mobility spine.

Credit: Stantec



Automated vehicles will deliver food, medicine, and goods to people living in urban places with the density to support these services.



Credit: Nuro



# Innovation through **collaboration**



*Credit: Bill Bronrott*

Planners, urban designers (including Cleveland-based Ben Herring, center), developers, mobility experts, community leaders and local officials came together at the charrette to discuss how to avoid repeating what happened following World War II when we let near-universal access to cars reshape our communities. These diverse participants focused on how communities like Buffalo can plan for the next generation of mobility innovations—dominated by shared, connected, and automated mobility—to insure that these innovations represent powerful tools for creating more equitable, livable, and resilient places.

We are better  
**together**

## Vision

**Transform Lower Main into a mobility and equity innovation zone that serves as an incubator for leveraging economic, equity, and livability benefits from a quickly emerging era of unprecedented mobility innovations. The following principles translate these goals into action:**

**Make Buffalo a leader in a quickly emerging era of unprecedented mobility innovations.** Start planning today to test mobility innovations like mobility on demand, automated shuttles, and micromobility—without the need to depend on owning a vehicle—within the zone and to and from downtown, Buffalo, and the region.

**Build on unprecedented connectivity to achieve the walkable density that supports an amenity-rich, urban environment.** Create a compact critical mass of “downtown-scale” development and an intense mix of uses which support retail, arts, and similar diverse uses that bring the district’s streets to life.

**Leverage this fusion of connectivity and amenity to transform the district into an economic, fiscal, and equity engine for the City and region.** Transform an area heavily impacted by 20th century economic decline into a lively, new 21st century district that attracts and retains the talent, jobs and investment that build a globally competitive knowledge economy.

**Take concrete steps to ensure that the full spectrum of the Buffalo community can share equitably in an era of expanded opportunity.** Provide the robust workforce readiness, disadvantaged business participation, and skills training programs that grow talent locally and provide people from every neighborhood and livelihood access to better jobs and a personal ladder of opportunity.

**Ensure that the zone’s public realm actively invites inclusion.** Continue Buffalo’s strong commitment to affordable and mixed-income housing in every part of the City. Provide accessibility to people of every ability to every place and every opportunity the mobility and equity innovation zone offers. Build a public realm that uses interactive public art and similar tools to tell everyone’s story. In short a mobility and equity innovation zone that everyone in Buffalo can call “mine.”

**Build-in the authenticity of Buffalo’s living culture.** To do so, incentivize local entrepreneurs, artists, chefs, and others to set up shop and become integral partners in bringing the zone to life.

**Create a district that grows greener as it grows denser.** Take full advantage of the power of mobility innovations and compact critical mass together to achieve additional opportunities that everyone can share—net-zero emissions, replacing parking lots with parks, and promoting walkability and healthier living. In short, demonstrate how we can make our communities about people, not cars.



The mobility and equity innovation zone 2030.

*Credit: William Price, SWBR*



RETURN ON INVESTMENT

LOWER MAIN:  
2020

**7**  
underutilized  
parks

**30.4k**  
jobs

**1.2k**  
mixed-  
income  
housing  
units

**16.9M**  
SF  
of existing  
development

**18,504**  
parking  
spaces  
~.6 spaces for every  
resident and job in the  
district

LOWER MAIN:  
2030

**7**  
utilized  
parks  
including a revitalized  
historic Shelton Square

**10-15k**  
additional  
jobs

**4-5k**  
additional  
mixed-  
income  
housing  
units

**5-7M**  
SF  
of new  
development

**2-4,000**  
additional  
parking  
spaces  
~.4 spaces for every  
resident and job in the  
district

## Mobility innovations

The pace of change and innovation in the transportation and technology markets is exponential. In the last two years alone, e-scooters have overtaken bikeshare in popularity across North America. Automated vehicles are being tested in cities including Pittsburgh, Las Vegas, Ottawa and Detroit and even technophobes are using cell phones to book parking spaces. Most recently, Waymo has announced it will be scaling its AV subscription shuttle service from a pilot to all subscribers, who agree to its terms, through its digital application. This shuttle services includes a 100-square mile radius in the Phoenix, AZ area. Some new technologies are causing unplanned disruptions in our communities—from the rapid growth of ridesharing to navigation apps that may bring cut-through traffic in local neighborhoods to e-scooters requiring safe places to travel and park. The challenge and opportunity for Buffalo is how to harness this innovation to meet broader equity and economic development needs. This report identifies a number of key strategic initiatives that can help place Lower Main Street at the center of Buffalo’s mobility future.

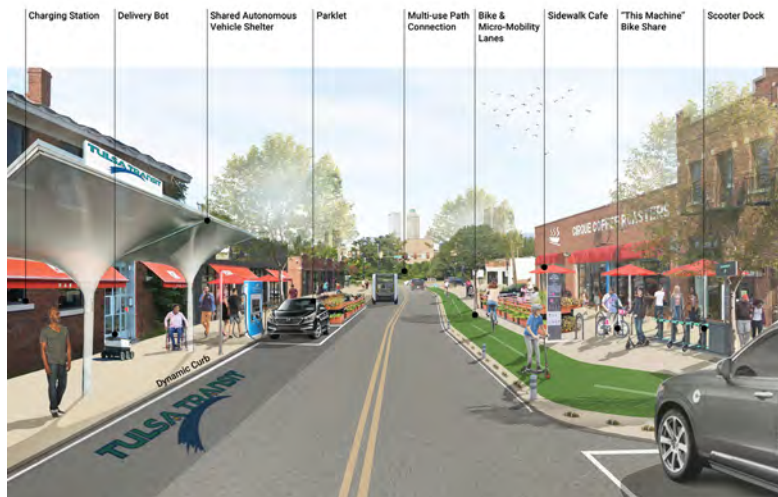
**Accelerating the re-imagining of downtown streets as 21st century public spaces:** Less an innovation and more a fundamental need for enhanced amenity, safety, walkability, and connectivity, this concept is to aggressively reverse decades of car-centric roadway planning and re-imagine Lower Main as a place primarily for people and the mobility-impaired. This means changes such as converting one-way

pairs such as Elm and Oak Streets to two-way, slower streets, embracing Lower Main’s roadways as a public space instead of a means to process peak hour traffic volumes, and planning for more ambitious projects—e.g. redesigning highway on/off-ramps to better reflect the walkable character of Lower Main.

**Beginning today, ridesharing and shared parking strategies:** (e.g. housing and office space, which have different peak use periods, share the same parking spaces) are reducing the need to build additional, expensive, parking to support development. As connected vehicles become the norm by 2030, vehicles will park in less space—freeing up space in every existing parking facility. Within another decade, shared automated mobility will sharply reduce parking requirements. We envision the mobility and equity innovation zone with extensive new development by 2040 that requires less parking than exists in the district today—much of it on sites currently used as surface parking lots.

**NS/EW smart mobility spines:** While use of e-scooters, bikeshare, and even LSAVs is widespread, dedicated, protected travel lanes to accommodate these often-conflicting modes is not. The mobility and equity innovation zone will utilize one of the City’s greatest assets—the street grid laid out by Joseph Ellicott. For today’s population, the City’s street network is significantly overbuilt, leaving substantial capacity to re-purpose streets for new forms of mobility. Two new mobility spines are proposed within Lower Main. One of these is an east-west corridor connecting to Larkinville and Broadway Filmore on the east and Lakeview and Grant Ferry on the west. This could use Exchange, South Division, and Swan Streets. The other is a north-south spine running parallel to Broadway on Washington Street. These spines would be the focus of mobility innovation including smart traffic signals, Universal Design, protected lanes for micromobility, and testbeds for deployment of automated shuttles and other vehicles.

**Creating new benchmarks for Universal Design:** The University at Buffalo’s Center for Inclusive Design and Environmental Access (IDEA) was an active participant during the charrette as were members of the ADA community. Lower Main Street has the opportunity to set a new standard in Universal Design standards. This means providing tactile clues at curb ramps, adding color to delineate different transportation zones (typically red for buses, green for bikes), adding pedestrian-scale lighting especially at bus stops and bikeshare stations, and providing audible cues for crossings and other design elements and signage. This rubric would also extend to mobility innovations such as design of mobility hubs to include ADA accessible scooters where feasible.



Credit: Stantec

↑ Mobility innovation is here! Many of the elements in this image exist already and others are only a few months or 1-2 years away. (*Mobility Innovation Strategy, Tulsa, OK*)



# Placemaking

Placemaking represents the convergence of mobility, land use and density, public realm, equity, and innovative public-private partnerships—integrated together into an urban design framework that will serve as the blueprint for transforming Lower Main into a mobility and equity innovation zone that stands as a North America-wide model for leveraging emerging mobility technologies to unlock equitable urban revival—and expanded economic opportunity. As the diagrams below and on the following pages indicate, this framework will be built around an enhanced mobility spine that connects the mobility and equity innovation zone directly to the rest of downtown and to the other centers of Buffalo’s innovation economy along with neighborhoods whose residents need better access to economic opportunity. This mobility “armature” also reaches East to connect some of Buffalo’s most challenged neighborhoods directly to the heart of the mobility and equity innovation zone.

Land use and density recommendations, together with innovative public-private partnerships, will incentivize rapid transformation of the mobility corridor into a green amenity corridor—a treelined concentration of “third places”—cafés, breweries, arts, music and similar activities that line Main and Washington Streets and contribute to a lively public realm that draws a diverse mix of people to live, work, innovate...and invest...in the mobility and equity innovation zone. Shared parking and innovative mobility strategies will minimize the need to build—and pay for—expensive new parking facilities while freeing up surface parking lots and underutilized sites across the mobility and equity innovation zone for redevelopment at downtown densities that support a network of lively streets and public spaces.

Equity and inclusion will be central to every aspect of the mobility and equity innovation zone’s growth. From day one, housing will be mixed-income and offer options for people of every income. Innovative public-private partnerships will not only help fund affordable housing, but also support job opportunities for artists, entrepreneurs, and businesspeople from across the economic spectrum to open businesses along the amenity corridor and enrich it with their creativity and drive. Perhaps most important, Erie Community College—together with M&T Bank’s Tech Academy, located in the Seneca One Tower, and nearby programs including the Buffalo Employment and Training Center, the Emerson School of Hospitality, and the University at Buffalo Educational Opportunity Center—will serve as a symbol of the City’s commitment to expanding workforce readiness, job training, internship and similar programs to ensure that everyone can contribute to, and share in, the mobility and equity innovation zone’s economic opportunities.

The following diagrams illustrate how mobility innovations can transform Lower Main, a district characterized by a mix of surface parking lots, vacant buildings, and large stand-alone developments into the mobility and equity innovation zone.



Credit: Mike Godfrey, Fisher Associates



## YEAR 1

Develop an urban design framework and create a robust Public-Private Partnership to help translate mobility innovations into a lively, inclusive mixed-use, mixed-income urban district—the mobility and equity innovation zone.



Credit: Mike Godfrey, Fisher Associates

**YEARS**  
**1-3**

Create an enhanced mobility corridor along Main and Washington Streets that connects the mobility and equity innovation zone to downtown and the other centers of Buffalo’s innovation economy (University at Buffalo School of Medicine and Biomedical Sciences and the main campus). Introduce an automated shuttle (utilizing a low speed automated vehicle [LSAV] that can function in mixed traffic with very short headways) that provides highly convenient, flexible and demand-responsive mobility for shorter haul trips. Continue to rely on the existing light rail service along Main Street to provide faster service for longer trips along the corridor.



Credit: Google Earth

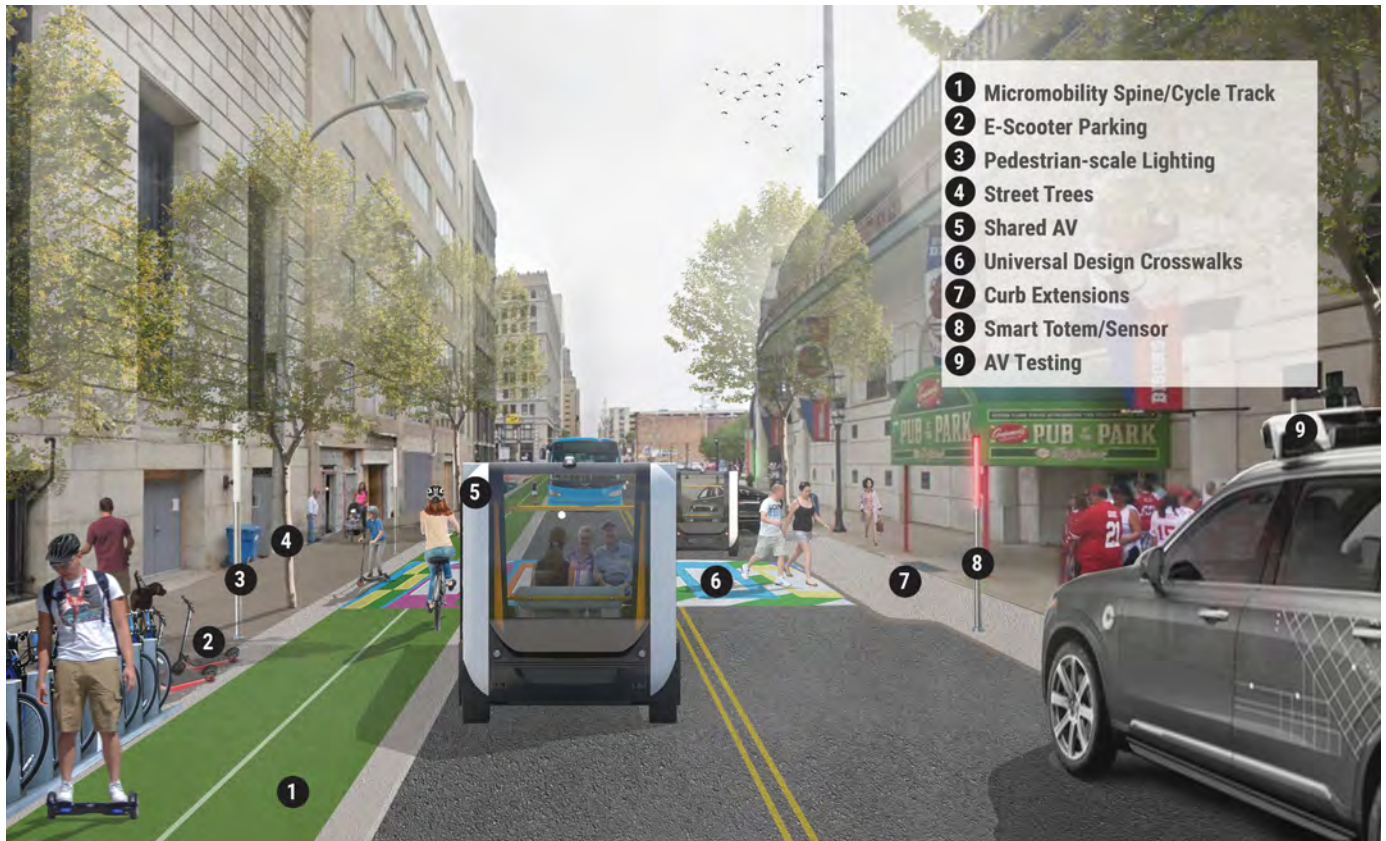


Washington Street today  
(between South Division and  
Swan Street).



**YEARS  
1-3**

An LSAV traveling in mixed traffic—the technology exists today to provide low cost, safe, and convenient LSAV service.



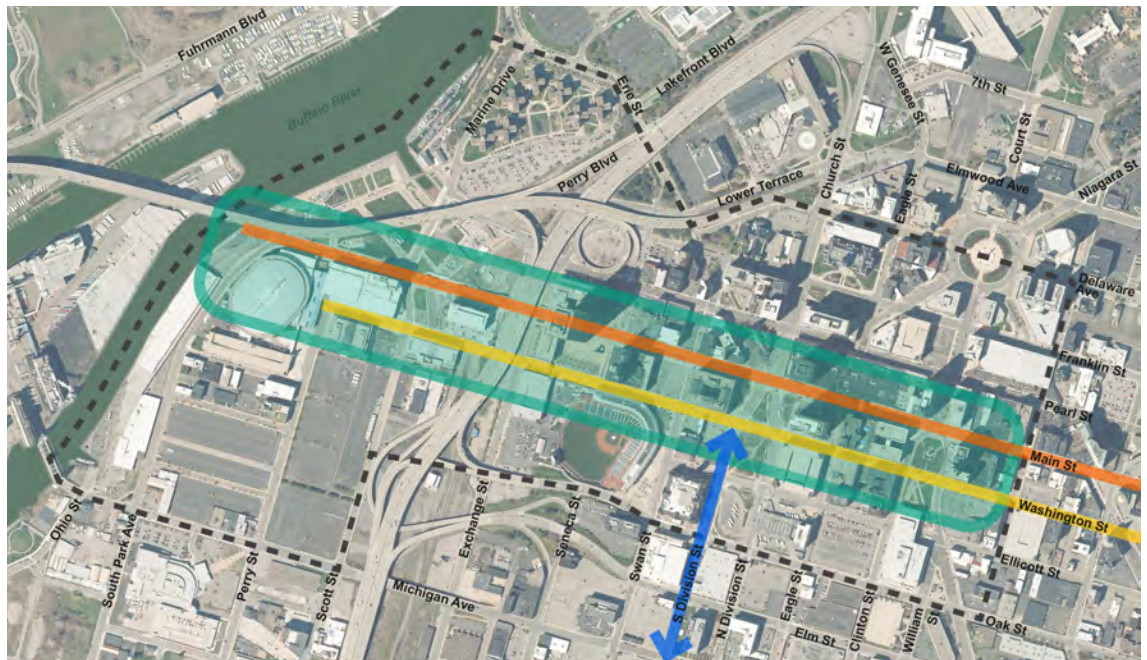
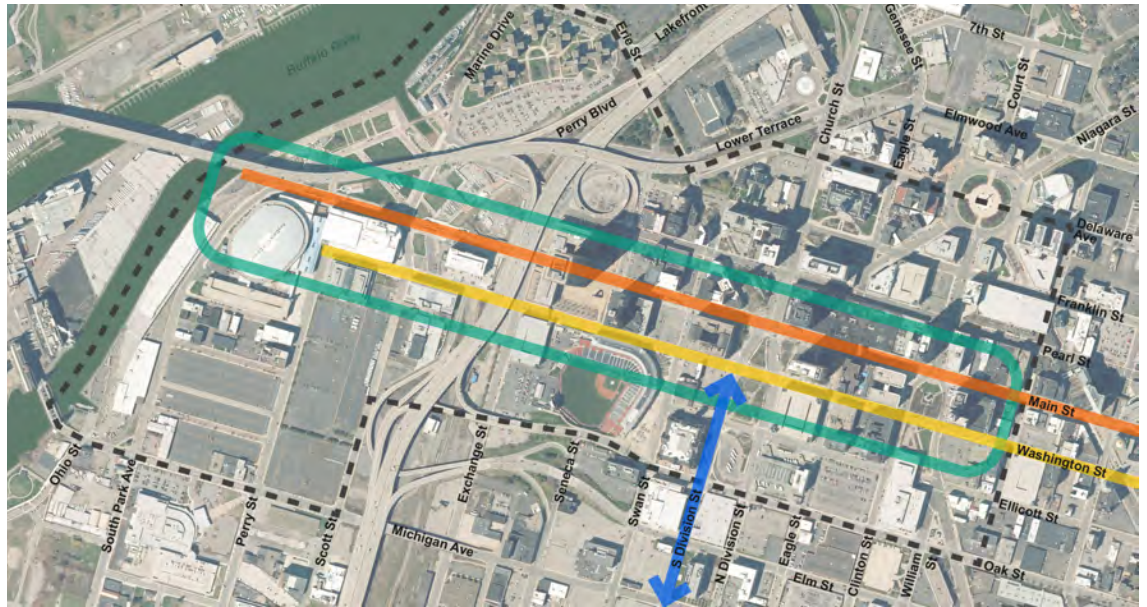
Credit: Stantec



**YEARS  
1-3**

To capitalize on enhanced access, use innovative public-private partnership strategies to translate the mobility corridor into an amenity corridor by incentivizing a compact critical mass of “third places”—cafés, breweries, restaurants, galleries, entertainment, maker spaces, and similar lively uses (many owned and operated by minorities, artists, and others who will enrich the corridor but who may require additional help getting started) in new and existing buildings along the corridor to promote community and invite people to live, work, learn, play...and innovate.

Connect the enhanced mobility corridor to Buffalo’s economically diverse “East Side”, via LSAV service, to provide enhanced access to new jobs, housing, and education.



Credit: Mike Godfrey, Fisher Associates

**YEARS  
1-5**

Incentivize intensive mixed-income housing, office and innovation spaces on upper floors in new and rehabbed buildings along the amenity corridor—at densities typical of downtown.



Credit: City of Buffalo



The amenity corridor today.

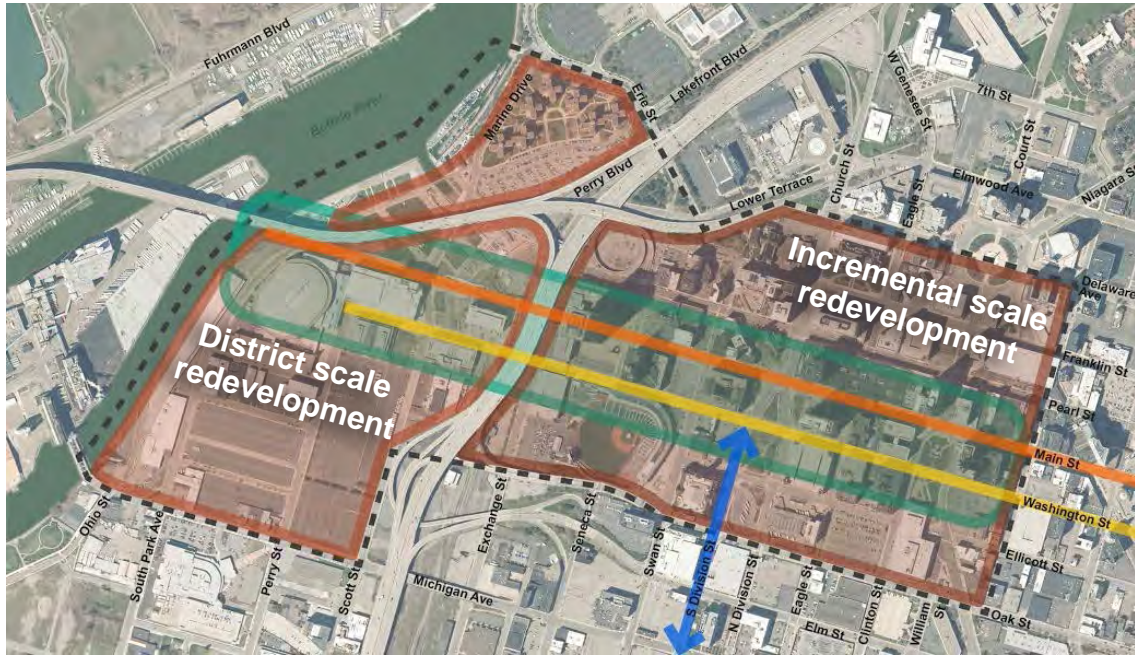


Credit: Ciminelli Real Estate Corporation/CannonDesign

## YEARS 1-5

Ciminelli Real Estate Corporation's mixed-use, mixed-income 201 Ellicott project—which will utilize existing nearby surplus parking rather than build new parking—symbolizes the mix of uses anticipated along the amenity corridor in the early to mid-2020s.



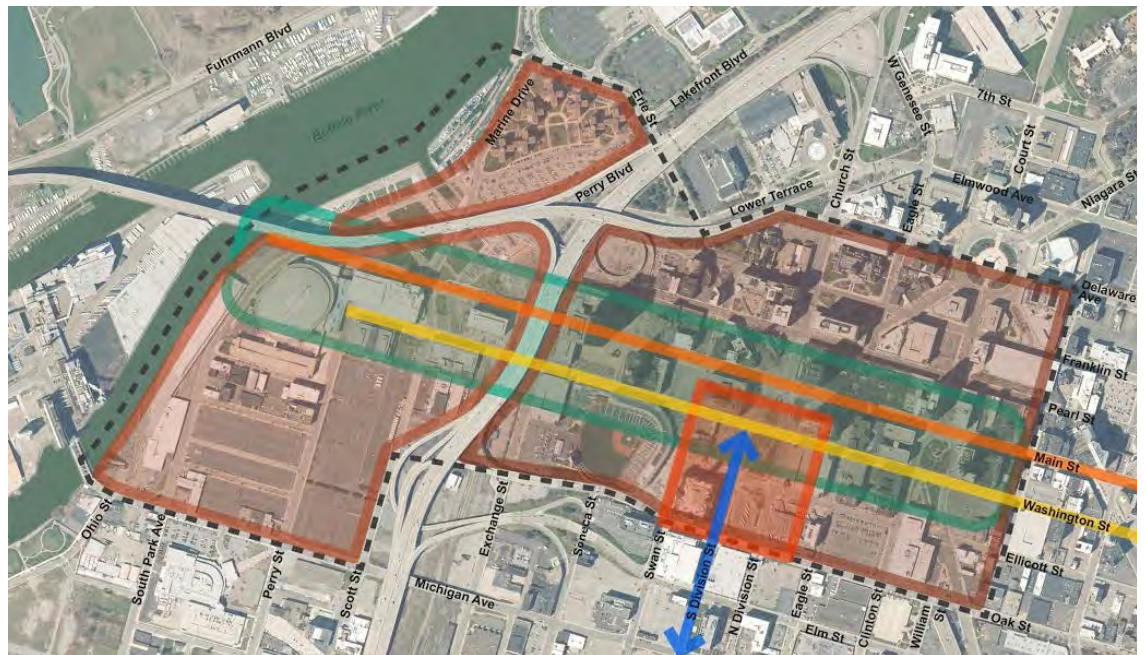


Credit: Mike Godfrey, Fisher Associates

**YEARS  
1-5**

Building on the draw of the amenity corridor expand downtown scale mixed-use, mixed-income development across the mobility and equity innovation zone:

- North of 190: focus on incremental, infill-scale and character redevelopment.
- South of 190: focus on district-scale and character redevelopment, including a new diverse urban neighborhood and street grid.

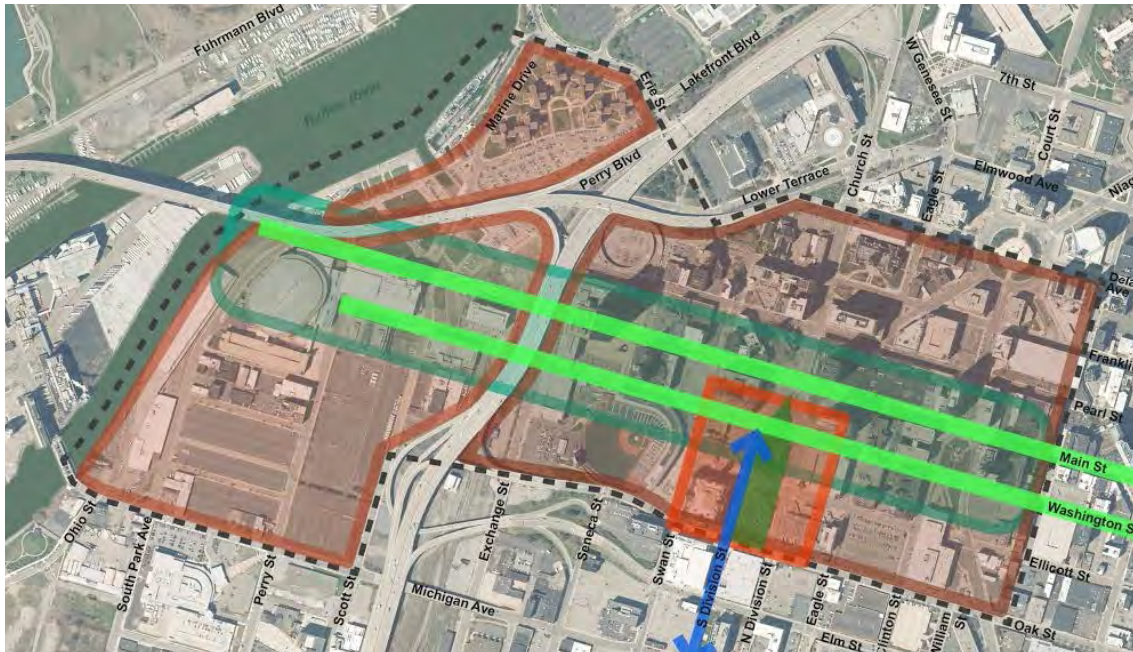


Credit: Mike Godfrey, Fisher Associates

**YEARS  
1-5**

Tap Erie Community College to provide increased workforce readiness and job training in collaboration with new businesses in the mobility and equity innovation zone. Encourage a variety of student-oriented business and unique community-based retailers to locate along with other businesses along the amenity corridor to promote a truly diverse district.

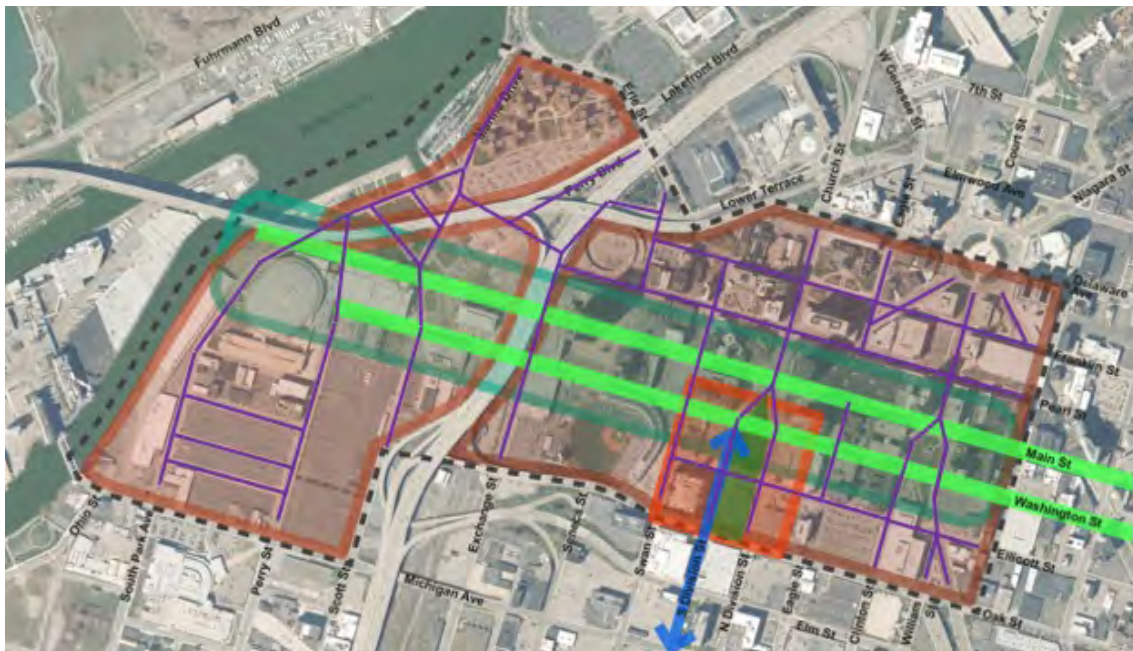




Credit: Mike Godfrey, Fisher Associates

**YEARS  
1-6**

Reclaim historic Shelton Square and transform the mobility/amenity corridor into the mobility and equity innovation zone’s signature public realm—incorporating interactive public art and similar tools to tell everyone’s story and make the mobility and equity innovation zone that everyone in Buffalo can call “mine.”



Credit: Mike Godfrey, Fisher Associates

**YEARS  
6-20**

Expand LSAV service to provide highly convenient, flexible, and demand-responsive mobility across the entire mobility and equity innovation zone.





Credit:  
Google Earth

Today: South Division Street looking east toward Washington Street and the Gothic Revival style Erie Community College (ECC), Buffalo's most prominent landmark. ↑

→  
Future: South Division Street as an east/west connection utilizing LSAVs to link Buffalo's lower-income East Side neighborhoods directly to the heart of the mobility and equity innovation zone.

Note:

- New mixed-use, mixed-income redevelopment along Washington Street with lively new retail and ECC-related retail, food, and entertainment lining South Division and Washington Streets.
- ECC would serve as a center of work force readiness and training to connect people from all backgrounds to the mobility and equity innovation zone's jobs and opportunities to start businesses.
- Historic Shelton Square would be reclaimed as a signature public park.



Credit: William Price, SWBR





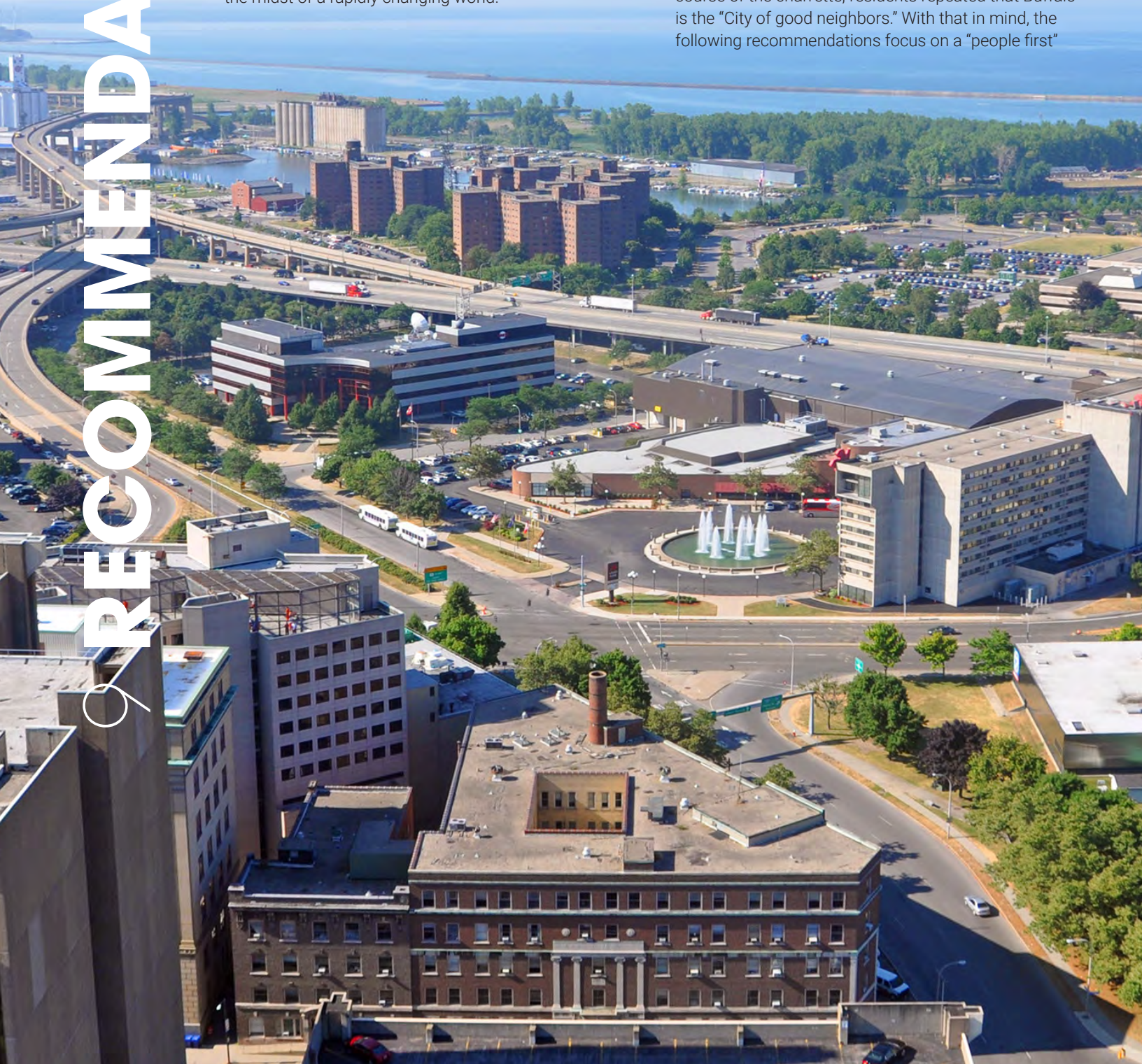


## Overview

The team looked to existing foundations—including current planning documents, code sections, and policies (e.g. the Green Code, Complete Streets policy or ordinance, and Moving Forward 2050)—to determine the recommendations for making Buffalo’s vision of its future a reality. The recommendations embrace the spirit and intent of policies and strategies already in place, while proposing additional measures to ensure that they can provide even more effective guidance in the midst of a rapidly changing world.

Mayor Brown demonstrated his commitment by recent announcements focused on funding to promote mobility innovations in addition to the investment of time and resources in the smart mobility-focused charrette informing this report. The City understands the importance of investing in planning to be proactive rather than reactive; focusing on community and investing in mobility resilience is even more important now in the wake of the crippling public health emergency.

In the outreach and brainstorming conducted over the course of the charrette, residents repeated that Buffalo is the “City of good neighbors.” With that in mind, the following recommendations focus on a “people first”





theme. What makes Buffalo different and diverse is what makes the City great. This should be celebrated and serve as a foundation for the future of the mobility vision.

Rethinking the future of mobility within the mobility and equity innovation zone requires a community-specific approach. As new mobility and land use policies are rolled out across the country, there is no one-size fits all approach, as different cities and regions adopt diverse policies, funding streams, and infrastructure. Also, with the number of emerging transportation technologies coming online, it is imperative to advance the vision for how technology will serve a community.

### **The following recommendations seek to balance practicality with a transformative vision.**

The goal is to be forward thinking, but also create a plan that is more than just words—an actual roadmap for implementing workable solutions. Through improved mobility, there is an opportunity to rethink how Buffalo moves, grows, and captures the inspiration and opportunity experienced over the course of the charrette.

Principles that support the implementation of this future vision for Buffalo with mobility as a cornerstone include:

- Starting with the notion that more safe, reliable, convenient, and affordable transportation options are critical to ensure Buffalo grows into a place that provides mobility freedom for all residents and thereby improves livability, including access to affordable housing, job opportunities, education, healthcare, and recreation—in tandem with expanded economic opportunity for all. While the mobility and equity innovation zone is the start, the City as a whole is the goal.
- Engaging the full spectrum of the community in every facet of planning, early and often, to achieve the best possible plan and the most political will to move the vision forward.
- Making sure that the mobility and equity innovation zone is an incubator for livability and economic opportunity—not only for those that live in the mobility and equity innovation zone but also by identifying opportunities to apply lessons learned to all parts of the City.
- Considering the integration of Universal Design at the outset rather than after the fact to ensure equity and accessibility are a priority from the start. This includes proactive review of how ADA requirements will evolve as smart mobility solutions become more prevalent.
- Ensuring policies and procedures are in place to support ongoing evaluation of deployments through the collection and analysis of data. This allows for future deployments of mobility innovations to continue to improve, similar to how software is constantly being reevaluated and bugs are worked out through future versions (e.g. versions 1.0, 2.0, 3.0, etc.).
- Focusing in future readiness to ensure flexibility and adaptability are a priority as Buffalo approaches a period of rapidly accelerating mobility innovations.



## Achieving goals is never easy.

However, with an incremental implementation strategy for the following recommendations, foundations can be put in place to support moving forward with purpose and practicality. Traditional norms will be challenged, particularly around governance, but Buffalo has a proud history of overcoming challenges. There is opportunity to leverage the existing foundations, sense of community, and determination present during the charrette to implement the recommendations and achieve the vision presented in this report.



Credit: Gary Kavanagh/Santa Monica Next

↑ Cities all over the country (above: Santa Monica, CA) are re-purposing the right-of-way for new forms of mobility. Parking areas for e-scooters that would otherwise litter the sidewalk are just an example of how to re-think curbside use. Buffalo's street grid is overcapacity and has plenty of space to designate micromobility lanes that could serve cyclists and e-scooters.

### 1. Establish Lower Main Street as a New Mobility And Equity Innovation Zone.

As a first and foundational step, it is recommended that the Lower Main Street district be designated a mobility and equity innovation zone. The designation serves as a platform for the district to become the hub of new mobility innovation for both the City and the region, attracting talent, jobs, investors, technology, and transportation start-ups. This builds on the demographic shift already underway toward both a younger and older, more diverse, and tech-savvy 24/7 downtown population. The new mobility and equity innovation zone will serve as both an economic development tool and an area that through zoning and regulations will be more flexible to encourage piloting and demonstration of new technologies that can lead to widespread adoption. This recommendation is critical in raising the profile of Lower Main Street as a place for potential partnerships and as an incubator for start-ups and innovators across the transportation industry. Potential programs might include access to public assets including the curb, right-of-way, and garages in return for data sharing. The mobility and equity innovation zone must also reflect the goals of the City's recently adopted Green Code.

**Implementation:** Mayor's Office of Strategic Planning, Buffalo Urban Development Corporation, newly formed mobility and equity innovation zone Task Force.

**Next Steps:** Peer review innovation zones in similar cities, identify target businesses—for example, the region's very own Buffalo Automation, which is currently located outside the City limits, determine potential tax incentives or zoning incentives for businesses.

### 2. Create East-West and North-South Smart Mobility Spines.

The success of Lower Main Street and its surrounding neighborhoods will depend heavily on the strength of the transportation connections. To that end, it is recommended that two new smart mobility spines are created including a north-south corridor on Washington Street and an east-west spine on either (or all) of South Division, Swan, or Exchange Streets. This concept re-purposes roadway cross-sections to better accommodate walking and biking, as well as e-scooters, bicycles and future adaptation to automated vehicle deployment. Initial improvements should focus on upgrades to NFTA amenities such as bus shelters, the addition of real-time information, signage, lighting, and safety. Over time, these smart mobility spines will also incorporate technologies such as upgraded signal communications, smart parking sensors, and transit signal priority. The spines are valuable on several levels: first, as a multi-modal connection to the City's historically underserved neighborhoods to the east and west providing affordable, convenient access; and second as testbeds for new mobility innovations and technology. The north-south spine connects Lower Main to Delaware Park, hospitals, and the University at Buffalo South Campus (and School of Architecture, home of IDEA) and could serve as the Universal Design test bed.

**Implementation:** Department of Public Works, Buffalo Urban Development Corporation, Downtown BID.

**Next Steps:** Perform traffic analysis to determine volume to capacity ratios and ability to reduce lanes assigned to regular car traffic, develop new conceptual cross-sections, pilot sections of roadway for low-cost interventions using signage and paint, prioritize enhancements to existing service such as buses.





**3. Accelerate Re-Imagining of Downtown Streets as Public Spaces for 21st Century.**

Once a walking City with a dense network of streetcars, like many North American cities, Buffalo embraced the highway-building era and Lower Main Street was re-conceived as a place for weekday car commuters to enter and leave at high speed.

The legacy of this era is evident today in the system of one-way pairs that funnel office workers into Lower Main in the mornings and out again in the evenings. I-190 bifurcates the study area too, with flyovers and viaducts carrying on- and off-ramps almost to the commercial front door. Parking lots also dominate the downtown, covering more than a third of all surface area. The net result is that while there are pockets of walkable, vibrant city blocks, they are scattered and poorly connected, interspersed with high-speed vehicular streets that are intimidating to all but the most fleet of foot. This strategy builds on the district’s assets of a well-connected street grid and network of sidewalks and open spaces and re-imagines key streets, not as high-speed conduits for vehicles but instead as comfortable, walkable public places to linger.

**Implementation:** Department of Public Works, Buffalo Urban Development Corporation, Downtown Business Improvement District.

**Next Steps:** Traffic study of downtown to review circulation and potential for converting one-way pairs to two-way.

**4. Create New Benchmark for Universal Design.**

Rather than incorporating as an afterthought, there is an essential need and opportunity to include accessibility and ADA compliance when the mobility and equity innovation zone is established. As new mobility innovations begin to operate within the zone, there is an opportunity to rethink how these innovations can benefit those most in need, including the disabled community. For example, tactile clues at curb ramps, adding color to delineate different transportation zones (typically red for buses, green for bikes), adding pedestrian-scale lighting especially at bus stops and bikeshare stations, providing audible cues for crossings, and other design elements and signage. As the City plans introduction of an automated shuttle, it can plan from the start to ensure that every part of the trip—access to stations, stations themselves, the vehicle, and related services—is fully accessible to all Buffalonians. Not only does such a strategy support the inclusive goals of the mobility and equity innovation zone, but it also ensures the mobility and equity innovation zone is a part of the community that is welcoming to all.

**Implementation:** City Planning Board, Department of Public Works, University at Buffalo Center for Inclusive Design and Environmental Access (IDEA), newly formed mobility and equity innovation zone Task Force.

**Next Steps:** Work with IDEA to identify priorities in Lower Main Street. Consider inviting a studio to brainstorm ideas/serve as a capstone project.

Streetcars once stretched across the City (top image, on Broadway, taken to celebrate the last day of the City’s streetcars in July 1950). People on foot packed sidewalks. This plan aims to restore this people-first paradigm that was abandoned in the highway era and as Buffalo’s streetcars were phased out.

New forms of mobility (middle image) provide a platform to restore the dense, people-centric street life for which Buffalo and Lower Main Street were once known. (*Downtown Master Plan, Memphis, TN*)

The mobility and equity innovation zone will serve as a new benchmark for Universal Design (last image), standards that ensure accessibility to people of all abilities.



*Credit: Collection of The Buffalo History Museum. General photograph collection, Transportation - Land - Electric*



*Credit: Stantec*





The curb of the future can support both more trips and many different types of trips including rideshare, e-scooters, shared AVs, bikeshare and technology interventions providing users with real-time information. One of the biggest beneficiaries? Local retailers.

Credit: Stantec



### 5. Manage the Curb for High People Volumes, Not Cars.

The City's Parking Enforcement Division has implemented many best practices (and as of February 2020 was operating at a profit). Current initiatives and programs include the addition of transportation demand management (TDM) services as part of its existing parking vendor contract, a recently launched "Buffalo Roam" app that offers mobile forms of payment, and experimentation with a flex pass that allows parkers to use the same technology to access both City-owned parking ramps and public transit. Parking prices were also raised in 2020 and the City is exploring new loading zones with time of day management. Gradually as parking prices continue to rise in the Lower Main Street District, and surface lots are displaced by new buildings, parking demand will grow and will need to be more closely managed.



Managed, high-demand curbs are a reality in a number of cities like Boston (top photo). The curb serves as a signed, pick-up/drop-off zone (PUDO) that better supports the high-volume, visitor-oriented needs of Boston's Fenway sports and entertainment district than static curbside parking. A similar approach is recommended in Lower Main and might be piloted near the baseball stadium (bottom photo). The curb of the future can support both more trips and many different types of trips including rideshare, e-scooters, shared AVs, bikeshare, and technology interventions providing users with real-time information.

This has a number of implications:

- In core areas such as Lower Main, the curbside will be in high demand and the busiest blocks can become testbeds for active, dynamic curb management.
- Drop-offs and pick-ups will intensify, as will demand for short-term parking and visits.
- Neighboring surface lots such as those in the arena district at the Key Bank Center are well-suited to longer-term parking served by an AV shuttle and micromobility.

The net result will be a need to actively manage the curb for new forms of mobility. This is already happening in cities across the county, whether in designating curbside space for bike corrals, TNC pick-ups and drop-off zones, e-scooters, bikeshare or short-term parking.

**Implementation:** Parking Enforcement Division, Department of Public Works, Niagara Frontier Transportation Authority, Greater Buffalo Niagara Regional Transportation Council.

**Next Steps:** Identify suitable pilot blocks based on levels of complexity (start with a less complex block), trip demand. Develop a curbside management strategy for TNCs and micromobility.

↑ Example of LSAV operating in mixed traffic on a street whose public realm has been redesigned to create a lively, inclusive public realm (Brooklyn Village, Charlotte, NC).

Credit: Stantec



**6. Marry Green Code with Smart Mobility.**

Mobility strategies should happen in lockstep with new development. This means keeping abreast of new mobility innovations and providing sufficient flexibility within the City’s new Unified Development Ordinance (UDO) to allow the mobility and equity innovation zone to thrive. Elements of the UDO may be suitable for adaptation to the mobility and equity innovation zone.

Access and parking provisions already align with best practices—there are no minimums and shared parking is permitted. TDM plans are currently required for new construction of a principal building in excess of 5,000 square feet and renovation of a principal building with a gross floor area in excess of 50,000 square feet and involving a change of use. This is consistent with other progressive TDM ordinances across the country. Additional opportunities for advancing the mobility and equity innovation zone might include:

- Consider creating a new mobility and equity innovation zone overlay zone within the UDO.
- At a high level, the City should seek to incent new businesses and development projects within the mobility and equity innovation zone that collaborate on smart mobility initiatives. This could include:
  - Height or other bonuses for projects that include smart mobility elements.
  - Expedited permitting and approvals in return for annual data sharing on TDM efforts and resulting employee travel habits.

Elements of the existing UDO may also warrant revisiting or special treatment within the mobility and equity innovation zone. For example, **Article 10. Transportation Network** might consider the following amendments:

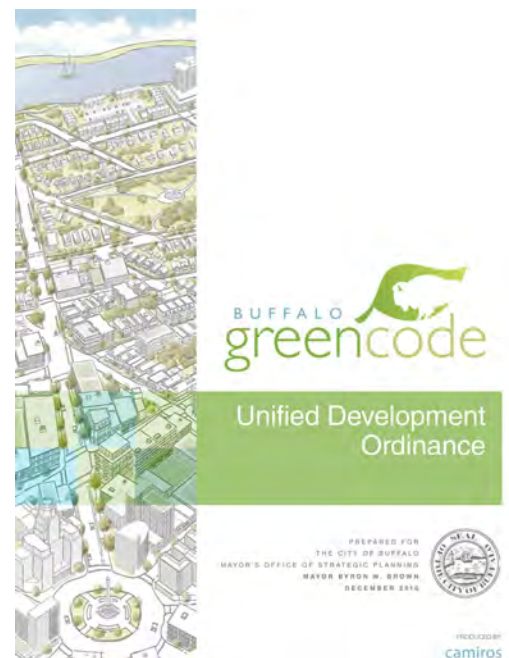
- Addition of the proposed mobility spines as a right-of-way type defined in Section 10.2 Rights-Of-Way.
- “Edge zones” are currently defined as the area of the sidewalk “used by people getting in and out of vehicles parked at the curbside.” A new area of the sidewalk might be designated a “high-capacity curb area” within the mobility and equity innovation zone intended for curbside pick-up and drop-off, microtransit and other forms of active transportation and shared mobility.
- Bicycle Facilities as currently defined in the code might also include provisions for accommodating e-scooters, e-bikes, and the like.

**Implementation:** Mayor’s Office of Strategic Planning, newly-formed TDM Committee.

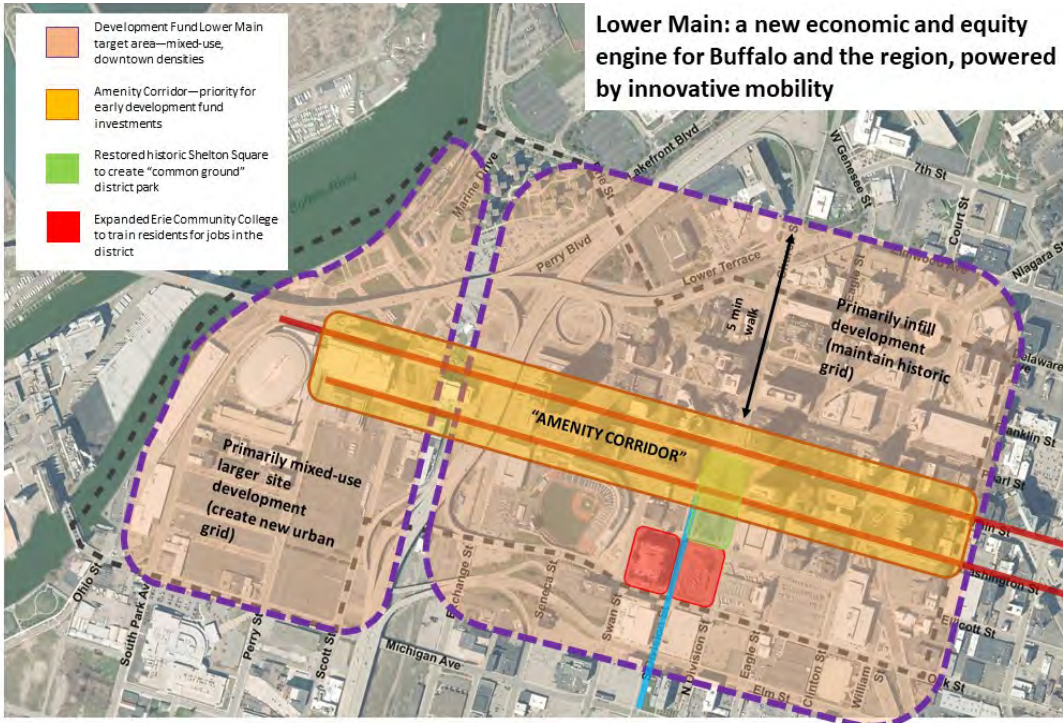
**Next Steps:** Consider elements of the mobility and equity innovation zone that may warrant updates to the UDO.



Buffalo’s Green Code represents a strong zoning platform for integrating mobility and land use planning for the mobility and equity innovation zone.



Credit: City of Buffalo/Camiros, LTD



Credit: Mike Godfrey, Fisher Associates

The first step in creating an Urban Design Framework that integrates mobility, land use and density, public realm, urban design, public-private partnerships, and infrastructure to create a mobility and equity innovation zone that captures the promise of a fully synergistic redevelopment.



**7. Create a Mobility and Equity Innovation Zone Urban Design Framework.**

Develop an Urban Design Framework that integrates the mobility and equity innovation zone’s core mobility, land use and density, public realm, urban design, and public-private partnerships, and infrastructure dimensions to ensure that the district captures the promise of a fully synergistic redevelopment. The Urban Design Framework should include:

- An “innovative mobility” plan that address all modes.
- A phased physical plan, closely coordinated with the innovative mobility plan, to guide redevelopment and public realm priorities.
- An “amenity corridor” redevelopment strategy—including a variety of financial incentives and policies—targeted toward promoting early development of a lively mix of “third places” (locally-owned cafés, restaurants, book shops, breweries, and similar amenity mixed-use development) along Main and Washington Streets. This amenity corridor would provide the activity and animation to support genuine walkability and accelerate the larger Lower Main district’s desirability as a place to live, work, play, and invest.
- Robust mixed-income housing strategies that support diversity across the mobility and equity innovation zone.
- A robust disadvantaged business program—incentivize local entrepreneurs, artists, and others to imbue the mobility and equity innovation zone with the authenticity of Buffalo’s living culture. Small businesses together with unique arts and entertainment venues that capture the essence of every segment of the Buffalo community will ensure that

the mobility and equity innovation zone is as much about inclusion as it is about mobility.

- Downtown densities and building heights, within a five-minute walk of the amenity corridor, to provide the compact critical mass of people and activity to support third place uses along the corridor and in turn to take advantage of the corridor’s walkable amenity to support higher residential, office, and innovation space rents.
- A land use plan that promotes mixed-use development and a wide variety of live/work/play/culture and other uses across the district.
- An inclusive public realm plan that promotes public spaces programmed and designed to actively invite everyone, foster informal interaction, and in other ways create a sense of community across a diverse population.
- A shared parking strategy.
- Urban design guidelines—achieving the mobility and equity innovation zone’s potential requires a fully integrated plan of action that guides every public agency, private landowner or investor, institution, and other stakeholders.

**Implementation:**

- Sponsor: Buffalo Urban Development Corporation, Department of Public Works, City Planning Board
- Costs and funding strategy: See Buffalo Strategic Development Fund on following page.

**Next steps:** Complete a community-based City-sponsored Urban Design Framework plan by June, 2021 and adopt by late 2021.



## 8. Create a Buffalo Strategic Development Fund

Unlock feasibility for development and public realm projects that directly support Buffalo’s goal to attract a wide range of jobs and investments by enhancing urban environments. Provide flexible “but for” funding that spurs strategic mobility and equity innovation zone redevelopment. Target the Main/Washington Streets corridor first to create a highly walkable “amenity corridor.” Support projects ranging from large-scale, mixed-use developments to retail start-ups by disadvantaged businesses. The fund would serve as a bridge between present market conditions, which do not yet support market rate residential (despite strong demand) and most other forms of development without public subsidy, and a point in the future at which redevelopment has spurred increased real estate values and the market will be able to support new development without subsidies. A fund like this is particularly relevant for cities like Buffalo that are close to exhausting their supply of buildings eligible for historic tax credits and need to move to a new model for downtown redevelopment which relies on new construction but also requires public investment to make new construction feasible.

The mobility and equity innovation zone will be a poster child for New York State’s commitment to building a 21st century economy and expanding economic opportunity. The State has played a major role in supporting Buffalo’s revival and the mobility and equity innovation zone Strategic Development Fund would represent an excellent candidate for further investment. A variety of other State, local and institutional funding sources can also play a critical role, for example:

- Accelerator Fund (Pilot Increment Financing Model)
- BBRP Loan Program (Buffalo Urban Development Corporation)
- Buffalo Billion Funding (Empire State Development)
- CFA Funding (Empire State Development)
- PACE Program (Energy Improvement Corporation)
- Commercial Corridor Revitalization Program (National Grid)
- Buffalo Urban Renewal Agency
- NYS Department of Homes and Community Renewal

### Implementation:

- Sponsor: Buffalo Urban Development Corporation
- Costs: Development
- First five-year redevelopment goals: \$120-150M to support:
  - 1,000 market rate housing units
  - 300 affordable housing units
  - 300,000SF of office, innovation space, retail, hotel
- Second five-year redevelopment goals: \$60-75M to support:
  - 1,000 market rate housing units
  - 300 affordable housing units
  - 300,000SF of office, innovation space, retail, hotel
- Incentive funding projected to lapse in ten years
- Public realm (tree-lined streets, restoration of Shelton Square): \$25-35M

Credit: Downtown Memphis Commission



↑ A new Buffalo Strategic Development Fund will be essential to capture the real estate and economic development benefits unlocked by mobility innovations (example of public-private partnerships at work).

**Next steps:** Launch in conjunction with adoption of mobility and equity innovation zone. Adopt the Urban Design Framework (late 2021) and in conjunction:

- Develop detailed funding mechanism strategy
- Secure State funding commitment
- Development project approval criteria (focus on financial, programming, design, equity)



↑ Erie Community College, a mobility and equity innovation zone landmark, can serve as the hub of workforce readiness, skills training, internships and similar initiatives to give every member of the Buffalo community access to jobs and other economic opportunities in the mobility and equity innovation zone.

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The mobility and equity innovation zone should benefit the whole City; not just those living in the mobility and equity innovation zone.

**9. Incorporate Workforce Readiness, Education, and Training Programs Into the Mobility and Equity Innovation Zone.**

This recommendation is essential to ensure the mobility and equity innovation zone benefits the whole City not just those living in the mobility and equity innovation zone. During the charrette, participants noted that the mobility and equity innovation zone may become an economically segregated and separate part of the City. A genuinely inclusive district requires policies and programs in place at the outset focused on ensuring that the mobility and equity innovation zone’s economic benefits—including attracting knowledge industry jobs and investment—be accessible to Buffalo’s current workforce. Meeting this goal requires more than just “retraining” programs. Erie Community College and other nearby workforce readiness and training providers noted earlier in this report would be well-placed, to participate in a series of partnerships with mobility and equity innovation zone employers that focus on workforce readiness (including addressing health, childcare, criminal justice, and related issues that block access to jobs), education, and training geared to workforce needs. These could be supplemented by “experiential learning” work/study and apprenticeship programs.

**Implementation:**

- Sponsors: Buffalo Urban Development Corporation (small business), Buffalo Employment and Training Center (workforce), Beverly Gray Business Exchange Center.
- Costs and funding strategy: The costs and funding needs for this program will be programmatic in nature, but any costs will be returned through the investment made in job growth and employment. From the City and educational institution perspective, funding will need to be budgeted to support the implementation of policies and partnerships. On the private side, the costs of demonstration and education can be incorporated into operational costs. The City may consider providing tax breaks for time and resources spent in support of such a program. Once a policy and partnership framework is developed, this will support seeking out grant and philanthropic funding focused on the future of work. Startup funding could be provided by the Buffalo Strategic Development Fund (see *Recommendation #8*).

**Next steps:**

- Adopt a policy focused on education, training, and workforce with the implementation of the mobility and equity innovation zone.
- Establish a committee to develop a framework for the needed partnerships between the city, educational institutions, and private sector.
- Work closely with Erie Community College and other potential workforce readiness and training providers.
- Consider additional partnerships and programs involving Buffalo Public Schools.



**10. Ensure that the Mobility and Equity Innovation Zone Emerges as a Genuinely Mixed-Income Community.**

The City is committed to a proactive approach to ensure the mobility and equity innovation zone will be affordable to Buffalonians of all incomes. The charrette participants set a goal of 30% for housing affordable to residents earning 80% or less of area median income (AMI)—including a mix extending from “workforce” to very low-income households. This commitment is welcome and essential because higher density, walkable, highly amenitized districts invariably attract higher income households who bid up housing costs. The City has many resources and strategies for inclusion of affordable units as a threshold prerequisite to receiving public investment. Mixed-income buildings, as opposed to side by side buildings housing people of dramatically different incomes, is strongly preferred. A mixed-income community is about more than affordable housing. It also requires a range of retail and services geared to the full spectrum of the community, public spaces programmed and designed to bring people of diverse backgrounds together, and—as noted previously—a proactive commitment to provide the workforce readiness and training programs to expand access to the new and better jobs a more diverse economy will bring. The mobility and equity innovation zone will also represent a laboratory for exploring how mobility innovations can enhance access to jobs, education, healthcare—and each other—for the full spectrum of Buffalonians across the city.

**Implementation:**

- Who sponsors: Buffalo Urban Development Corporation

**Next steps:** Costs and funding strategy: (See Recommendation #8 Create a Buffalo Strategic Development Fund)



Proposal for One Charlestown for redevelopment of 1,100 units of public housing in Boston’s Charlestown neighborhood into more than 2,500 units of mixed-income housing, together with a new “Main Street”, public parks, workforce readiness and job training, and health facilities to be shared with the adjacent neighborhood.



Credit: Stantec



**THE ROLE OF DATA TO IMPROVE MOBILITY OPTIONS**

The convergence of mobility and innovation has led to the ability to request a ride from a TNC, order groceries, or reserve a dockless scooter with just the swipe of your finger on your phone. The use of digital applications (better known as “apps”) has further inspired new innovation focused mobility solutions, including through the sharing economy which supports reduced dependence on car ownership and single occupancy rides.

One of the opportunities and challenges with the use of digital applications is the data collected through use of an app. Data can provide important information around how services are being used and where, which can help planning decisions and

prioritizing public works projects. This includes the deployment of new services focused on equity and accessibility. On the other hand, without proper policies and governance focused on risk mitigation, data may also cause privacy and cybersecurity concerns, especially around sensitive geolocation information that may be shared.

**The creation of the mobility and equity and innovation zone presents an important opportunity to ensure the use of data safely and responsibly.**

As the City moves forward, it should also implement a practical data sharing approach that aligns interests between the public and private sector. The policy will allow the City to be a leader in maximizing the value of data while mitigating risks and promoting transparency in the use of data. This process should start now as the use of data is not limited to just the establishment of the mobility and equity and innovation zone.

Immediate next steps can include: Establishment of a Data Governance Task Force; identifying use cases for the analysis of anonymized data to improve efficiency in decision-making and promotion of public trust; establish data governance and use policy; ensure appropriate resources are budgeted to support the safe and responsible use of data.

# 10 CONCLUSION

**As noted at the outset, the goal of this effort is to **not only to create a vision for the Future of Buffalo with a focus on mobility, equity, and livability, but to also to provide a roadmap towards implementation.****

As identified through the smart mobility charrette, establishing a workable policy framework is an important foundation for success. Establishing the right policy focus sets in motion the implementation of the mobility and equity innovation zone to address the priorities discussed in this report.

It is necessary to note that at the time of publication, the COVID-19 public health emergency was ongoing. However, rather than push recommended next steps back due to unforeseen budget challenges, the inequities around mobility that have come into clear focus as a result of the pandemic have increased the need to rethink access to safe, reliable, and convenient transportation options. While the challenges will be great, the opportunity to challenge the status quo has presented itself and this report seeks to inspire a collaborative effort by the public, philanthropic community, and private sector to achieve the vision upon which this report is based.

## **The following are policy-focused recommendations to support the establishment of the mobility and equity innovation zone:**

### 6 MONTHS

- Issue a Request for Proposals for the reformed Buffalo Building Reuse Loan Fund seeking new build infill projects in the mobility and equity innovation zone.
- Release the Request for Proposals for a parking management operator of the City's parking assets that will also lead the execution of transportation demand management strategies throughout the city.
- Establish a Data Governance Task Force.
- Establish mobility and equity innovation zone Task Force. Task Force should be comprised of key local and regional stakeholders. Suggested goals for the Task Force are:
  - Coordinate completion of a code harmonization audit seeking to review existing policies, statutes, and regulations to identify existing challenges around the establishment of the mobility and equity innovation zone and implementation of demonstration projects focused on mobility and innovation and modernization of land use policies/codes .
  - Lead development of a smart mobility vision for the City and establishment of a Smart Mobility Ordinance for the City that will be updated based on data gathered from the mobility and equity innovation zone demonstration projects.
  - Advise on efforts to develop a plan to achieve City wide coordination across agencies in support of establishment of the mobility and equity innovation zone and future smart mobility focused policies.
  - Peer review innovation zones in similar cities and identify target sectors and receive presentations from industry leaders.
  - Finalize boundaries for mobility and equity innovation zone.
  - Facilitate private sector engagement.
- In line with recently adopted New York State legislation, introduce ordinances allowing emerging mobility options such as e-bikes and e-scooters.
- Conduct demonstration projects of electric micromobility (EMM) and other forms of emerging mobility.
- Adoption of a green space impact fund in the Green Code to fund the creation of green space in downtown and adjoining areas.
- Expansion of Buffalo's existing Downtown Business Improvement District.
- Focus on public outreach and education through the establishment of a Mobility as a Service (MaaS) Initiative.
- Continue to closely monitor developments around transportation policy, funding, and innovation-driven mobility solutions.



Credit: CNU



Greg Rodriguez (Stantec's Urban Places) discussing policy initiatives that cities like Buffalo can implement to hasten the advent of mobility innovations like low speed automated vehicle shuttles that operate in mixed traffic.

## 2 YEARS

- Implement version 1.0 of Smart Mobility Ordinance.
- Establish data governance framework and use policy that promotes data sharing while also considering privacy, data security, and public transparency. Framework should be based on identified use cases for data by Data Governance Task Force.
- Establish Lower Main Street as a new mobility and equity innovation zone.
- Continue to invest in and expand Buffalo Strategic Development Fund.
- Continue meetings of mobility and equity innovation zone Task Force to receive updates, oversee collection of data from demonstration projects, and focus coordination across agencies for approvals, presentations, and reporting.
- Incorporate workforce readiness, education, and training programs into the mobility and equity innovation zone.
- Perform traffic analysis to support creation of east-west and north-south smart mobility spines and review circulation and potential for converting one-way pairs to two-way.
- Create new benchmark for Universal Design. Working with the University at Buffalo's Center for Inclusive Design and Environmental Access the mobility and equity innovation zone will become a pilot zone and testbed for best practices in Universal Design.
- Continue to engage in public outreach and education around vision for mobility and equity innovation zone.
- Complete strategy that aligns with smart mobility principles and barriers identified through code harmonization audit, including plan for seeking any necessary exemptions from existing State regulations to incubate new innovative solutions .
- Commission study to use data from mobility and equity innovation zone incubator to recommend updates to Smart Mobility Ordinance and to develop plan for scaling up proven concepts from mobility and equity innovation zone throughout City, including policy, regulatory, infrastructure, zoning, and funding strategies.
- Engage in outreach and communication with State policy makers around success of exemptions granted and lessons learned to inform potential modifications to existing laws and regulations to promote broader deployments and scaling up of successful solutions, including policy, governance, and technology.
- Ensure appropriate resources are budgeted to support the safe and responsible use of data.

## 5 YEARS

- Implement next versions of Smart Mobility Ordinance based on completed study.
- Create a mobility and equity innovation zone Urban Design Framework. Develop a plan that integrates the mobility and equity innovation zone's core mobility, land use and density, public realm, urban design, public-private partnerships, and infrastructure dimensions to ensure that the district captures the promise of fully synergistic redevelopment.
- Deploy proven mobility and equity innovation zone concepts to other parts of City based on recommendations of study and receiving any necessary state approvals.
- "Digitize" the curb and implement new curb management policy to maximize uses, prioritize access, and ensure revenue.
- Complete infrastructure assessment with considerations around electric and connected vehicle infrastructure to support new mobility solutions.
- Continue to use data gathered from mobility and equity innovation zone demonstration projects to recommend legislative updates and new partnership models.
- Work with regional agencies to establish Mobility Data Management Center to assist with long-range transportation planning through data analytics using data governance policy based on existing regulations and best practices.
- Continue to engage in public outreach and education around findings from mobility and equity innovation zone.
- Continue to update data governance framework and use policy to ensure compliance with laws and regulations, and best practices.

## CNU member participants:

Frank Armento, *Fisher Associates*

Glenn Barr, *Better Neighborhood Inc.*

Andrew Bata, *International Association of Public Transport*

Matthew Bowling, *Wendel Companies*

Bill Bronrott, *Bronrott Communications*

Julie Chizmas, *City of Nashua, NH*

Andrew Clum, *Urban3*

Douglas Funke, *Citizens for Regional Transit*

Linda Gellman, *Elmwood Green Code Alliance*

Michael Godfrey, *Fisher Associates*

Phil Habestro, *Wellness Institute of Greater Buffalo*

James Jones, *Mode Choice Engineering*

Donald Naetzker, *SWBR*

William Price, *SWBR*

William Tuyn, *Forbes Capretto Homes*

Aaron Zimmerman, *District Department of Transportation*

**Thank you!** to all who participated, offered insights, and provided feedback during the workshop's public meetings. This was an inspiring effort focused on coordination, collaboration, and information sharing.