BUFFALO RIVER CORRIDOR
Brownfield Opportunity Area

Step 2 Nomination Document

CITY OF BUFFALO

Byron W. Brown, Mayor

Elizabeth A. Ball, Deputy Mayor

OFFICE OF STRATEGIC PLANNING

Brendan R. Mehaffy, Executive Director

CONSULTANT TEAM

Fisher Associates

Bergmann Associates

Camiros

Pan American

RKG

Urban Design Project

Urban Strategies

Watts Architecture & Engineering

October 2015

BUFFALO greencode

TABLE OF CONTENTS

This document was prepared for the **City of Buffalo** under the Brownfield Opportunity Areas Program. The **New York State Department of State** provided financial support and technical assistance; and the **New York State Department of Environmental Conservation** provided additional technical assistance.

1 OVERVIEW

1.1 Project Description

In 2011, the City of Buffalo was awarded funding from the New York State Department of State to establish the Buffalo River Corridor Brownfield Opportunity Area. This funding allows recipients to plan for the revitalization of underutilized, vacant, and brownfield sites by establishing a vision for their redevelopment, and strategies to return the sites to productive use.

The Buffalo River Corridor BOA covers 1,050 acres – over 1.5 square miles – to the southeast of downtown. It contains a large number of brownfields and abandoned parcels; a legacy from the industries that were once located along the Buffalo River.

Redevelopment of this area will be based on its strategic location, which includes highways and rail lines that connect to destinations in both the United States and Canada, as well as access to the Buffalo River and Lake Erie. Ongoing efforts to restore waterfront lands and improve public amenities have already increased interest in the area and created opportunities for developments that match the needs of the community.

The Buffalo River Corridor BOA builds on the adjacent South Buffalo BOA, and represents a natural progression of this effort by taking into account the impact of industries located along the Buffalo River. As brownfield sites are remediated and returned to productive use in South Buffalo, additional shovel-ready land will be needed to continue accommodating development.

This BOA is being evaluated as part of a Generic Environmental Impact Statement that will review the impacts of adopting three Step 2 BOAs (Buffalo Harbor, Buffalo River Corridor, and Tonawanda Street Corridor), a Step 3 BOA (South Buffalo), the Local Waterfront Revitalization Plan, changes to existing Urban Renewal Plans, and an updated Land Use Plan and Unified Development Ordinance.

The Common Council was declared lead agency, and a Positive Declaration and draft scope of work prepared. The GEIS will be submitted to the Common Council for review and approval, and a public comment period will take place prior to adoption.

1.2 Vision, Goals, and Objectives

The BOA process seeks to initiate, prioritize, and guide land remediation and redevelopment by identifying economic, social, and cultural opportunities. A vision for the future must be guided with broad-based community, municipal, and state support; and solidly grounded in current and emerging challenges, initiatives, and opportunities.

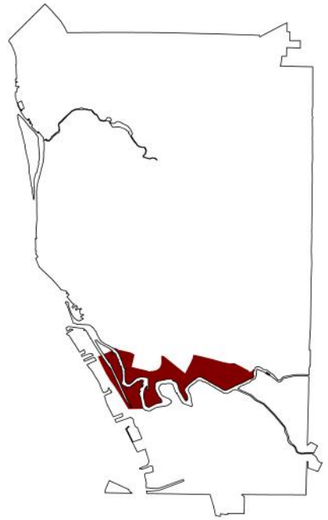
The long-term goal is to pursue both environmental enhancement and sustainable development by creating a plan designed by stakeholders, including area residents, businesses, environmental advocates, and government. Consensus building began at project inception, by ensuring that the various concerns and goals were discussed in an open fashion. Community contributions and acceptance are vital to the success of any redevelopment plan.

Planning is essential to ensure that future development does not compromise the health of the river. The need to generate employment opportunities and tax revenues must be balanced with strengthening neighborhoods, expanding recreational opportunities, preserving industrial heritage, ensuring waterfront access, and improving habitats and watershed ecology.

1.3 Boundaries

The boundaries were selected to include industrial areas located along the Buffalo River. Major industrial parcels—both active and inactive—include Kelly Island, Silo City, Elk Street, and the Katherine Street Peninsula. The mixed-use neighborhoods surrounding these employment centers were included so that residents most affected by the recent transitions would have a voice in future land use decisions. These areas include the Old First Ward, Seneca-Babcock, and Valley neighborhoods.

The western boundary is the terminus of the City Ship Canal and Kelly Island; the northern boundary includes residential areas, a rail corridor, and the New York State Thruway; the eastern boundary roughly coincides with the end of the navigable portion of the Buffalo River; and the southern boundary traces the Buffalo River, adjacent to the South Buffalo BOA.



1.4 Community Participation

A community participation plan was designed to enable input at a variety of levels and stages during the development of the Nomination Document. The plan was organized around project tasks to provide timely inputs to deliverables. A range of opportunities for community involvement were identified, from public open houses to small stakeholder sessions. The project website also provided opportunities for interested parties to submit comments.

The consultation process employed numerous outreach methods to ensure robust public and private participation. The design and production of accessible materials, and the provision of multiple opportunities for feedback were seen as essential to a successful communication strategy.

Several different audiences were engaged during the planning process. In order to effectively communicate with each group, contact lists were developed and updated with names, addresses, phone numbers, and e-mail addresses. These lists included residents, block clubs, non-profits and community groups; advocacy organizations, educational institutions, businesses and developers; county, state, and federal agencies; city departments and boards; elected officials; and steering committee members. Opportunities for community participation included:

Stakeholder Sessions

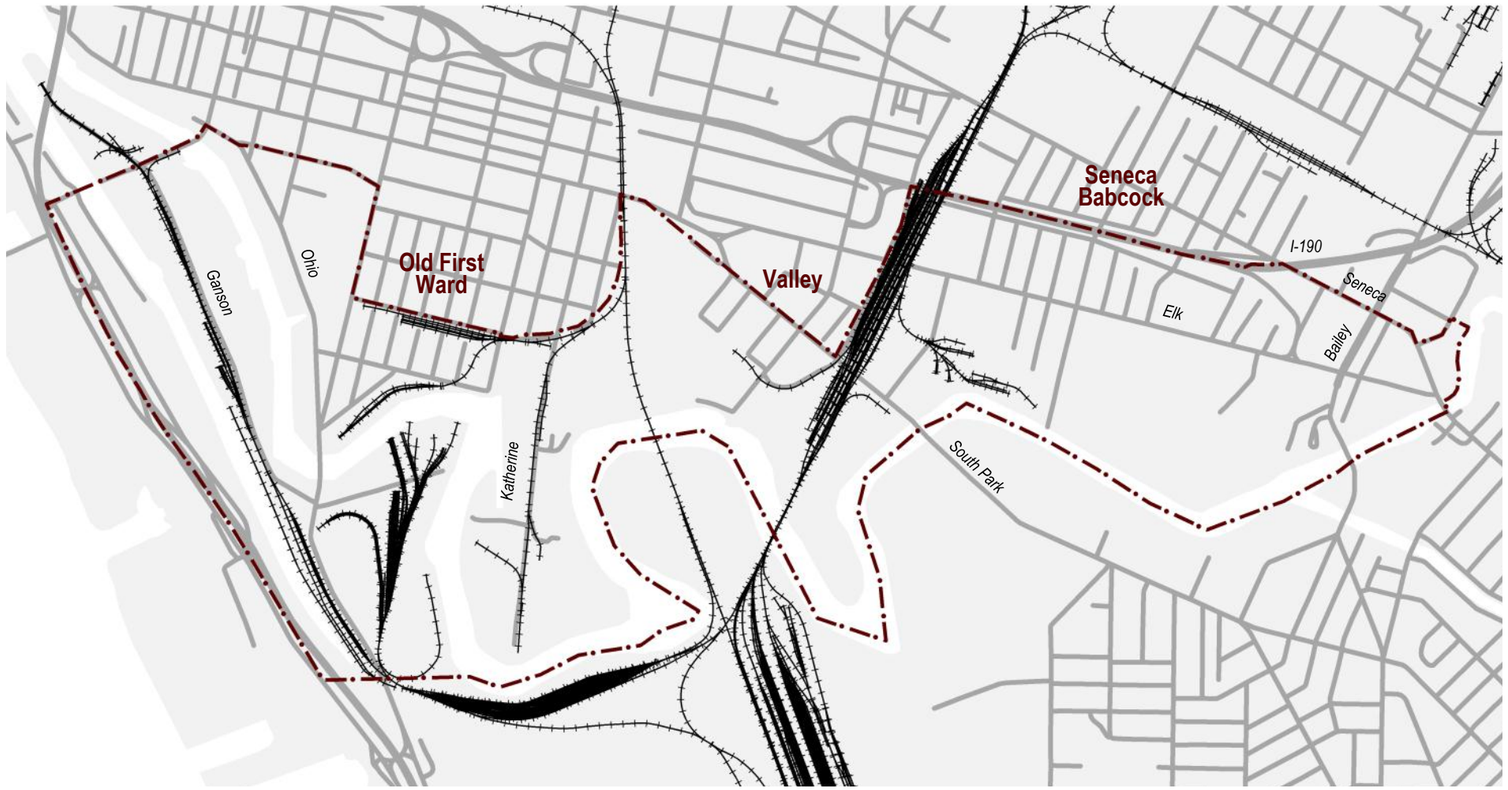
A series of stakeholder sessions were held in November 2011 and January 2012, to assist the consultant team in understanding the dynamics of the study area. These sessions included developers and investors, businesses and large landholders, non-profits and community-based organizations, regulatory agencies, and city departments that serve the community.

These early consultations were designed to:

- Inform stakeholders about the study process and objectives;
- Discuss issues and opportunities, along with policy and development concerns; and
- Identify potential projects and initiatives that would benefit the community.

A “Business Breakfast” was also held in June 2012, to provide business owners and developers with an opportunity to more openly discuss their objectives outside of a public forum.

Map 1.1 Boundaries



Steering Committee Meetings

A 20-member steering committee was appointed to review material prepared by the consultant team, provide input regarding project direction, and serve as liaisons to the larger community. Members included representatives from local businesses, developers, community-based organizations and other non-profits, institutions, and the general public. Staff from agencies providing project support were also invited to attend steering committee meetings. A total of five meetings were held during the course of the Step 2 process:

- **December 2011** – the initial meeting introduced the project team; provided overviews of the BOA program and study process; and included breakout sessions to allow participants to brainstorm key issues, challenges, opportunities, and goals and aspirations.
- **January 2012** – the second meeting reviewed consultant analysis and findings to date; introduced the visioning process that would be employed at the first open house; and included breakout sessions to discuss types of desired uses and locations, infrastructure needs, and phasing of proposed improvements.
- **June 2012** – the third meeting reviewed and discussed three alternative scenarios for future development.
- **February 2014** – the fourth meeting reviewed the draft Nomination Document and initial strategic sites, discussed concerns, and proposed changes.

Open Houses

A total of four open houses were held over the course of the planning process to share information with the public and solicit comments and feedback:

- **January 2012** – the first open house introduced the project objectives, provided an overview of the analysis conducted to date, and then broke out into visioning sessions to allow participants to discuss emerging principles and their vision for the BOA over the next two decades.
- **June 2012** – the second open house started with a brief review of the community input from the prior meeting, discussed the economic analysis for the BOA, and laid out a set of emerging principles to guide redevelopment. The consultants provided workbooks outlining the three alternative development scenarios, and asked participants to mark these up with their thoughts and comments. The meeting concluded with a facilitated discussion on initial reactions to the alternative scenarios.
- **April 2014** – the third open house provided the community with a brief recap of project status, and reviewed the key findings of the draft Nomination Document. The consultants identified the strategic sites that are being proposed, and accepted input on their redevelopment potential.

2 ANALYSIS

2.1 Community and Regional Setting

Buffalo is the regional center of Western New York, which consists of Erie, Niagara, Orleans, Genesee, Wyoming, Allegany, Cattaraugus, and Chautauqua counties. Erie and Niagara are the most urbanized, and together form the Buffalo-Niagara Falls Metropolitan Statistical Area.

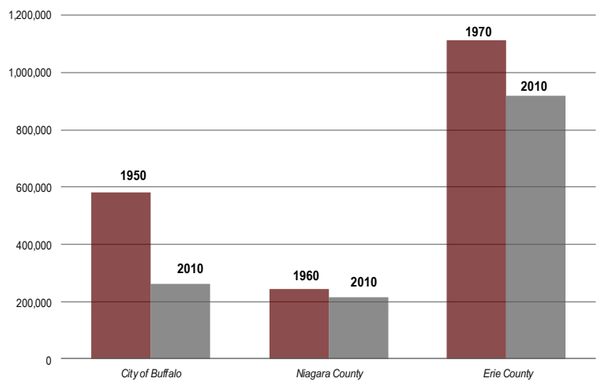
The regional setting reflects long-term trends in Erie and Niagara counties. Buffalo's population peaked in 1950, and had fallen 55 percent by 2010; Niagara County peaked in 1960, and had fallen 11 percent by 2010; while Erie County peaked in 1970, and had fallen 17 percent by 2010. [Figure 2.1]

These declines reflect the lack of economic growth in Western New York over the past 60 years. The region was historically dependent on manufacturing and trade for its job base. Manufacturing underwent a major restructuring in the second half of the 20th century, which led to industrial facilities relocating from the Northeast and Midwest to the West and South, and later overseas. Population growth mirrored these trends, which also had a significant impact on the region's role as a shipping hub, as markets shifted further away from Western New York.

Beyond the impacts of manufacturing decline, cities were also beginning to experience the effects of suburbanization. The rise of bedroom communities in the 1950s initiated a massive shift in population. Yet Buffalo remains the regional center in terms of government, finance, medicine, education, and the arts; providing the city with a strong foundation for future growth.

The region's transition from manufacturing to a service-based economy has been slow, but is now firmly underway. The University of Buffalo is a major research institution that advances the technological capabilities of the region. The training offered by UB and other higher education providers represents a significant resource; while the Buffalo Niagara Medical Campus reinforces Buffalo's position as a center for biomedical technology to drive the region's growth in the service-based economy.

Figure 2.1 Population change



Western New York also benefits from its relationship with Toronto and Southern Ontario, which offers significant opportunities for development on both sides of the border. Increasing international trade and cross-border relationships have been a long-term trend. Initially spurred by the North American Free Trade Agreement, the region has become a portal for Canadian businesses seeking to access US markets.

Economic activity resulting from bi-national trade is expected to be a continuing source of regional growth. As Canadian firms seek greater operational efficiencies and access to the larger US market, more facilities and jobs will be located on this side of the border, with Buffalo positioned to capture a significant portion of this investment.

The goal is to turn Western New York into a place where people choose to live, rather than leave. In the industrial economy, locational decisions were based on factors such as access to raw materials, proximity to markets, and the cost of transporting goods. Today, employment flows to places with workforce synergies and a high quality of life. Where people want to live plays an increasing role in regional success.

Quality of life is a broad, somewhat abstract concept that includes economic opportunities, cost of living, education, public safety, housing options, environmental health, arts and culture, and recreation. No single place can excel in all areas; but the purpose of all efforts must be to enhance the quality of life within the city and region.

Opportunities

- Use the area's **skilled workforce** and **higher education** institutions to provide the capacity for renewed economic growth.
- Build on **cultural diversity** by welcoming and integrating the growing numbers of immigrants and refugees into the economic and social networks.
- Leverage the **tourism** focused on Niagara Falls with complementary assets such as architecture, industrial heritage, arts and music, food and beverage, sports and recreation, and fishing and hunting.
- Take advantage of excess **transportation** capacity while restructuring the existing system to become more multi-modal and responsive to urban form.
- Enhance the city's unique **urban form**, dictated by the confluence of Lake Erie with the Niagara and Buffalo rivers, and guided by the subsequent efforts of Joseph Ellicott and Frederick Law Olmsted.
- Maximize **natural resources** by making recreation and natural beauty part of the regional lifestyle, and by restoring ecosystem function and resilience.
- Emphasize **history and heritage** to enhance a sense of place and increase regional appeal.

Challenges

- **Economic diversification** is well underway, but needs to be accelerated to achieve net growth.
- Disinvestment has outpaced private sector investment in recent decades. **Barriers to investment** must be overcome to address issues such as legacy industrial and commercial contamination.
- The region suffers from both misconceptions and real concerns regarding quality of life. Positive demonstrations are needed to **enhance the image** of the city and region.
- The economic restructuring of the region will require a **physical restructuring**, including new land use patterns, revitalized neighborhoods, and updated transportation systems.
- Without sacrificing its heritage, the region must **address obsolescence** and upgrade its housing, transportation, and community facilities; and employ best practices and state-of-the-art urban design for ensuring ecosystem prosperity.

2.2 Community and Regional Trends

Demographic, employment, and real estate trends all impact the potential for future redevelopment. There are a number of options that could reasonably be considered for the BOA, yet most market and economic indicators are still relatively weak, both within the city and the region. Therefore, the rate of new development for any selected use should be expected to unfold over a period of years. Low demand for residential and non-residential land uses also suggests that subsidies and incentives may be required to attract developers and investors, at least in the near term.

Demographic Trends

Population and household growth within the region have been constrained over the past few decades by a general lack of economic opportunities. Recent population changes between 2000 and 2014 reflect overall net losses at both the city and county levels; although estimates since 2010 indicate that the county has grown by roughly 4,100 persons, while the city's rate of decline has slowed considerably, with a loss of just 2,500 residents over the past four years. As with population, the city experienced a loss of 12,600 households between 2000 and 2014; although the rate of decline has also been slowing recently. [Figure 2.2]

The county's median age of 40.8 is well above the city's median of 32.7. Although the city had 28 percent of the total county population in 2014, this was not evenly distributed among age groups. [Figure 2.3] The city had 33 percent of all persons under age 24, and 32 percent of those between 25 and 44. But as persons age, they are more likely to live in the suburbs, as just 23 percent of those 45 to 64, and less than 22 percent of those over 65 reside in the city.

The two largest age cohorts in the United States are Millennials (currently ages 15 to 35) and Baby Boomers (ages 51 to 69). The city has a unique opportunity to retain a greater share of Millennials as they reach the age when persons typically begin leaving cities for the suburbs; as well as the potential for drawing back empty nesters among Baby Boomers looking to downsize.

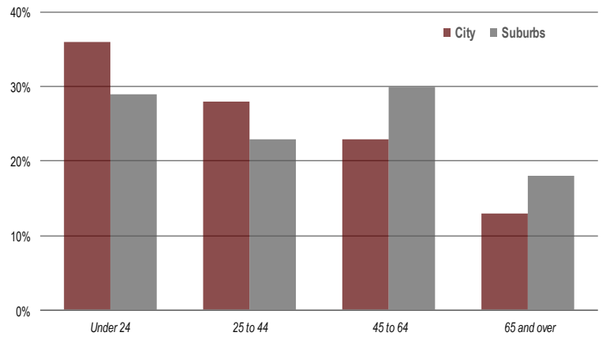
When adjusted for inflation, median household income in Erie County declined by 5.4 percent between 2000 and 2014, going from $53,400 to $50,500. There are various factors contributing to this, including a growing number of households being headed by retirees, as well as the continuing increase in one-person households, which therefore have just a single income. Median household incomes in the city also decreased between 2000 and 2014, from $35,100 to $32,100. Household incomes in the city have traditionally been below those of the county, and fell slightly from 66 to 64 percent of the countywide median during this period.

Figure 2.2 City of Buffalo demographic trends

	1950	*2000*	*2014*	*2014 County*
PERSONS	**580,100**	**292,600**	**258,700**	**922,800**
Density	14,100	7,200	6,500	890
White alone	94%	55%	47%	78%
Black alone	6%	37%	37%	13%
Other races	0%	8%	16%	9%
Latino	NA	8%	11%	5%
Foreign born	12%	4%	9%	7%
College grads	5%	18%	24%	32%
Poverty rate	NA	27%	31%	15%
Median income	$30,900	$35,100	$32,100	$50,500
HOUSING UNITS	**166,700**	**145,600**	**131,600**	**421,200**
Occupied	164,700	122,700	110,100	383,700
Household size	3.5	2.4	2.2	2.2
For sale	<1%	6%	4%	2%
For rent	<1%	14%	7%	6%
Vacant	1%	7%	11%	6%
Homeowners	44%	44%	40%	65%
Median value	NA	$84,900	$70,400	$132,700

Source: US Census Bureau

Figure 2.3 Age distribution in 2014



Employment Trends

Total employment in Erie County rose by over 13,000 between 2000 and 2014, from 431,180 to 444,470. [Figure 2.4] Private sector jobs represented about 80 percent of the 2014 total. The region has seen this number increase by 5.5 percent since 2000, while government employment has declined by 3.7 percent. The largest number of employees work in education and health care, retail trade, manufacturing, and accommodations and food services; with professional services and management, and finance, insurance, and real estate also accounting for a significant number of jobs.

Like many regions across the country, the manufacturing sector recorded the greatest losses since 2000, with a decline of over 15,000 jobs. These losses are projected to continue, although efforts to promote advanced manufacturing are designed to slow this trend. While the overall losses were not as great, wholesale trade declined 41 percent (7,700 jobs) and information declined 29 percent (2,900 jobs). On the other side of the ledger, education and health care gained 15,000 jobs, accommodations and food service grew by almost 11,000, and finance, insurance, and real estate were up over 6,000.

Figure 2.4 Erie County employment trends

	2000		*2014*		*Change*	
CLASSIFICATION	**431,180**		**444,470**		**13,290**	**3%**
Private	335,580	78%	354,190	80%	18,610	6%
Government	75,170	17%	72,380	16%	(2,790)	-4%
Self-employed / family	20,430	5%	17,900	4%	(2,530)	-12%
SECTOR	**431,180**		**444,470**			
Education and health care	110,320	26%	125,470	28%	15,150	14%
Retail trade	50,930	12%	54,780	12%	3,850	8%
Manufacturing	62,250	14%	46,680	11%	(15,570)	-25%
Accommodation and food service	32,340	8%	43,080	10%	10,740	33%
Professional and management	34,660	8%	41,100	9%	6,440	19%
Finance, insurance, real estate	28,690	7%	34,970	8%	6,280	22%
All other	111,990	26%	98,390	22%	(13,600)	-12%
OCCUPATION	**431,180**		**444,470**			
Management and business	149,730	35%	170,530	38%	20,800	14%
Sales and office	121,260	28%	111,640	25%	(9,620)	-8%
Service	67,290	16%	82,050	18%	14,760	22%
Production and transportation	62,790	15%	51,020	11%	(11,770)	-19%
Construction and maintenance	30,110	7%	29,230	7%	(880)	-3%

Source: US Census Bureau

Similar to the gains and losses among sectors, the number of persons employed in production and transportation occupations declined by more than 11,000, while employment in management, business, and science occupations rose by 20,800, and service occupations increased by almost 15,000. Employment growth in sectors with significant shares of lower wage workers, such as health care, accommodations, and food service, coupled with ongoing losses in higher-paying manufacturing jobs, have also contributed to the decline in median household income.

With respect to the city, total employment dropped by 3,910 between 2000 and 2014, from 114,060 to 110,150. [Figure 2.5] This reflects a loss of over 4,800 government positions, which was only partially offset by a gain of 2,000 private sector jobs.

The largest employment sectors in the city are similar to those in the county as a whole, although losses in manufacturing were more severe (down 38 percent), and gains in accommodation and food service more robust (up 44 percent).

Given the decline in manufacturing, the loss among production and transportation occupations outpaced that of the county, falling by 25 percent between 2000 and 2014. Sales and office occupations also fell; although management, business, and science rose by 8 percent, and service occupations were up 14 percent.

Figure 2.5 City of Buffalo employment trends

	2000		*2014*		*Change*	
CLASSIFICATION	**114,060**		**110,150**		**(3,910)**	**-3%**
Private	87,400	77%	89,410	81%	2,010	2%
Government	22,180	19%	17,370	16%	(4,810)	-22%
Self-employed / family	4,480	4%	3,370	3%	(1,110)	-25%
SECTOR	**114,060**		**110,150**			
Education and health care	32,380	28%	33,480	30%	1,100	3%
Retail trade	12,170	11%	12,710	12%	540	4%
Manufacturing	14,910	13%	9,210	8%	(5,700)	-38%
Accommodation and food service	9,490	8%	13,700	12%	4,210	44%
Professional and management	9,770	9%	10,600	10%	830	8%
Finance, insurance, real estate	6,510	6%	6,720	6%	210	3%
All other	28,830	25%	23,730	22%	(5,100)	-18%
OCCUPATION	**114,060**		**110,150**			
Management and business	33,290	29%	35,920	33%	2,630	8%
Sales and office	30,770	27%	26,200	24%	(4,570)	-15%
Service	24,050	21%	27,410	25%	3,360	14%
Production and transportation	19,560	17%	14,660	13%	(4,900)	-25%
Construction and maintenance	6,390	6%	5,960	5%	(430)	-7%

Source: US Census Bureau

Stagnant population growth and an aging workforce represent economic development challenges, since these will force businesses to be more aggressive in attracting workers. This suggests that efforts to retrain the existing workforce to support shifts into new and emerging industry sectors as part of on-going economic diversification planning will be required.

Employment sectors that offer the best potential for growth include producer services, information technology, biomedical, industrial machinery and services, food and materials processing and distribution, back office and outsourcing, and travel and tourism.

- Professional and technology establishments are potential users of business parks, particularly if relationships can be established with area research centers to help support growth in these sectors. These firms require both office space and specialized flex-building space for research and development activities. High-speed internet linkages are critical, and electric demand may also be high.
- Biomedical includes the manufacturing sector producing pharmaceutical, nutraceutical, and cosmeceutical products; research and development of physical, engineering, and life sciences; as well as medical equipment development and manufacturing. New or expanding firms in this cluster will most likely want to locate near research centers and existing campuses.
- Industrial machinery has been a mainstay of the region's manufacturing base, but national trends suggest that this cluster is not expected to be a source of significant future employment growth. However, the labor force from this cluster provides an asset for diversifying the sector towards advanced manufacturing with industries that produce high technology goods or use advanced technologies to produce goods, such as SolarCity.
- Processing and distribution represent several industry sectors that combine to offer a dynamic relationship between processing facilities and the distribution network. These rank relatively low in terms of regional employment, but offer growth potential based on national trends. Sustaining and expanding these clusters will depend on a number of factors, one of which is a strong and integrated distribution network. Buffalo is well-located to become more of a logistics hub due to its access to rail, water, road, and air transportation systems. Increases in energy costs are fostering a resurgence of rail as a means of moving goods over long distances. The region occupies a strategic position on an international border, with the potential for developing logistics facilities.
- Back office and outsourcing includes telephone answering centers, telemarketing, and credit bureau operations. These uses could be readily integrated into a professional office park or within renovated commercial or industrial buildings. These types of jobs do not generally require a high skill level, so could potentially draw from the large number of service sector employees in the area.
- Travel and tourism is the third largest source of employment in the region. This cluster is one of the most diverse, encompassing accommodations; cultural, recreational, and amusement facilities; food service facilities; passenger transportation services; and travel-related retail sales.

Real Estate Trends

Based on data provided by CBRE, the **industrial market** in Erie and Niagara counties included an inventory of 64.7 million square feet in 2014. [Figure 2.6] Manufacturing uses occupied half of this inventory, with warehouses accounting for another 36 percent and flex space the remaining 14 percent. For 2014, net absorption totalled just over 900,000 sf. This led to a decline in the overall vacancy rate from 5.7 at the end of 2013 to 4.5 percent, which represents the lowest rate since 2005. The current vacancy rate among industrial buildings is less than half the national rate of 10.6 percent, which is the tenth consecutive year that the national market has been outperformed locally.

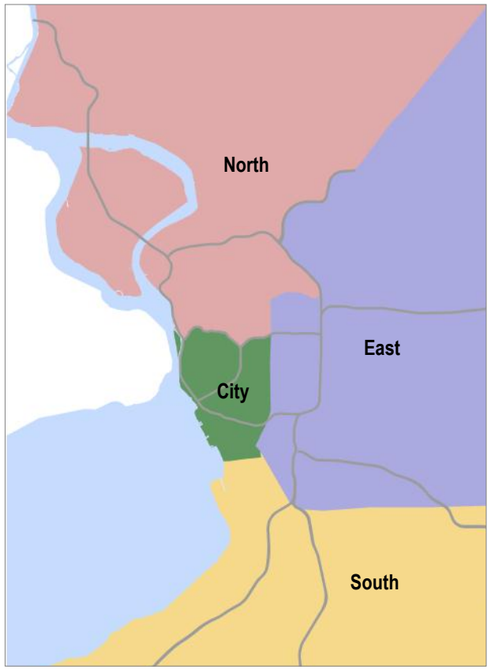
Just 88,000 sf of new industrial space was added in 2014, which is well below the average of 240,000 sf that has been added annually since 2000. The lack of new construction has had positive impacts, however, as tenants have been absorbing older, existing industrial space. The addition of 1.2 msf of space when Solar City is completed in 2016 will have a significant impact on the industrial inventory.

Only 14 percent of the region's industrial inventory consists of owner-occupied buildings, indicating that supply is primarily driven by developers. As a result, new

Figure 2.6 Industrial market; 2014 Q4

	Inventory	*Available*	*Vacancy*
TOTAL	**64,694,000**	**2,893,000**	**4.5%**
Flex	8,840,000	729,000	8%
Manufacturing	32,558,000	1,173,000	4%
Warehouse	23,296,000	991,000	4%
City	**12,080,000**	**361,000**	**3.0%**
Flex	523,000	0	0%
Manufacturing	7,755,000	262,000	3%
Warehouse	3,802,000	99,000	3%
North	**18,690,000**	**847,000**	**4.5%**
Flex	2,921,000	363,000	12%
Manufacturing	10,383,000	260,000	3%
Warehouse	5,386,000	224,000	4%
East	**23,546,000**	**1,202,000**	**5.1%**
Flex	3,713,000	285,000	8%
Manufacturing	7,503,000	504,000	7%
Warehouse	12,330,000	413,000	3%
South	**10,375,000**	**484,000**	**4.7%**
Flex	1,682,000	81,000	5%
Manufacturing	6,916,000	148,000	2%
Warehouse	1,777,000	255,000	14%

Source: CBRE



construction will likely require pre-leasing or financial incentives, since speculative development will be limited due to slow projected employment growth over the near-term.

The city submarket, which encompasses the areas within the Scajaquada and Kensington Expressways, contains 12.1 msf of industrial space, and had a 2014 vacancy rate of 3.0 percent, down from 6.3 percent in 2013. Over 400,000 sf was absorbed during the past year, leaving just over 360,000 sf available.

The land supply in Buffalo and the region is presumed to be adequate to support demand for new industrial construction. However, much of this land is not in premier locations, and will need upgraded infrastructure as well as financial incentives to compete with more marketable, shovel-ready locations such as Buffalo Lakeside Commerce Park.

Based on employment projections and targeted sectors, flex buildings and other small-scale spaces appear to offer reasonable industrial development potential. These types of facilities can be planned and developed incrementally, allowing the building supply to grow as market demand dictates. The city currently has only six percent of the regional inventory of flex buildings, but no vacancies within this sector.

Industry growth projections and anticipated support from state and regional agencies for businesses in these clusters suggests that they could provide a viable component of future land use. Flex buildings are also more easily integrated into mixed-use business parks since they are less obtrusive than traditional manufacturing facilities.

The availability of rail access is also likely to be a positive factor for supporting new construction, as well as the re-use of any remaining manufacturing and warehousing facilities, if regional economic plans to promote food and materials processing and multi-modal distribution facilities continue to receive support and incentives.

Figure 2.7 Office market; 2014 Q4

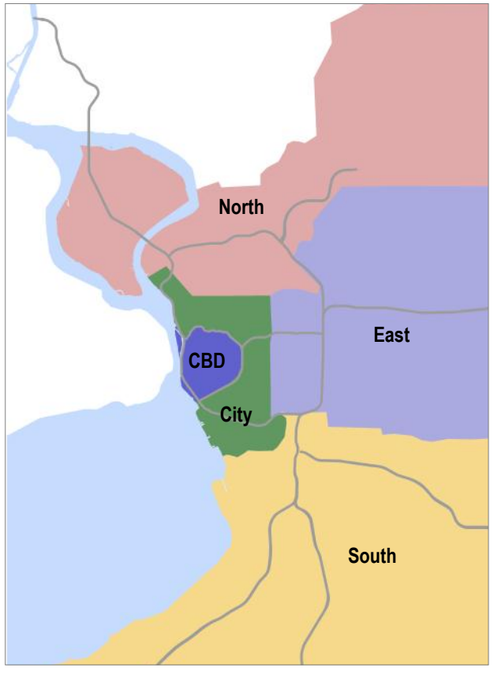
	Inventory	*Available*	*Vacancy*
TOTAL	**26,951,000**	**3,766,000**	**14.0%**
Class A	8,473,000	1,414,000	17%
Class B	12,794,000	1,685,000	13%
Flex	5,684,000	667,000	12%
CBD	**9,129,000**	**1,713,000**	**18.8%**
Class A	4,408,000	963,000	22%
Class B	4,569,000	750,000	16%
Flex	152,000	0	0%
City	**2,624,000**	**352,000**	**13.4%**
Class A	797,000	0	0%
Class B	1,044,000	230,000	22%
Flex	783,000	122,000	16%
North	**8,279,000**	**985,000**	**11.9%**
Class A	2,117,000	404,000	19%
Class B	3,356,000	308,000	9%
Flex	2,806,000	273,000	10%
East	**5,001,000**	**459,000**	**9.2%**
Class A	809,000	18,000	2%
Class B	2,581,000	224,000	9%
Flex	1,611,000	217,000	13%
South	**1,919,000**	**257,000**	**13.4%**
Class A	342,000	29,000	8%
Class B	1,245,000	172,000	14%
Flex	332,000	56,000	17%

Source: CBRE

The regional **office market** had an inventory of approximately 27 million square feet in 2014, with almost half in Class B, 31 percent in Class A, and 21 percent in Flex. [Figure 2.7] Over the past several years the regional office market has been relatively stable from a vacancy perspective. The overall vacancy rate for all classes (A, B, and Flex) rose from 13.6 percent in 2013 to 14.0 percent in 2014. This places it in line with the national vacancy rate of 13.9 percent, which is its lowest level since 2008.

The city's office inventory includes almost 11.8 msf, or 44 percent of the regional supply. Over three-quarters of the city's inventory is located in the Central Business District, with over 9.1 msf. The CBD had a vacancy rate of 18.8 percent in 2014, which is an increase over prior years. Much of this can be attributed to One Seneca Tower, which currently has almost 900,000 sf of unleased space on the market, constituting over 90 percent of the city's available Class A space.

The overall quality of downtown office space is improving through both new construction and redevelopment activity. Recently completed and ongoing projects at One Canalside, Catholic Health, Compass East, Conventus, and 250 Delaware indicate continued faith in this market.



The rest of the city outside the CBD performed well, with vacancies dropping from 16.0 percent at the end of 2013 to 13.4 percent in 2014. New projects in pockets such as the Larkin District have also led to an increase in rental rates. Suburban markets remain stable, with an overall vacancy rate of 11.2 percent, compared to a national rate of 15.5 percent in suburban locations. However, it's been reported that some long-time tenants have begun to look at downtown as a feasible relocation option as leases expire.

While this market remains relatively strong, demand for new construction will be limited over the next few years. Based on recent absorption levels, the CBD has a 10 to 12 year supply of available space, and continued renovation of the existing inventory into higher quality space may lessen demand for new construction. Vacancy in the remainder of the city is currently 350,000 sf, but this predominantly Class B inventory will need to continue to offer competitive lease rates in order to sustain occupancy levels.

Given these market conditions, the demand for conventional office buildings is expected to be relatively modest. Competition for office development would come from existing and future development in the city's Larkin District which is successfully attracting office and mixed-use projects.

The regional **retail market** had an inventory totaling approximately 26.6 million square feet in 2014. [Figure 2.8] This includes freestanding stores, shopping centers, and malls. The overall vacancy rate across all these facilities was 10.2 percent, which represents the lowest rate since 2000, and is below the national average of 11.5 percent. Across the region, net absorption over the past year increased by over 360,000 sf.

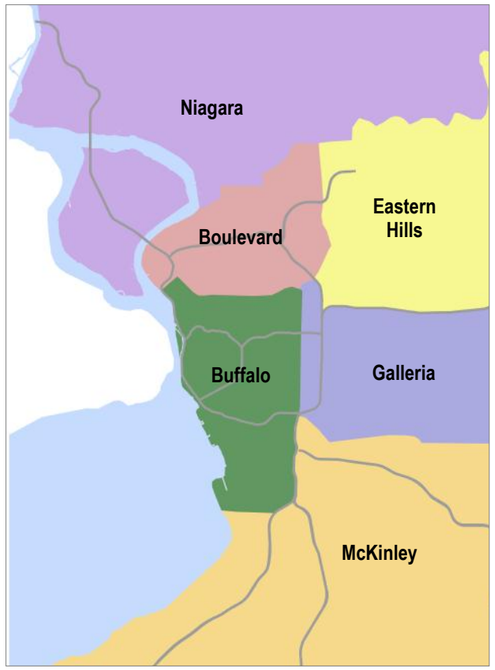
In contrast to industrial and office markets, the city contains less than 10 percent of the regional retail inventory. Retail in the city underperformed the rest of the region, with a vacancy rate of 16.4 percent, compared to 9.5 percent in suburban Erie County, and 11.0 percent in Niagara County. On the positive side, the Elmwood and Hertel shopping districts continued to do well, HarborCenter and One Canalside are bringing new retail to the city, and traditional retailers have begun joining bars and restaurants in expressing interest in the CBD.

However, the beneficial impacts of Canadian shoppers on local retail faces uncertainty. Some retailers around the

Figure 2.8 Retail market; 2014 Q4

	Inventory	*Available*	*Vacancy*
TOTAL	**26,625,000**	**2,727,000**	**10.2%**
Buffalo	2,087,000	341,000	16%
Boulevard	5,497,000	540,000	10%
Eastern Hills	4,065,000	221,000	5%
Galleria	5,454,000	611,000	11%
McKinley	5,402,000	560,000	10%
Niagara	4,120,000	454,000	11%

Source: CBRE



Galleria Mall and in Niagara County report that up to 40 percent of sales are to Canadians, but the exchange rate for the Canadian dollar is currently at its lowest level since 2004. This is being reflected in a decrease in border crossings between 2014 and 2015 – down 5 percent at the Peace Bridge, 15 percent at the Rainbow Bridge, and 20 percent at the Whirlpool Bridge. If these shoppers decide to stay home, a significant portion of the regional retail market could be affected.

As a result, the demand for any sizeable square footage of additional retail is probably the most questionable among commercial uses. The CBD is the city's strongest retail area, but it appears as though demand there will remain moderate in the near term, with renovated space offering more opportunities than new construction.

Some retail nodes could potentially be added at locations with highway access. These would not be totally dependent on local households for support, especially if prior levels of Canadian shoppers can be recaptured. Any new retail facilities offering general merchandise would likely be created at the expense of existing businesses, since total retail demand is not expected to increase substantially given the low projected growth in regional population and employment.

The **residential market** has remained stable regionally, with the median value for owner-occupied housing in Erie County rising from $88,200 to $131,800 between 2000 and 2014. The average annual increase has been between 2 and 4 percent, with only a few years where growth either exceeded or fell below this rate. In constant 2015 dollars, countywide values increased by 2.1 percent, going from $126,200 in 2000 to $132,700 in 2014. This compares to a national increase of 6.6 percent during this 14-year period. [Figure 2.9]

Countywide appreciation has been affected by declining values in the city. Suburban housing values increased by 3.9 percent in constant 2015 dollars, going from $134,900 to $140,100; but city values fell from $84,900 to $70,400, representing a decline of 17.1 percent. There were wide variations among city neighborhoods, however. Median values ranged from a low of $24,200 to a high of $347,100 in 2013 (the most recent year that figures are available at the census tract level); and some areas appreciated by up to 65 percent between 2000 and 2013, while others declined by over 50 percent in constant 2015 dollars.

Rental housing represents almost 60 percent of the city's stock [Figure 2.2]. Among the almost 65,700 rental units that were on the market in 2014, 4,640 – or 7 percent – were being offered for rent or awaiting occupancy. While this is a bit higher than the 5 percent target that indicates a healthy balance between supply and demand (and much improved from the 14 percent figure in 2000), the citywide average again masks wide variations among neighborhoods. In some, apartment vacancies were under one percent in 2013; while in others the rate topped 10 percent, with a handful exceeding 20 percent.

The city issued building permits for 1,680 new housing units between 2000 and 2014, including 750 single-family and 930 multi-family units. [Figure 2.10] Yet Buffalo's building activity represented only 7 percent of the 22,740 permits issued in Erie County during this period, meaning that over 13 units went up in the suburbs for every one built in the city. Permit activity has also been steadily declining in both the city and suburbs. While the city permitted an average of 287 units annually during the late 1990s, that number has dropped to an average of 88 since 2010. [Figure 2.11]

Figure 2.9 Median housing values (in 2015 dollars)

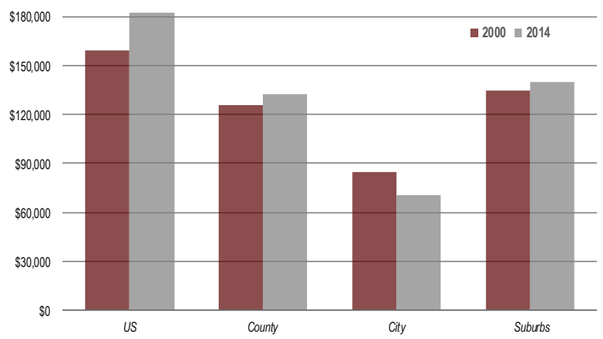


Figure 2.10 Erie County building permits issued

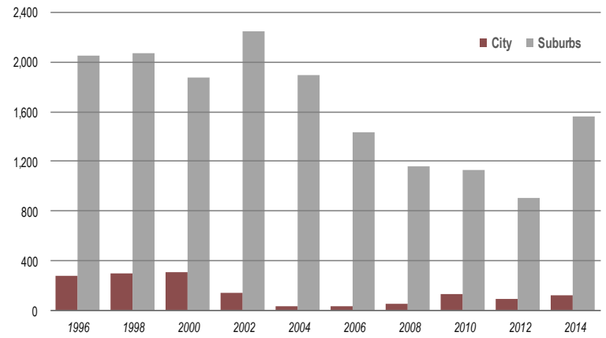


Figure 2.11 Building permits by decade

	City	*Suburbs*	*Ratio*
1996 to 2014	**149**	**1,624**	**11 to 1**
1990s	287	2,027	7 to 1
2000s	124	1,646	13 to 1
2010s	88	1,257	14 to 1

Source: US Census Bureau

Compensating for this lack of new construction has been a rise in the number of units created through the adaptive reuse of non-residential structures. It is estimated that over the past decade more than 800 new rental units have been completed, and another 200 are in the planning or construction stages.

Census data indicates that the city experienced a net loss of 14,000 housing units between 2000 and 2014, a decrease of almost 10 percent of its stock. [Figure 2.2] Despite the removal of these abandoned units, the number of vacant housing units that are not being marketed for sale or rent still climbed from 7 to 11 percent during this period. It is unlikely that the current balance of over 15,000 vacant units – some of which have been pulled from the market by owners who do not wish to rent at this time, others that have been abandoned – can be absorbed in a region that continues to add 1,500 new suburban units annually.

As a result, demand for new residential development in the city will continue to be moderate, and limited regional population growth is not expected to result in any marked impacts on this trend in the near-term. Given the anticipated population changes over the next few years – where growth will be concentrated in the near-retirement and retirement age groups, with only modest increases in younger households – potential regional demand is likely to be focused within the following niches:

Senior housing: An estimated 7,000 households will be entering this market segment countywide over the next 10 years. Projected increases in income levels for these age groups suggest that they may be able to afford somewhat higher housing costs if they choose to downsize into a retirement-oriented living facilities.

Rental housing: An estimated 2,000 households will be added in the 25 to 34 age group over the next five years. Although this does not represent a huge increase in demand, the city currently has a larger share of its population in these age groups, and could build on this base.

Luxury housing: Although a small share the city's housing market, high-end apartments and condominiums have met with success downtown and along the waterfront. Absorption is likely to remain slow, and may need to be part of a mixed-use development to attract private investment.

2.3 Buffalo River Corridor Trends

For this analysis, the BOA was extended to encompass the three neighborhoods that are located within or adjacent to its boundaries: Old First Ward, the Valley, and Seneca Babcock. [Map 2.1]

Like the city as a whole, the population of these neighborhoods peaked in 1950 and had declined by over 75 percent by 2000. [Figure 2.12] Between 2000 and 2013 (the most recent year for which neighborhood data is available) the population fell by another 14 percent, an even greater rate than the 11 percent decline citywide.

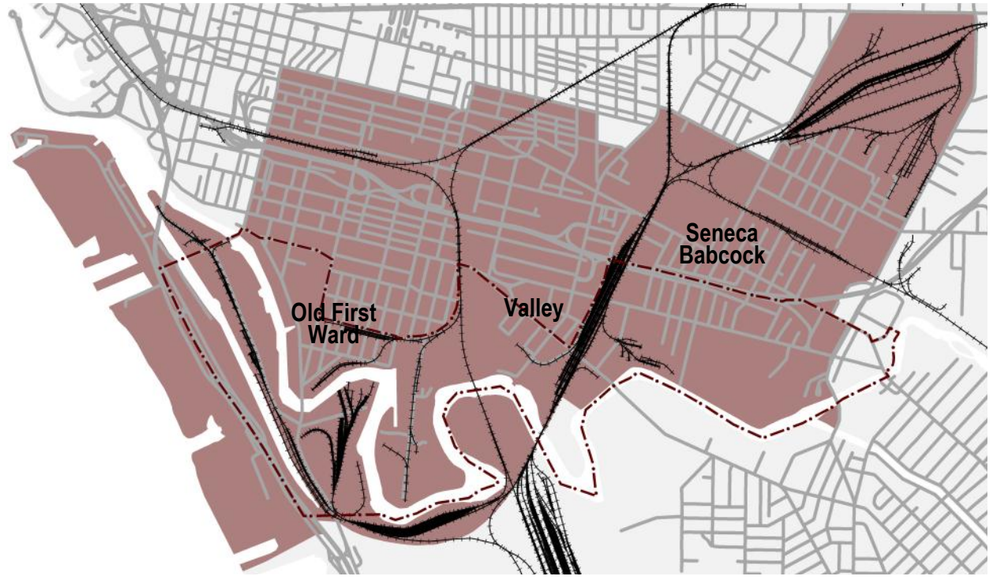
The number of households has also declined, but at a slightly lower rate than the population. This has resulted in a dramatic drop in average household size, which fell from 4.4 to 2.4 persons between 1950 and 2000. Household size has stabilized since 2000, which may be attributable to the increase in foreign-born residents (180 in 2000 and 400 in 2013), who are more likely to live in extended families.

Combined with this increase in foreign-born residents, the racial composition is also changing. In 1950, these neighborhoods were largely white, with just 12 percent of the population listed as either black or "other" race. The white share of the population had fallen to three-quarters of the total by 2000; and two-thirds in 2013. Blacks now make up over 20 percent of the population, and Latinos comprise another 12 percent.

Although educational attainment has improved over time, college graduation rates were well below citywide totals in 1950, 2000, and 2013. This is reflected in the median household income, which has been between 78 and 85 percent of the citywide median since 1950. On the plus side, in constant 2015 dollars, the median household income has actually increased by just under 5 percent over the past 60 years. The poverty rate increased from 28 to 31 percent during this period between 2000 and 2013, matching the citywide rate in both years.

The neighborhoods lost a total of 4,750 housing units since 1950, a decline of 53 percent that far exceeds the 33 percent loss citywide. Occupancy has also fallen over this period, leading to a rise in the number of vacant units. Like the rest of the city, these neighborhoods had virtually no vacancies in 1950. With little housing built during the Great Depression and World War II, the immediate post-war years saw tremendous pressures placed on the existing stock.

Map 2.1 BOA neighborhoods



Bursting at the seams and with little developable land available, Buffalo began witnessing a massive shift of its population to the surrounding suburbs, which were experiencing a building boom. Yet as the suburbs grew, many city neighborhoods began to face increasing abandonment as residents moved away but were not replaced. The number of vacant housing units in the city not being marketed for sale or rent climbed from just 1,200 in 1950 to almost 10,000 in 2000, and added another 2,000 units by 2014. Within these neighborhoods, the number of vacant units went from 134 in 1950 to 724 in 2013, as the vacancy rate rose from less than 1 percent to more than 17 percent.

The median value of owner-occupied housing has been well below the citywide median. In 2000 it was 37 percent lower, and by 2013 was less than half as much as the citywide median. And like housing values citywide, the median fell by 36 percent between 2000 and 2013 when measured in constant 2015 dollars, compared to a citywide loss of 17 percent.

Two-thirds of renters in these neighborhoods paid between $300 and $800 per month in 2013, with a median rent of $540. Given the low household incomes, however, almost half of all renters paid more than 30 percent of their income for housing; and 30 percent were paying over half of their income for rent. Just 160 households (or less than 10 percent of all renters) had a monthly rent of $1,000 or more, but this may change with the recent development of market-rate units along the Buffalo River.

Due to high vacancies and relatively low rents and values, no new residential construction was completed in these neighborhoods between 2000 and 2012; but a pair of mixed-use developments are now underway along the Ohio Street corridor.

A five-story building at 301 Ohio Street will house two restaurants, 10,000 square feet of commercial space, and 21 market-rate apartments; and Buffalo River Landing at the intersection of Ohio and South will feature 78 market-rate units on the footprint of the former Erie Freight House.

Figure 2.12 BOA demographic trends

	1950	*2000*	*2009/13*
PERSONS	**38,900**	**9,000**	**7,700**
Density	7,950	2,100	1,850
White alone	88%	74%	66%
Black alone	12%	17%	23%
Other races	0%	9%	11%
Latino	NA	12%	12%
Foreign born	13%	2%	5%
College grads	1%	3%	7%
Poverty rate	NA	28%	31%
Median income	$24,200	$30,000	$25,300
HOUSING UNITS	**8,900**	**4,900**	**4,150**
Occupied	8,800	3,800	3,300
Household size	4.4	2.4	2.3
For sale	<1%	3%	2%
For rent	<1%	14%	4%
Vacant	1%	15%	17%
Homeowners	31%	43%	40%
Median value	NA	$53,900	$34,700

Source: US Census Bureau

3 INVENTORY

The purpose of the inventory and analysis is to provide a better understanding of existing conditions; clarify the regulatory framework; recognize opportunities and potential barriers to redevelopment; and identify assets and opportunities that can leverage investments.

The Buffalo River has served as a location for industrial development since the mid-1800s. These uses have dramatically altered the ecological function of the river, but it remains a critical natural resource. And while active commercial, industrial, and residential uses occupy the majority of the study area, numerous vacant sites and valuable environmental resources remain.

3.1 Natural Resources

Geology and Soils

Nearly all land in the BOA is underlain by 390-million year-old Onondaga limestone bedrock. This solid, erosion-resistant formation spans New York State from Buffalo to Albany. The bedrock within a small area east of Elk Street is comprised of the Marcellus Formation, Oatka Creek Shale member. The depth to bedrock is generally 30 to 70 feet below grade.

The BOA is comprised entirely of lacustrine silt and clay, which are laminated layers of silt and clay deposited in glacial lakes historically found throughout New York State. Lacustrine silt and clay contains slightly impermeable soil, resulting in the potential for land instability on parcels not previously graded or sufficiently compacted. As most land has already been disturbed, concerns for future development resulting from the instability of the lacustrine silt and clay are relatively low.

According to the Soil Survey of Erie County, there are a number of distinct soil types within the BOA. Since limited site-specific information is available and on-site conditions can vary among properties, investigations will be needed to confirm site suitability prior to development.

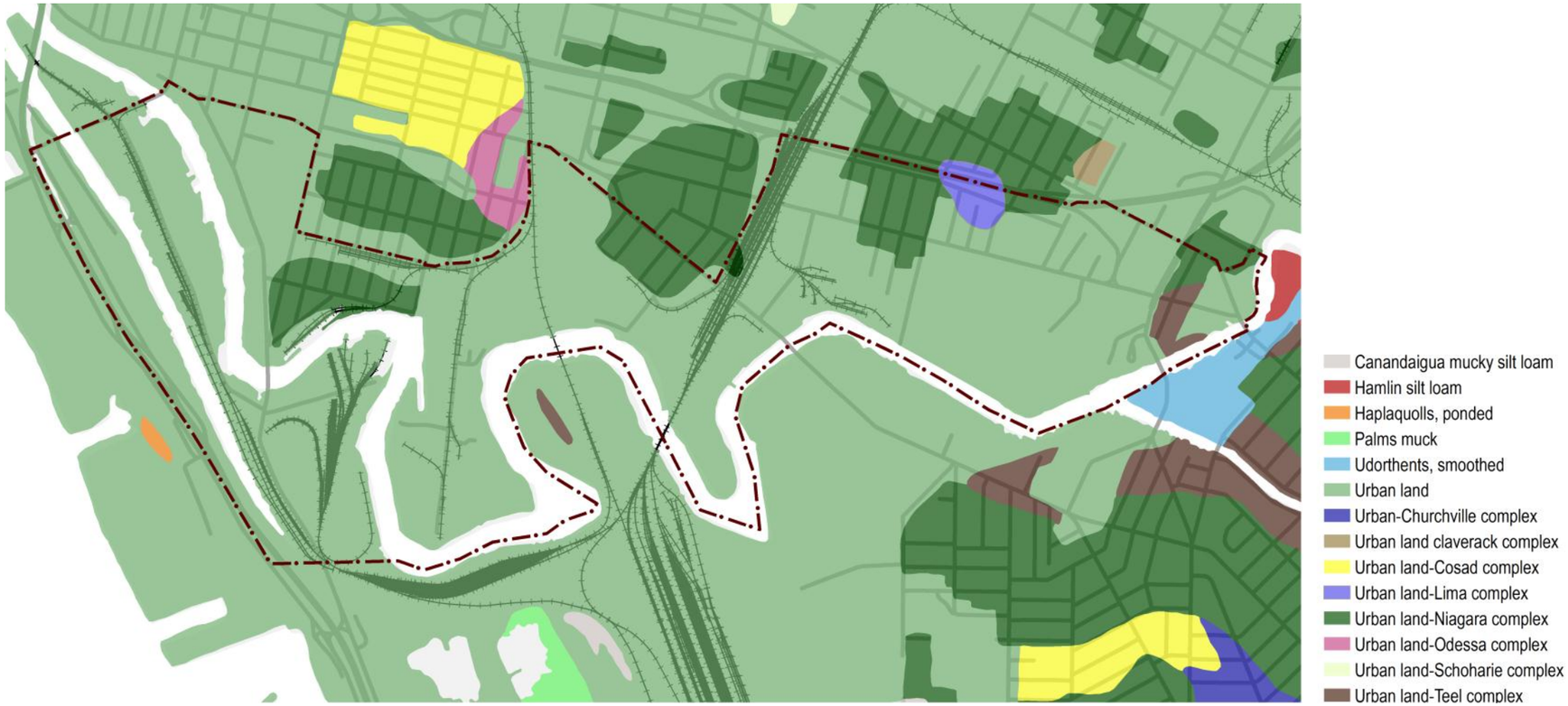
The majority of soil is mapped as commercial (Ud – Urban Land). Most areas within this soil type have been significantly disturbed through previous residential, commercial, and industrial construction activities. In most cases, the soil is completely covered with buildings, paved surfaces, demolition fill, capped remediation areas, or other man-made materials. Areas in the BOA include landfills, former marshes, and floodplains. Careful onsite investigation is essential to determine the suitability and limitations for any proposed use.

Large areas are covered with fill, generally near industry, urban development, or construction sites. These soils consist of various kinds of excavated earthy material that has been stockpiled for use as fill for topdressing; soil and rock material that has been trucked from other areas and leveled; or soil deposits that are left in areas that have been excavated or deeply scalped. In some places the fill is mixed with slag or cinders, in other places with concrete, asphalt, or other waste. These areas are generally near industrial complexes, rail yards, and rights-of-way. Cut and fill areas are usually poorly suited to farm or recreational uses, and onsite investigation is essential to determine the feasibility of using these areas for any purpose.

Several small pockets are mapped as Niagara silt loam soils (NfA), mainly around areas of O'Connell Street, South Park Avenue, Perry Street, and Bailey Avenue. This well-drained soil is composed of dark brown silt loam, and found in areas not significantly disturbed by urban development. While paved and previously disturbed portions of this soil series allow for future development; unpaved, undisturbed portions are generally ill-suited for construction due to the presence of weak, poorly drained soils.

The dump (Dp) soil type consists of excavations that are filled with rubbish and debris. Landfills are commonly constructed by removing the soil and dumping trash and refuse into an excavated area that can range from 3 to 50 feet in depth. The refuse is then covered or mixed with earth material. In historically industrial areas dumps can also contain industrial and toxic wastes. These dump sites can have a pungent odor, poor stability, and unsanitary effluents that make them undesirable for reuse. Onsite investigation is necessary to determine its reclamation value for any proposed uses. [Map 3.1]

Map 3.1 Soil types



Topography

The topography throughout the BOA is fairly level, with the exception of several ridges that traverse its central portion. The lowest point is along the Buffalo River, at an elevation of 571 feet above mean sea level. The highest point is located along a scenic ridge in Red Jacket Riverfront Park, at an elevation of 607 feet. Steep slopes are confined to the area around the ridges in Red Jacket Riverfront Park, as well as along several natural riverbanks. Portions of the Buffalo River shoreline contain concrete or steel bulkheads, resulting in a significant drop in elevation from the adjacent land.

Surface Water

The **Buffalo River** has played an integral part in the city's history. From its headwaters in the towns of Sardinia and Concord, the river winds its way for 30 miles before emptying into Lake Erie. Prior to industrialization of the waterway, the geography of this section of the city was dominated by wetland marsh, with a river water draft less than five -feet deep. Riparian zones were eliminated and replaced by hard seawalls for better access by boats, and wetlands were filled in order to be able to build the structures needed to capitalize on waterfront access. The early factories and mills that located along the river have contributed to the environmental degradation of this natural resource.

Today the Buffalo River is a navigable waterway. The US Army Corps of Engineers actively maintains a navigation channel that is dredged to a depth of 23-feet from Lake Erie to a point just west of the river's confluence with Cazenovia Creek. The waterway is slow flowing and turbid, with low dissolved oxygen.

Current river conditions include inaccessible and degraded shorelines, a loss of natural wetland buffer and filtration, and compacted and compromised upland areas that generate storm water and overload the sewer system. Additionally, the loss of naturalized edges through seawall construction has removed breeding habitat for fish, and significantly impacted wildlife that depend on riparian zones.

The river is the final collection point in the Buffalo River-Frontal Lake Erie sub-watershed, which drains 165 square miles of land. This watershed has been impacted by upper watershed agricultural runoff, faulty septic systems, and sediments affected by historical industrialization.

The river is classified by the NYS Department of Environmental Conservation as a "Class C" water body, indicating that its best use is for fishing and fish, shellfish, and wildlife propagation and survival. The water quality is suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

The **City Ship Canal** is located between Kelly Island and the Outer Harbor. It was constructed in 1850 to provide additional mooring and dock space. The canal was also used to transport goods from grain elevators to destination points across the country. It remains active, used by businesses such as General Mills, First Buffalo Marina, China Light Yacht Club, RCR Yachts Marina, and Port Crescent Land Company. The canal is classified by the NYSDEC as a "Class C" water body; and is part of the federally-designated Buffalo River Area of Concern.

Groundwater

An aquifer is an underground layer of water-bearing permeable rock, sand, gravel, or soil that contains extractable groundwater. According to the NYSDEC, no primary or principal aquifers are located within the BOA. The USEPA indicates that no sole source aquifers are located within the study area. The environmental assessment of a number of properties within and outside the BOA has determined that groundwater has been impacted by past industrial practices and petroleum spills; but there are no known uses of groundwater within the boundaries.

Wetlands and Floodplains

The City Ship Canal is the only federally-regulated wetland within the BOA; there are no state-regulated wetlands. Smaller, unmapped wetlands are present throughout, including areas of marshlands and ponds that provide highly valuable wildlife habitat. These ponded locations include areas along Red Jacket Riverfront Park behind the Valley Community Center.

According to FEMA mapping, the majority of the BOA is located in Flood Hazard Zone X, the 500-year flood inundation area where chances of flooding in a given year are minimal. The entire run of the Buffalo River, as well as the

shorelines of parcels fronting it and the City Ship Canal, are located within flood hazard Zone AE. This means that these parcels are within the 100-year flood inundation area, and have a 1 percent annual chance of flooding. Parcels in Zone AE include General Mills, Red Jacket Riverfront Park, Buckeye Terminal, First Buffalo Marina, RCR Yachts Marina, and China Light Yacht Club. Flooding on many of these parcels has been mitigated by the installation of concrete bulkheads that extend above mapped flood elevations. [Map 3.2]

Erosion Hazard Areas

According to the city's Draft Local Waterfront Revitalization Plan, there are no designated Coastal Erosion Hazard Areas within the BOA. Many properties along the Buffalo River corridor are protected from erosion by concrete bulkheads or riprap, but some portions of the stream banks are unprotected and subject to the possibility of future erosion.

Fish and Wildlife Habitats

Fish and wildlife habitat in the BOA is degraded due to development along the riverbank and routine navigational dredging. The Buffalo River is listed by the USEPA as a Great Lakes Area of Concern. To date, three habitat restoration projects have been completed in the AOC, and six more are underway or in the design phase.

The USEPA recently funded the development of the Buffalo River Ecological Restoration Master Plan, an actionable restoration plan that was developed through extensive stakeholder involvement. The ERMP identifies potential habitat restoration sites and activities that will make progress towards delisting the three habitat-related Beneficial Use Impairments possible. The ERMP identified five restoration sites: the cap area of City Ship Canal, the Ohio Street shoreline, the Katherine Street peninsula, Red Jacket Riverfront Park, and the Buffalo Color peninsula shoreline.

The Significant Coastal Fish and Wildlife Habitats program serves to protect important fish and wildlife habitats that contain a unique combination of environmental and biological conditions that fish and wildlife need for survival. No designated habitats are located within the BOA, although habitats are located to the west at the Times Beach Nature Preserve and the Small Boat Harbor.

Fish habitat is also degraded by navigational dredging that has created an over-widened, over-deepened channel lacking the natural pool/riffle regime. Some 41 native species of fish have been observed in the Buffalo River, including the longear sunfish and black redhorse, which are listed as "Species in Greatest Conservation Need."

The river is also a key location within the North American Flyway for bird migration, and lies along the direct path of a globally significant Important Bird Area. Habitat areas along the water's edge are crucial for many avian species as they pass through on their migration pattern.

The NYSDEC lists 15 endangered species that have historically inhabited the BOA. According to the US Fish & Wildlife Service's Inventory of Threatened and Endangered Species, no federally-listed species are currently found in Erie County. Non-endangered wildlife typically found along the Buffalo River includes amphibians, snakes, and mammals.

The City Ship Canal also provides habitat for fish, amphibians, and invertebrates. Although it is an artificial channel, it has increasing value as a link between lake and river habitats, especially for waterfowl and fish in need of nesting, spawning, and resting places. Native shoreline and aquatic vegetation have naturalized the western edge of the canal south of the active industrial area.

Air Quality Maintenance Areas

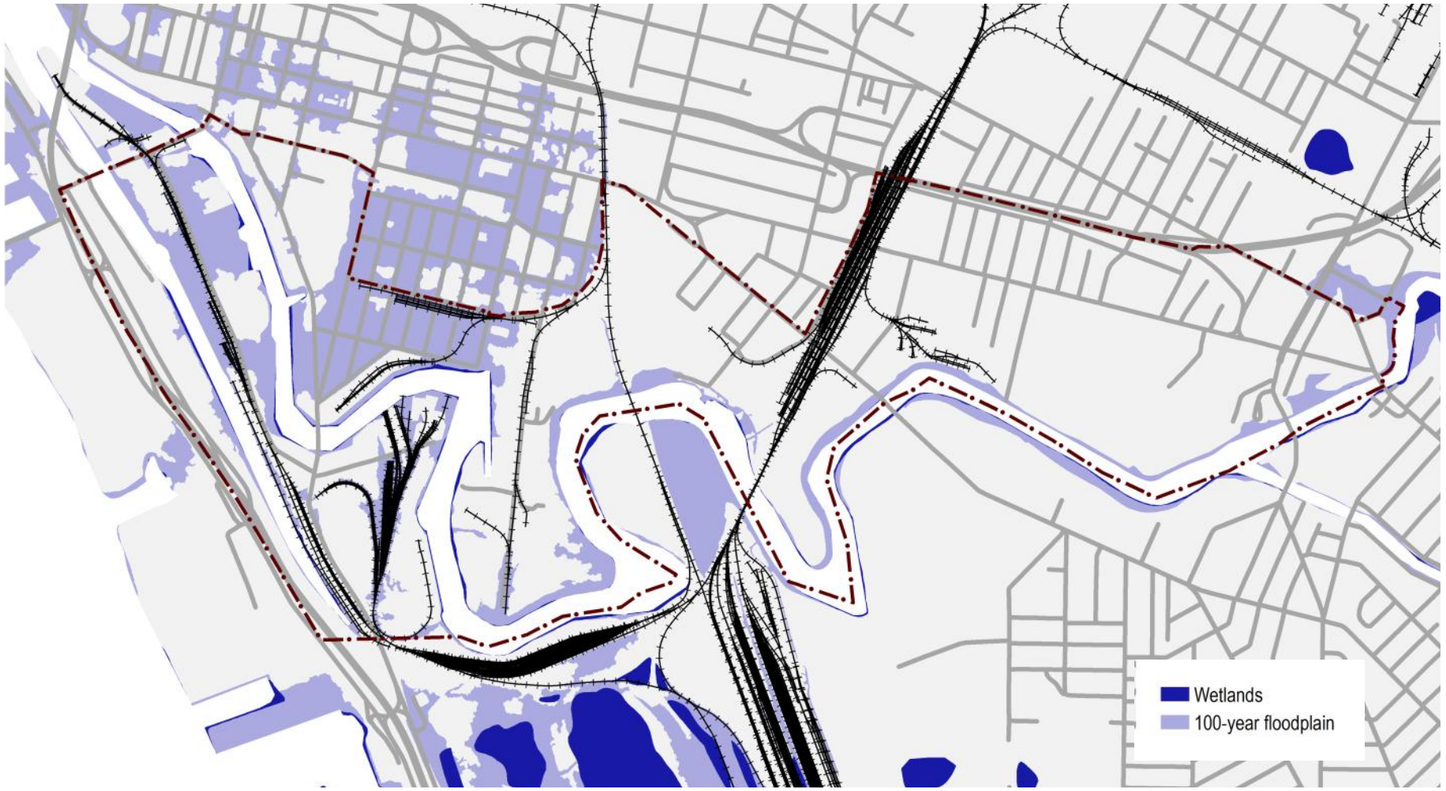
Air Quality Maintenance Areas are places that "persistently exceed the national ambient air quality standards" in the Federal Clean Air Act. These areas are designated as "non-attainment" areas. The city is a designated non-attainment area, earning a "subpar" rating in 2011 due to ozone levels in excess of state and federal limits.

The Buffalo-Niagara region has been designated a non-attainment area 10 times since 2000, most recently in 2013. The region has experienced non-attainment status related to 8-hour ozone. Ground level ozone is emitted into the air through chemical reactions between nitrogen oxides and volatile organic compounds. Major sources of nitrogen oxides and volatile organic compounds include emissions from industrial facilities, gasoline vapors, and chemical solvents.

Visual Quality

Most of the parcels along the Buffalo River have been developed for industrial and commercial uses. The river and several sections of its bank offer natural view sheds; while cultural and historic view sheds are provided by a collection of historic grain elevators lining the river, some of which remain active today. Route 5 is part of the Great Lakes Seaway Trail, and provides picturesque views of Lake Erie, the Buffalo River, grain elevators, and the city skyline. A topographic ridge located in Red Jacket Riverfront Park also offers scenic views of the Buffalo River, Tifft Nature Preserve, and the Concrete Central Elevator.

Map 3.2 Wetlands and floodplains



Upland Natural Resources and Open Space

The BOA is primarily comprised of industrial, commercial, and residential properties; but also offers areas of important upland open space. Riverfest Park, the Ohio Street boat launch, Father Conway Park, Mutual Riverfront Park, and Red Jacket Riverfront Park are dedicated public spaces that preserve upland open space. A number of former industrial parcels, including several on the Katherine Street Peninsula, have also been left unmaintained over the past few decades and are undergoing the re-establishment of upland habitat.

State and Federally-Designated Resources

The Great Lakes Seaway Trail, a 518-mile long National Scenic Byway established in 1978, follows Route 5 through the BOA.

3.2 Infrastructure

This section of the city was largely built-out by the early 1900s, and benefits from an infrastructure network that provides nearly complete coverage for electric, natural gas, water, and sewage disposal.

Electric

Mapping and system information for the privately owned and managed electrical distribution and transmission network was obtained from National Grid. The study area is serviced by several distribution feeders providing overhead and underground electrical service. According to system records, the city distribution network iconsists of 5 kV overhead and buried feeders. High voltage distribution and sub-transmission lines are located on the Katherine Street peninsula and along Ohio Street, where they connect to a transformer at the intersection of Childs Street. High voltage service continues along Childs to a private transformer serving the grain elevators at Silo City. The industrial nature of the BOA suggests sufficient access to electrical capacity for future redevelopment, although there have been reliability issues on Kelly Island. [Map 3.3]

Natural Gas

Correspondence with the engineering department at National Fuel indicated that all parts of the BOA are within sufficient distance of an existing supply main with available capacity to support future redevelopment.

Water

The Buffalo Water Authority provides potable water to properties in the city. Water is pumped from Lake Erie and treated and distributed at the Colonel Ward Pumping Station on Porter Avenue. The BOA is primarily supplied by public water lines ranging from 6 to 48 inches in diameter. The only private water service is a 12-inch line located along Childs Street that services Silo City.

Properties in the BOA are fed from a 48-inch supply main that loops through the city and connects with numerous service mains. A 16-inch line travels along Ganson Street to Ohio Street, continuing south to a connection with a 16-inch line along Fuhrmann Boulevard. A 20-inch line along Louisiana Street supports development to the east and north of the Buffalo River. Two 10-inch mains along South Park Avenue and Elk Street service the area south to the Buffalo River. [Map 3.4]

Sanitary Sewer

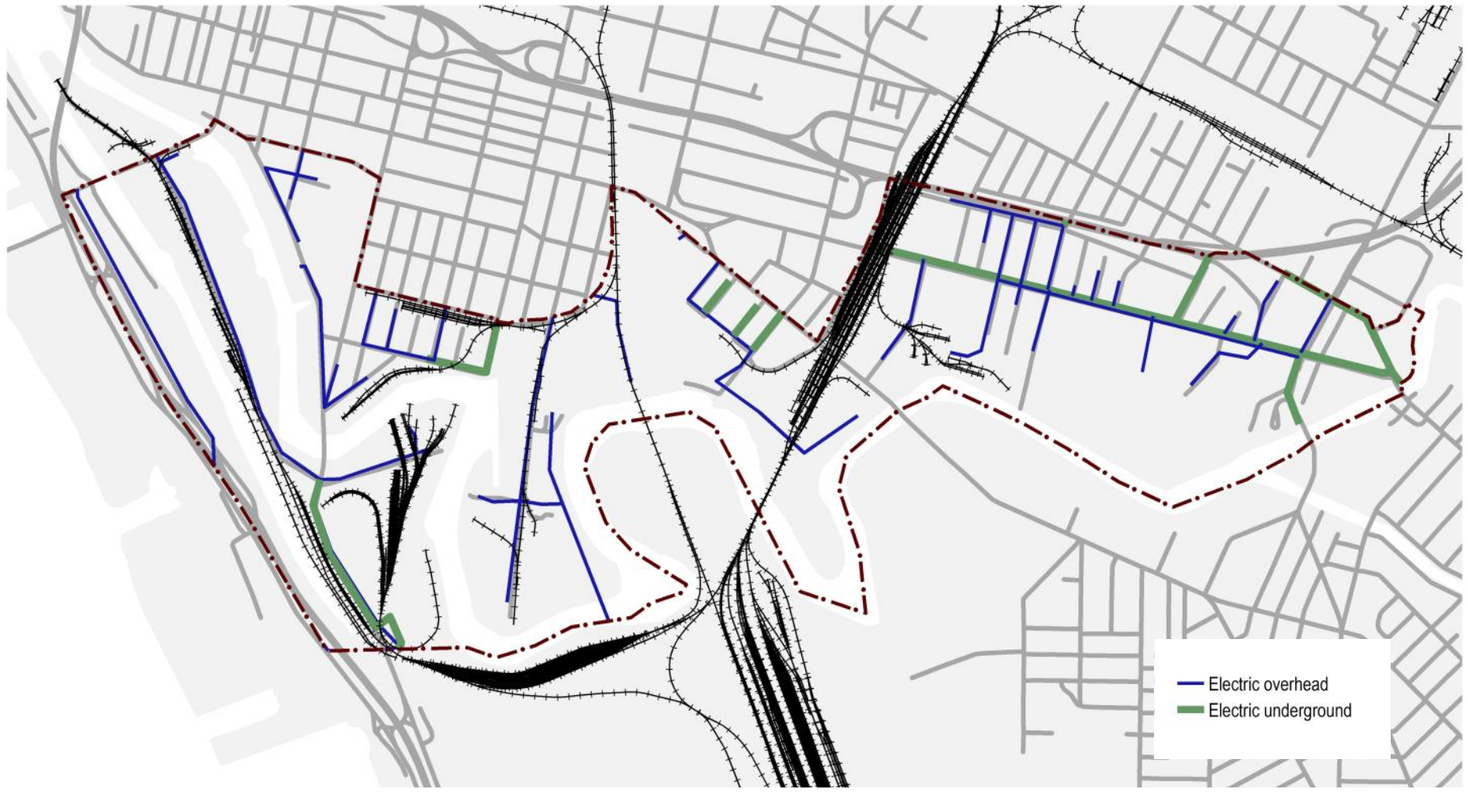
The sanitary sewer system within the BOA includes separate sanitary sewers, combined storm/sanitary sewers, large interceptor sewers, and pump stations. Service within the city is provided by the Buffalo Sewer Authority, which operates a waste water treatment plant on Squaw Island. [Map 3.5]

Separate Sanitary Sewers The separate sanitary sewer system within the BOA consists of 2.3 miles of pipe ranging from 10 to 24 inches in diameter. These sewers convey flows to large interceptor sewers both within and outside the BOA, which direct the sewage north to the treatment plant. Separate sanitary sewers service limited areas of the BOA, including Kelly Island, the Katherine Street peninsula, and areas south of the Buffalo River.

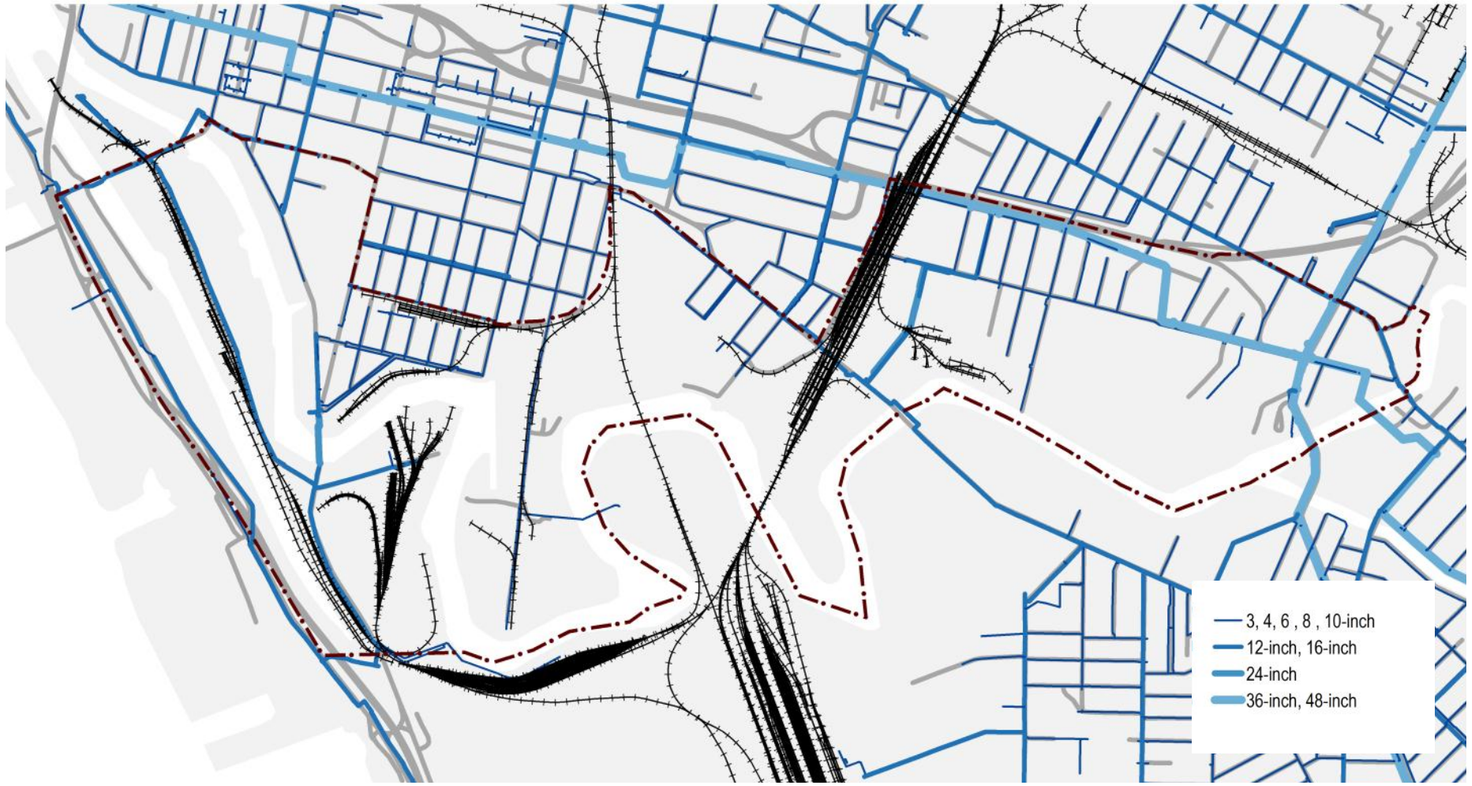
Silo City is serviced by a 12-inch sanitary sewer along Childs Street. At 25 percent current use, this line has the capacity to service approximately 400 residential units or 1,000 hotel rooms. The Katherine Street peninsula is also serviced by a 12-inch sanitary sewer, with the capacity to service up to 1.5 million square feet of commercial/industrial space.

A 21-inch sanitary sewer services the southern portions of Ohio Street and the Rigidized Metals facility. At 50 percent current use, this sewer has the capacity to support an additional two million square feet of commercial/industrial

Map 3.3 Electric Infrastructure



Map 3.4 Water infrastructure



space or 600 housing units. The Childs Street and Ohio Street sanitary sewers meet at a pump station at their intersection with Ganson Street, and continue northward through Kelly Island as a 24-inch sewer. Taking the existing development along Ganson Street into consideration, at 50 percent current use a 24-inch sewer has the capacity to service an additional 3.7 million square feet of commercial/industrial space.

The area west of the City Ship Canal and east of Route 5 currently has no sanitary sewer service. A potential connection to an 18-inch sanitary sewer along Fuhrmann Boulevard could provide this service. A preliminary analysis of the capacity of this sewer to carry flows from future development along the shoreline, in addition to flows from future development along City Ship Canal, indicates that it would support an additional 3 million square feet of retail/office space or 900 housing units.

Combined Sewers Portions of the BOA also utilize a combined sewer collection system that conveys both sanitary and storm sewer flows through the same lines. The system receives sanitary inflows from adjacent development and storm water inflows from impervious surfaces such as streets, parking lots, and building roofs. Localized combined sewer systems transfer flows to interceptor sewers that gather waste from large portions of the city and convey it to the treatment plant on Squaw Island.

During intense rain, the combined sewer and interceptor systems do not have the capacity to convey the significantly increased flows. To mitigate the lack of capacity in these instances, combined sewer outfalls are used to prevent storm water and sanitary sewage from back flowing into buildings.

The BOA is serviced by 6.5 miles of combined sewer, ranging from 8 to 72 inches in diameter. Apart from Katherine Street, all areas north of the Buffalo River are serviced by combined sewer. There are several areas where the combined sewer system is connected to a combined sewer outfall that empties into the Buffalo River, including Louisiana Street, Hamburg Street, Smith Street, Babcock Street, and Bailey Avenue. Connection to the combined sewer outfall indicates that the sewer service in this area is insufficient to meet peak demands during a rainfall event.

Combined Sewer Outfalls Combined sewer outfalls are points where wastewater and storm water from a combined sewer system are discharged directly into surface waters. Generally these discharges occur without prior treatment during periods of heavy precipitation or snow melt. In the BOA, storm water carries pollutants from streets and properties and wastewater carries human waste and bacteria directly into the Buffalo River through the combined sewer system. CSOs are responsible for much of the water quality degradation in the river.

There are five CSOs located along the Buffalo River within the BOA. These CSOs drain roughly 4,350 acres, and experience an average of 255 overflow events annually. This situation is compounded by storm water and sewer overflows generated upstream of the BOA, in the watershed beyond the city limits.

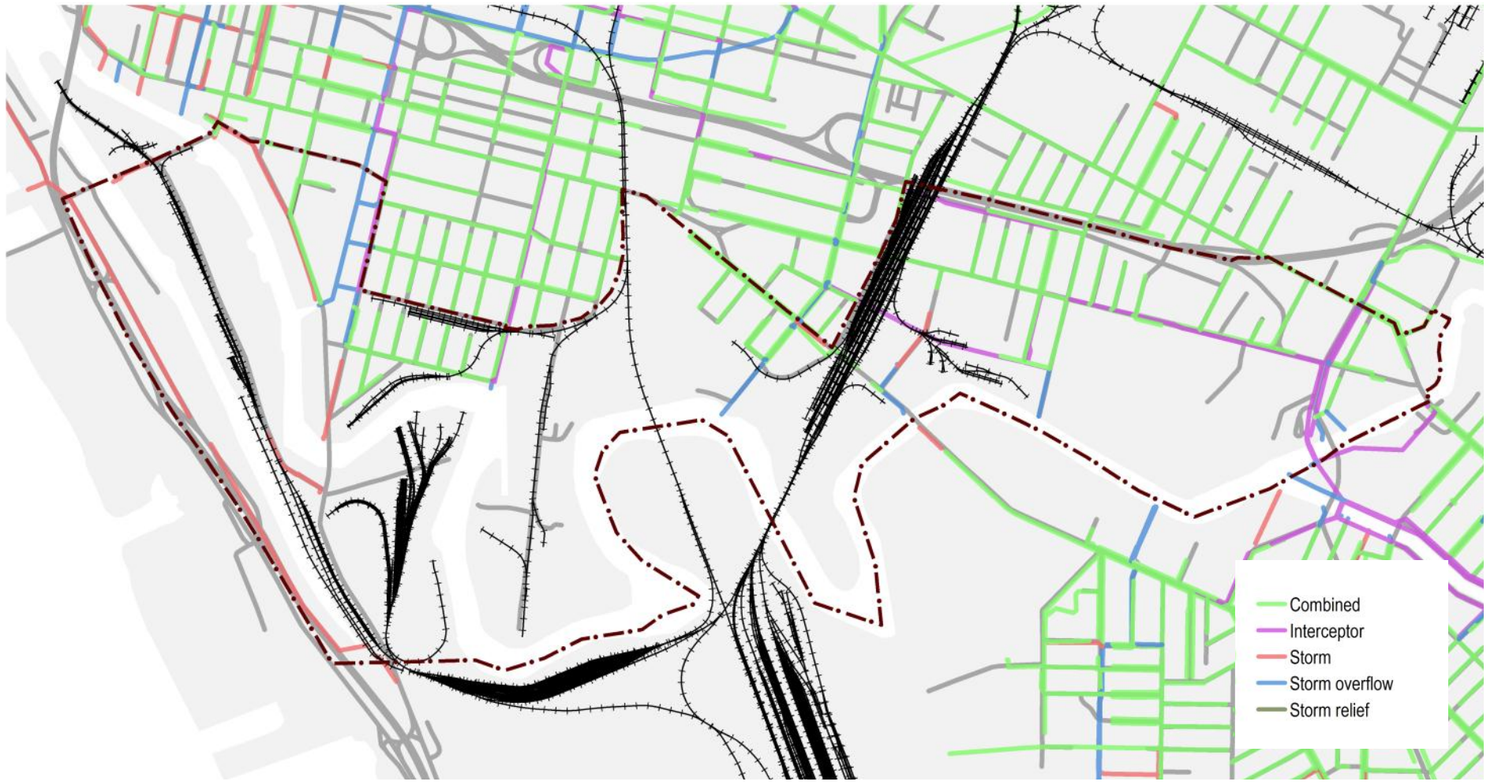
CSO 026 is 16 by 12 feet, and follows Smith Street to an outfall on the Buffalo River. This concrete conduit gathers direct storm sewer inflows as well as combined sewer and interceptor sewer overflows. CSO 064 is 12 by 12 feet, and travels beneath Conway Park within the former Ohio Turning Basin to an outfall just west of Louisiana Street. Due to their large size and critical placement, these facilities are unlikely to be relocated, and should be noted on maps to avoid potential development conflicts.

Efforts have been undertaken over the past decade to improve water quality by reducing or eliminating combined sewer overflows. With its Long-Term Control Plan, the BSA will be able to reduce both the number and volume of overflow incidents. In addition to traditional grey infrastructure pipe separations, proposed projects include a host of green infrastructure initiatives.

Interceptor Sewers A 9-foot diameter interceptor sewer enters the BOA from the east and travels along Elk Street, where it joins with a smaller branch from the Buffalo Color Complex and continues west along Perry Street as an 11-foot concrete box. Smaller interceptors are located along Louisiana and Hamburg streets. Similar to the combined sewer system, any additional inflows of storm water to these interceptors should be avoided to maintain maximum operating capacity of the sanitary system.

Pump Stations The sanitary, combined, and interceptor sewers all flow underground largely via gravity. To overcome the extreme depths required for extended lengths of sewer, several pump stations are used to lift sewage from lower to higher elevations. There are three pump stations located along the Buffalo River – the Skyway Pump Station at the foot of Main Street; the Hamburg Pump Station at Hamburg Street and the I-190; and the South Buffalo Pump Station at the confluence of Cazenovia Creek and the river.

Map 3.5 Sewer infrastructure



Storm Sewer

The storm sewer system is composed of separate storm sewers, combined sewers, storm overflow sewers, and storm sewer outfalls. Storm sewers are managed by the BSA, which has adopted a storm water management plan pursuant to state and federal requirements.

The areas of greatest need for storm sewers generally have the highest levels of impervious surface coverage. Impervious surfaces capture rainfall and convey it directly into the storm (or combined) sewer system, with an ultimate outfall to the Buffalo River. The areas with the most significant levels of impervious cover are Kelly Island, the Katherine Street peninsula, and the Buffalo Color and ExxonMobil/Buckeye complexes.

Separate Storm Sewers There are 2.2 miles of separate storm sewers located within the BOA. More than half of this runs along Route 5, and is not currently servicing any private development. Small segments of separate storm sewers are located along Ohio and Louisiana streets, and another small area services the Buffalo Color complex. These storm sewers convey rainfall directly to the Buffalo River. In many instances, storm water is also conveyed directly to the river from adjacent properties, without the use of sewers.

Storm Sewer Outfalls The Buffalo River is the only Stormwater outfall location for significant portions of the city south of William Street. As a result, during large rainfall events significant flows of storm water and sewage enter the River, greatly diminishing water quality. There are three primary storm sewer outfalls within the BOA – at the foot of Louisiana Street by the Ohio Street Bridge; east of Hamburg Street at the New York Power Authority ice boom storage site; and beneath the rail bridge east of Red Jacket Riverfront Park.

Green Infrastructure

Green infrastructure seeks to recreate naturally occurring functions to generate positive impacts on energy use, air and water filtration, storm water management, and flood control and prevention. It includes components at multiple levels – from individual sites to neighborhoods to watersheds – each contributing to the sustainability of the natural network. The following are several green infrastructure and sustainable infrastructure developments that have occurred or are planned within the BOA.

Buffalo River Remedial Action Plan This US Environmental Protection Agency plan outlines strategies to restore the health of the Buffalo River by building strong community partnerships to protect and restore shoreline buffers and habitat, secure public access, dredge the river, and provide public education. All of these measures contribute to broader public awareness and interest in green infrastructure strategies.

Buffalo River Greenway Planning Greenway planning work has identified key environmental issues, trail connections, parks, conservation areas and community assets. The plans make recommendations for green infrastructure related to open space preservation in conjunction with implementation of the multi-purpose open space corridor.

Niagara River Riparian Restoration Program This program seeks to develop forest buffers or other habitat features such as rain gardens, small-scale soft shoreline stabilization, meadows, and wetlands on waterfront properties along the Niagara and its tributaries. The goal is to restore ecological integrity for property closest to the water for habitat and increased filtration. Properties along the Buffalo River that have participated in the program include: China Light Yacht Club, RCR Yachts, and Buffalo Scholastic Rowing Association. Riparian restoration is a broad approach to green infrastructure and provides the groundwork for the development of smaller, neighborhood and site specific green infrastructure measures.

Buffalo Niagara Riverkeeper Water Quality Testing The Riverwatch Team has been testing approximately 40 sites within the Niagara River watershed (including the Buffalo River). The goal is to monitor the waterways over a one-year period in order to develop a clear picture of where problem areas are located, and identify the time of year that is most problematic. Sites along the Buffalo River include: Buffalo River Commercial Slip, Ohio Street Fishing Access, Smith Street Park, the confluence with Cazenovia Creek, and Seneca Bluffs. The water quality tests are important to understand when developing plans for green infrastructure opportunities that improve water quality within the BOA.

Niagara River Watershed Management Plan Buffalo Niagara Riverkeeper is working in collaboration with dozens of municipalities and agencies and with individual citizen participation on the development of a Niagara River Watershed Management Plan to determine what needs to be done to protect and restore water resources in our community and the Niagara River watershed. The management plan serves as a foundation for the implementation of the green infrastructure Stormwater best practices.

Buffalo Sewer Authority Long-Term Control Plan The BSA has developed a long-range plan to mitigate combined sewer overflow events. It is anticipated that up to $100 million will be invested in green infrastructure initiatives, providing a significant opportunity to coordinate these projects with BOA infrastructure needs.

Ohio Street Reconstruction Ohio Street links Canalside with the Outer Harbor, and its recent reconstruction included green infrastructure elements.

Mutual Riverfront Park Mutual Riverfront Park includes rain gardens to capture water from the roof of the building and from the parking lot as part of the overall storm water management for the site.

Downspout Disconnection Pilot Program The BSA and Buffalo Niagara Riverkeeper are currently studying the potential benefits of downspout disconnection in the Old First Ward neighborhood. Flow meters have been placed in area sewers to determine if downspout disconnections and rain barrels work to reduce storm water runoff.

3.3 Transportation

The BOA contains a comprehensive network of streets and sidewalks, making most points easily accessible by foot, bike, bus, or car. There are also a number of active rail lines; and the Buffalo River provides for both recreational boating and commercial shipping.

Pedestrians and Bikes

Buffalo has had a Complete Streets policy since 2008, to ensure that streets are designed to be safe, comfortable, and convenient for all users – particularly cyclists, pedestrians, and the mobility impaired. As streets are reconstructed throughout the city, the impacts of this policy will become increasingly evident. [Map 3.6]

The Bicycle and Pedestrian Master Plan prepared by the Greater Buffalo Niagara Regional Transportation Council proposes on-road bike routes along Ohio Street, Louisiana Street, South Park Avenue, Smith Street, and Bailey Avenue. An off-road bike path linking the Niagara Riverwalk and Riverfest Park has also been proposed in conjunction with the Ohio Street improvements.

The BOA provides an extensive sidewalk network that connects residential neighborhoods such as The Valley and Old First Ward. These sidewalks also connect with a comprehensive network of sidewalks and pedestrian walkways extending beyond the BOA.

Public Transportation

The Niagara Frontier Transportation Authority operates eight bus lines within the BOA. These routes are located along Ohio Street, South Park Avenue, Elk Street, Bailey Avenue, and Seneca Street. There are a total of 36 bus stops, with the majority located near residential neighborhoods. Bus routes serving the BOA also connect with the city's subway line, which parallels Main Street from downtown to the University at Buffalo South Campus. [Map 3.7]

Roads

The existing road network is classified into a hierarchy based on several factors, primarily road capacity and traffic volume. Local streets, arterials, and collectors comprise the majority of the road infrastructure in the BOA. There are also two high-volume, limited access highways: Interstate 190 runs east/west and has interchanges at Smith and Seneca streets; and State Route 5 runs north/south and has an interchange at Fuhrmann Boulevard.

Recent improvements to Route 5 include a new interchange at Ohio Street, which is located just south of the BOA. This provides direct access to Fuhrmann Boulevard and the southern portion of the Outer Harbor, as well as to the BOA along Ohio Street.

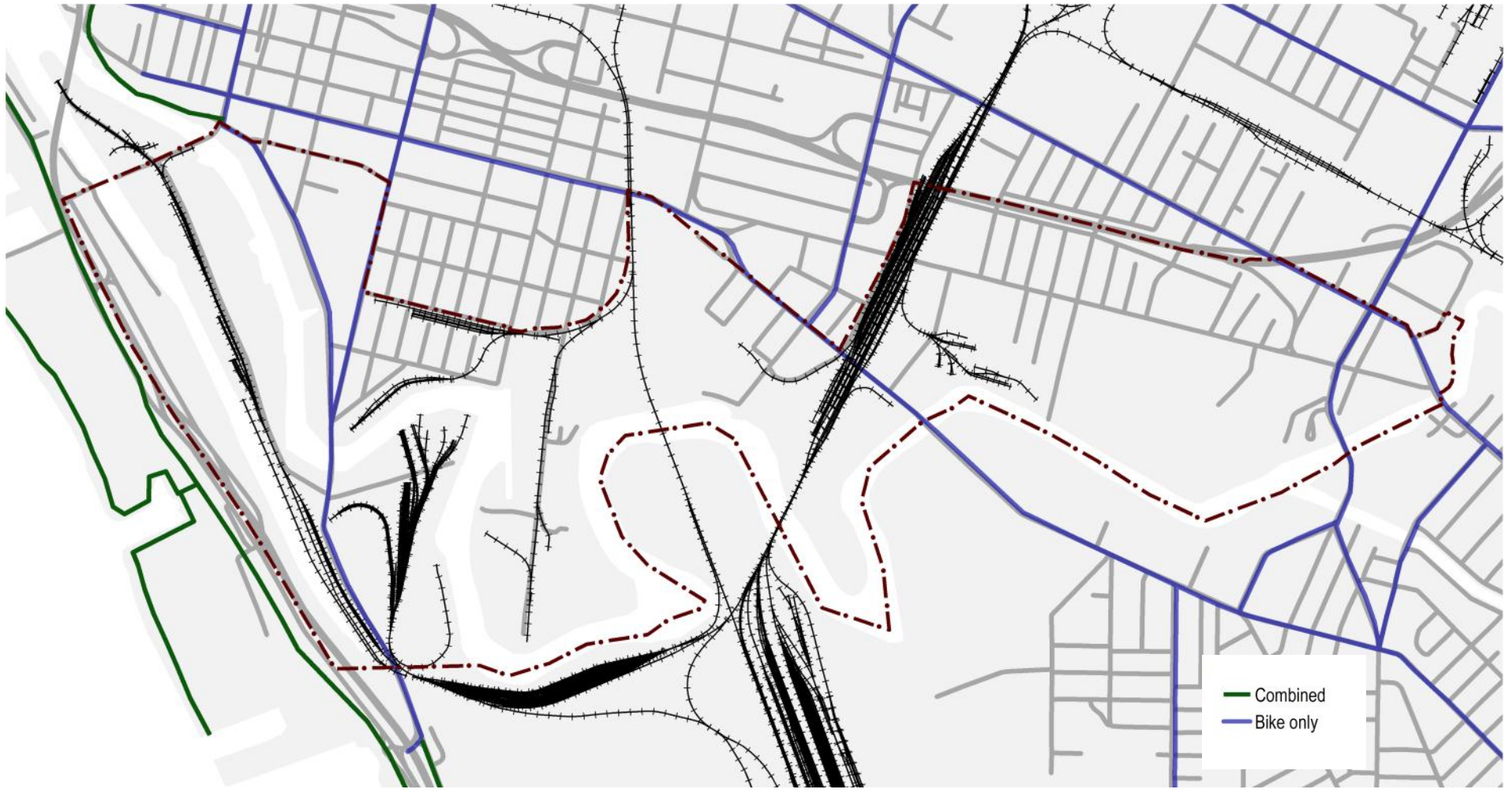
There is also a proposal for a Tifft Street Arterial, which would direct commercial traffic away from the I-190/Route 5 interchange downtown. This limited access roadway would connect with the I-190 at the Seneca Street interchange and travel south along an abandoned rail corridor to intersect with Tifft Street just south of the BOA. The proposal would require the construction of a new bridge over the Buffalo River.

Finally, there is an extensive network of truck routes throughout the BOA, to allow access to the many industrial and warehousing facilities. [Map 3.8]

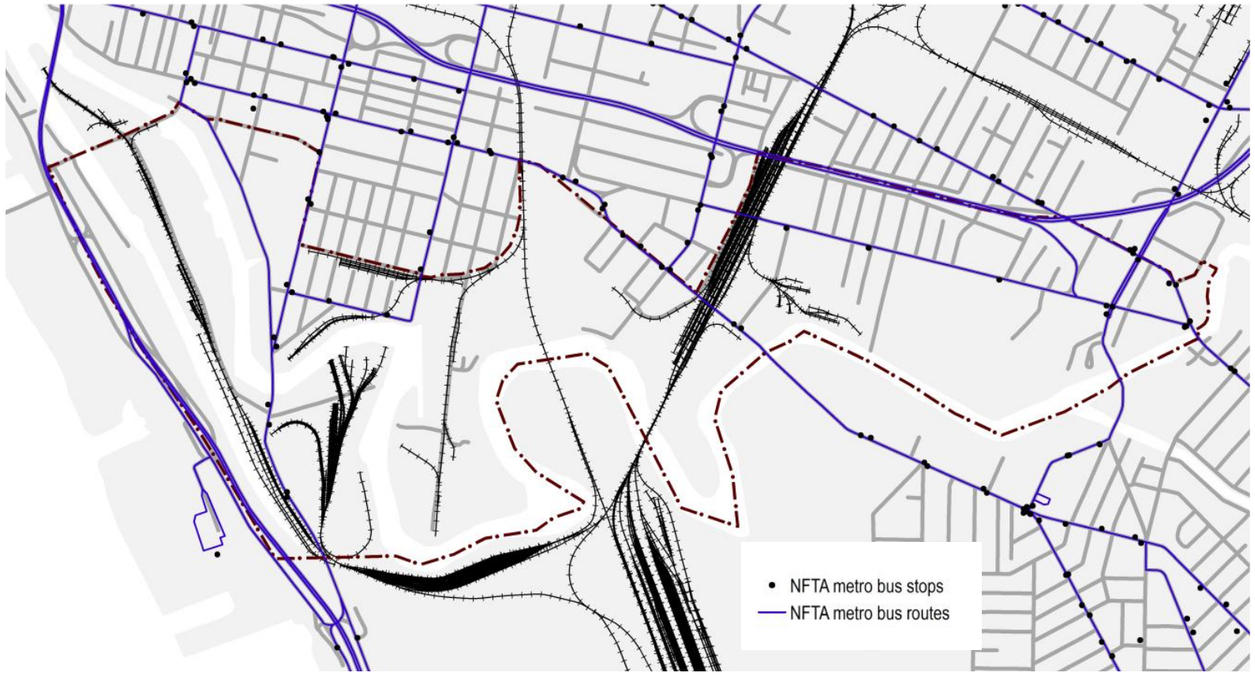
Rail

The BOA is served by two Class I railroads – CSX Transportation and Norfolk Southern. Class I railroads are defined as having annual carrier operating revenues of at least $250 million. Other railroads operate facilities and use trackage in the BOA, including Amtrak, the Class II

Map 3.6 Pedestrian and bicycle infrastructure



Map 3.7 Public transportation



Buffalo and Pittsburgh Railroad, and the Class III Buffalo Southern Railroad and South Buffalo Railway.

Buffalo Junction Yard is a transfer location within the BOA, located beneath the I-190. Both CSX and Norfolk Southern interchange here prior to traveling to CSX's Frontier Yard and Norfolk Southern's Bison Yard. CSX also owns, operates, and maintains two drawbridges over the Buffalo River, both of which link to the Tifft Street Yard, a transfer location south of the BOA.

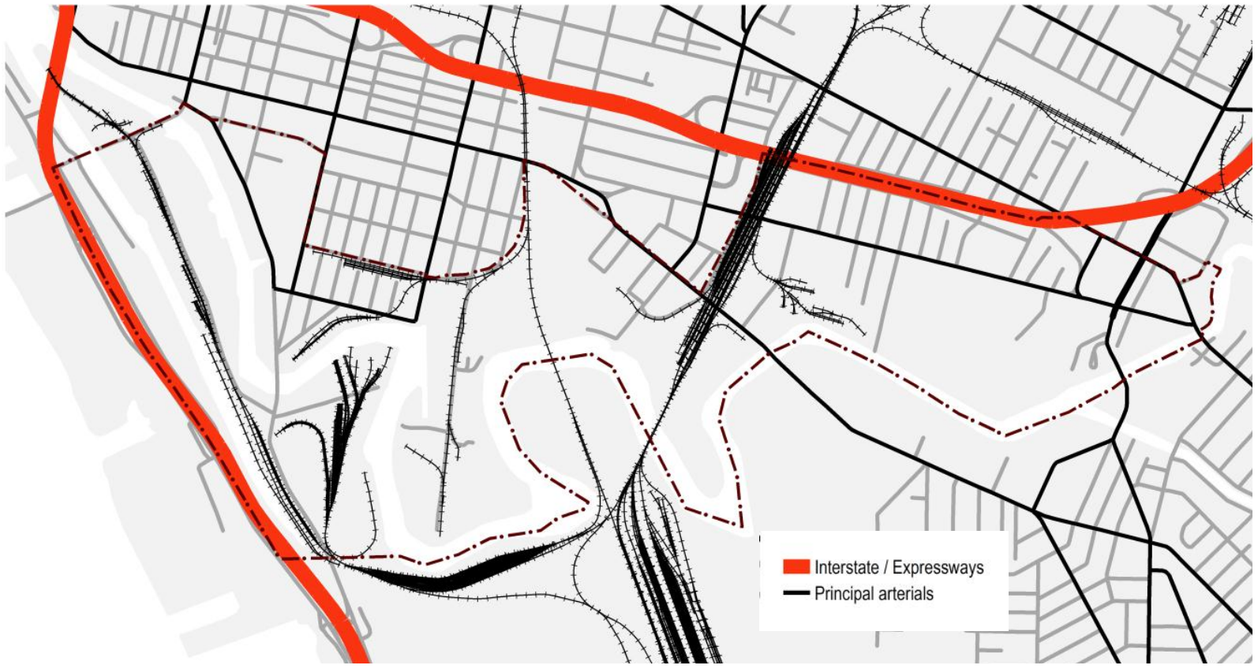
The extensive rail network offers opportunities to more effectively utilize existing lines, as well as to develop new ones. There are numerous industrial sites adjacent to existing rail lines or already connected by sidings or spurs; and abandoned rail corridors that could be put back into service. [Map 3.9]

Navigable Waterways

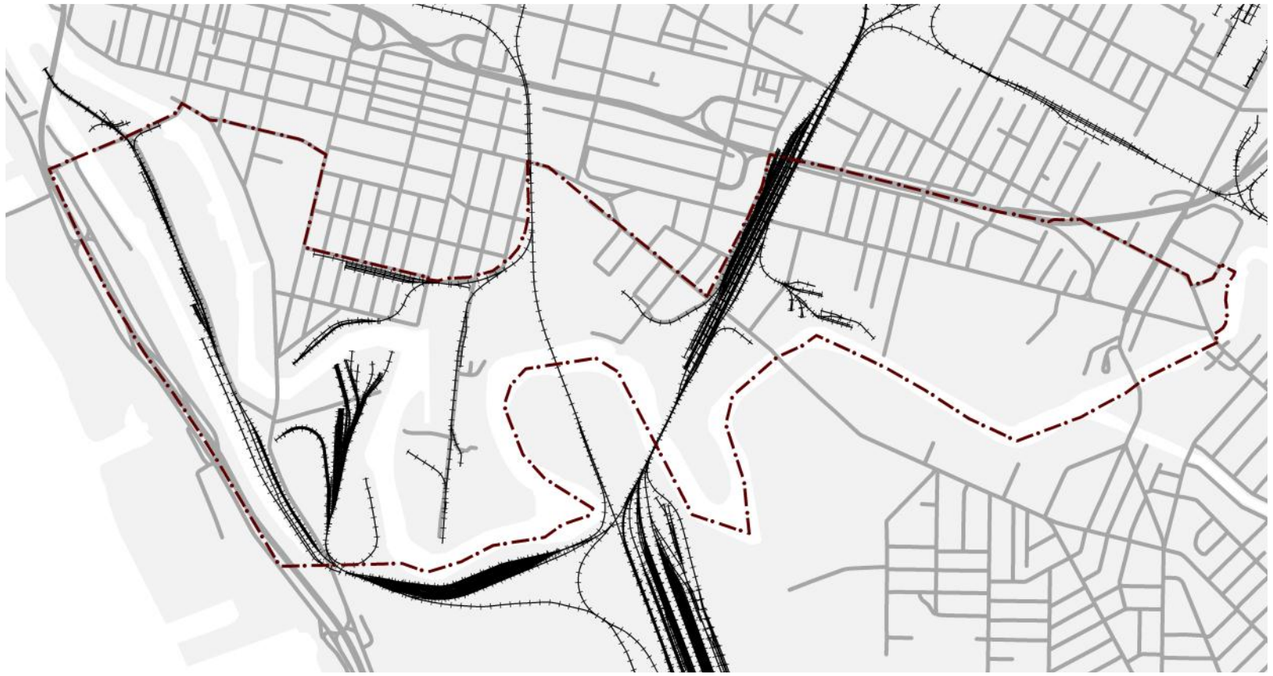
The Buffalo River and City Ship Canal are the primary navigable waterways within the BOA. The Army Corps of Engineers maintains the shipping channel for the Buffalo River from its mouth to the former Conrail Bridge south by the Buckeye Terminal, as well as the majority of the City Ship Canal. Both channels are maintained to a minimum depth of 22 to 23 feet below low water datum, although slightly deeper depths may occur in localized areas. Shipping channels are dredged every two to three years to remove accumulated sediment. [Map 3.10]

Headwalls The shorelines of the Buffalo River and the City Ship Canal are comprised of headwalls of varying types and conditions. The shoreline is generally more natural or comprised of rip rap on the upstream portion of the river, with higher concentrations of wall structures or bulkheads in the downstream areas.

Map 3.8 Roads



Map 3.9 Rail infrastructure



Bridges There are two fixed highway bridges, three active road drawbridges, two active railroad drawbridges, and two inactive railroad drawbridges within the BOA. The two fixed highway bridges carry Bailey Avenue and Seneca Street traffic over the Buffalo River, while the three drawbridges are at Michigan Avenue, Ohio Street, and South Park Avenue.

The Michigan Avenue Bridge connects Kelly Island to the mainland, and has a 20-foot clearance over the Buffalo River when down, and 101 feet when raised. The Ohio Street Bridge has an 18-foot clearance when down, and 105 feet when raised; and the South Park Avenue Bridge has a 19-foot clearance when down, and 95 feet when raised.

The Michigan Avenue and Ohio Street bridges are raised an average of 1.5 times per weekday, with a slightly higher average on weekends. The typical operating time of a movable span is approximately eight to ten minutes. All drawbridge operations, whether for vehicular or rail traffic, are regulated and have specific requirements for operation times and advance notice periods.

The CSX Rail Drawbridge at River Mile 4.0 crosses between the Katherine Street peninsula and Red Jacket River Front Park, and provides about 18 feet of clearance when down. The Buffalo Creek Railroad Bridge at River Mile 4.4 has a clearance of approximately 12 feet.

CSX also owns the inactive drawbridge adjacent to the Buffalo Creek Railroad Bridge. Half the span is permanently locked in the upright position, while the other half is a fixed span, sitting 12 feet over the Buffalo River. A second inactive drawbridge, formerly known as the DL&W Buffalo River Draw, is located at River Mile 5.8. The lift section of the bridge has been removed, leaving the fixed portion jutting out into the Buffalo River.

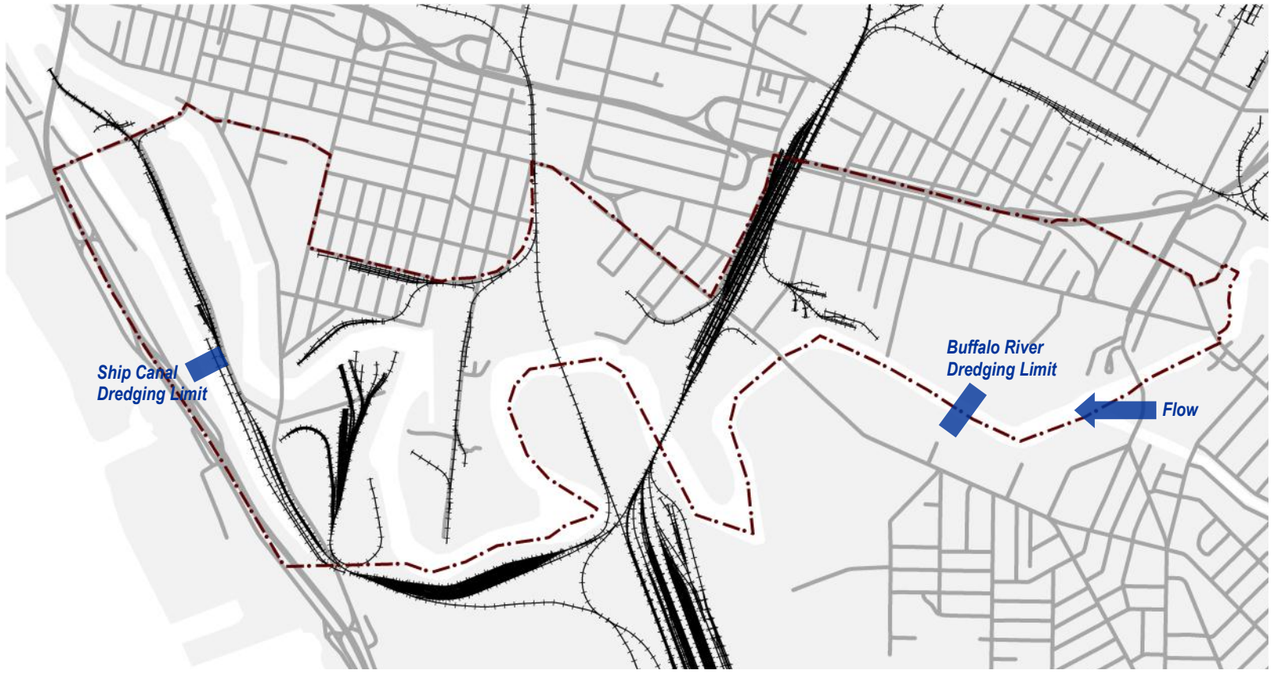
Ship Traffic Buffalo River shipping traffic is monitored by the United States Coast Guard, although the United States Department of Homeland Security, Immigration and Naturalization Service, New York State Department of Environmental Conservation, Erie County Sheriff, and Buffalo Police Department also monitor the waterway.

The average navigation season runs from April 1 to December 30. Travel out of the Buffalo River into Lake Erie may be prohibited during the winter, since no navigation channel is maintained when the lake is frozen. The river often freezes as well, although a small navigation channel is maintained for small craft travel and transport.

Regulations stipulate that all vessels requiring the Michigan Avenue drawbridge to be raised must have the assistance of a tug boat when approaching and passing the bridge. Commercial shipping to the upstream portion of the river beyond Mile 3.0 is infrequent, with only an occasional barge serving the Buckeye facility. Most of the commercial shipping is focused on General Mills, Pillsbury, LaFarge Cement, and sand storage at Port Crescent.

Buffalo River traffic is significantly influenced by recreational users, largely generated by private marinas lining the City Ship Canal and Outer Harbor areas. In 2010 the Erie Canal Harbor Development Corporation conducted a Moveable Bridge Lift Analysis Report, which summarized traffic trends. It indicated that less than 10 percent of the river traffic is designated as commercial, and that half the traffic is able to clear the Michigan Avenue and Ohio Street drawbridges in their closed positions.

Map 3.10 Navigable waterways



3.4 Parks and Open Space

The BOA contains a number of parks, trails, water access points, and community centers that provide the public with open space opportunities, access to the river, recreational activities, and community services.

Parks

The BOA is home to five public parks and one community-maintained open space. [Map 3.11]

Riverfest Park is a privately-owned, publicly-accessible open space that also serves as the northern gateway to the Ohio Street corridor. The three-acre park sits along 600 feet of shoreline, and looks out over Kelly Island to give visitors a glimpse of Buffalo's industrial past. The park has paved walking trails that lead to a waterfront boardwalk and docks and slips on the river. It offers several seating areas and a band shell, along with 13 parking spaces.

Father Conway Park sits on 15 acres between Ohio and Louisiana streets, to the southeast of Riverfest Park. It has a pair of softball diamonds used by recreation leagues, a playground, and several acres of open space. A comfort station is located adjacent to the playground, and there is parking across Louisiana Street.

Ohio Street Boat Launch is a DEC facility across the street from Father Conway Park, and provides access to the Buffalo River via a hand launch that accommodates canoes, kayaks, and row boats. The park does not currently have a trailer launch for larger motorized boats. It has parking for 15 vehicles.

Mutual Riverfront Park is owned and operated by the New York Power Authority, opened in 2012 at the intersection of South and Hamburg Streets. It takes its name from the historic Mutual Boat Club that was located near the present site in the early 1900s. The park offers a number of amenities, including a museum and concession building, a boat storage facility, a non-motorized boat launch, a fishing overlook, riverfront promenade, and parking. It is adjacent to the site where the NYPA stores the ice boom when not in place.

Red Jacket River Front Park provides 44 acres of open space at the end of Smith Street, and is owned by Erie County and the NFTA. A former rail right-of-way and parking area for Concrete Central employees, it was purchased and remediated by Erie County in the 1990s. It includes a series of nature trails with benches that take visitors through various ecosystems, including marshlands, meadows, forests, and the riparian corridor of the river. Several interpretive exhibits are also located along the trails, detailing the history of Red Jacket, a Seneca chief. There is a kayak launch into the river and overlook areas for bird watching and fishing. A series of murals on the abandoned rail embankments celebrate the industrial, architectural, and natural history of the area.

Bailey Avenue Park is a city-owned two-acre parcel on the north shoreline of the river, just east of Bailey Avenue. Access is through the Communications Workers of America parking lot off Elk Street. It offers passive recreational opportunities and riverfront access.

Water Access

There are a number of water access points, most of which are located within designated parks. Hand launches at Riverfest Park, Ohio Street Park, Mutual Riverfront Park, and Red Jacket River Front Park provide opportunities for active recreation along the river.

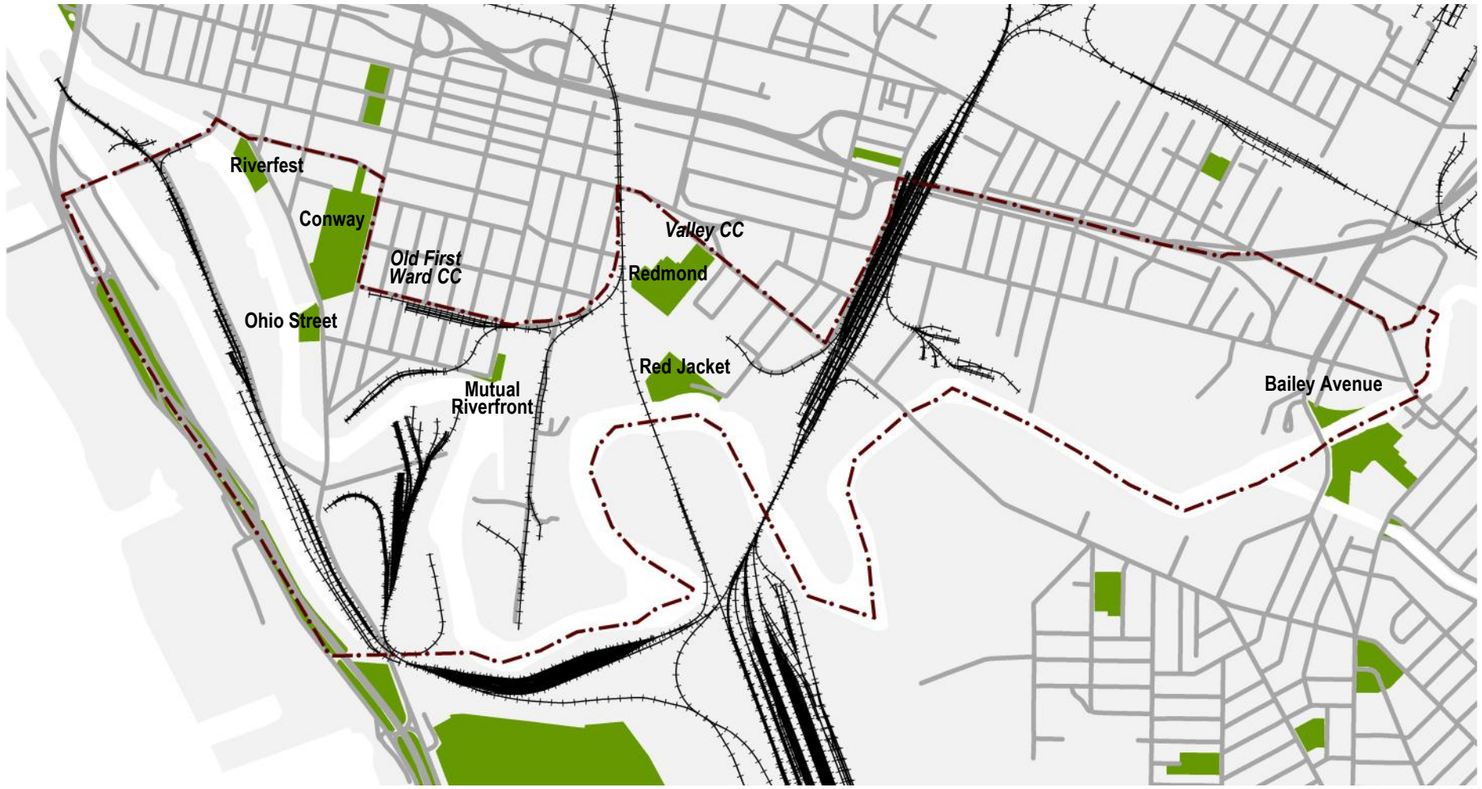
RCR Yachts operates a marina on 14 acres of land along the City Ship Canal. It offers 125 floating boat slips, complete with potable water and electricity for visiting boaters; boat sales and repair services; and winter storage for approximately 300 boats. Marina users primarily access Lake Erie as opposed to the Buffalo River.

The Buffalo Scholastic Rowing Center is located just north of the Ohio Street Park. It is privately-owned, but operated by the Buffalo Scholastic Rowing Association. Completed in 2010, it serves as the base for many of the rowing programs in the Buffalo School District, as well as several adult rowing programs. The center offers a large canvas boat storage facility, and a boat put-in at the historic Ohio Street Canal. [Map 3.12]

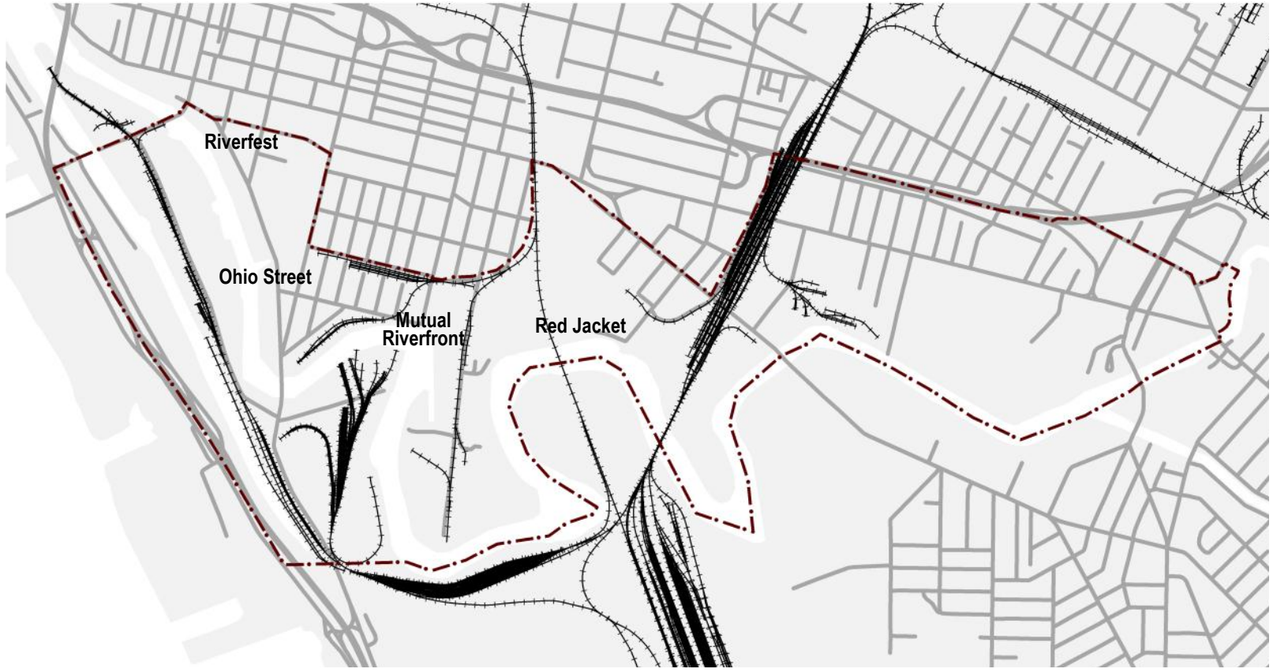
Trails

Designated trails include the Fuhrmann Boulevard Parkway, Red Jacket River Front Park Nature Trail, and the private Buffalo Color Area D Access Trail. Opportunities exist to create an integrated trail system that ties into trails beyond the boundaries of the BOA.

Map 3.11 Parks and open space



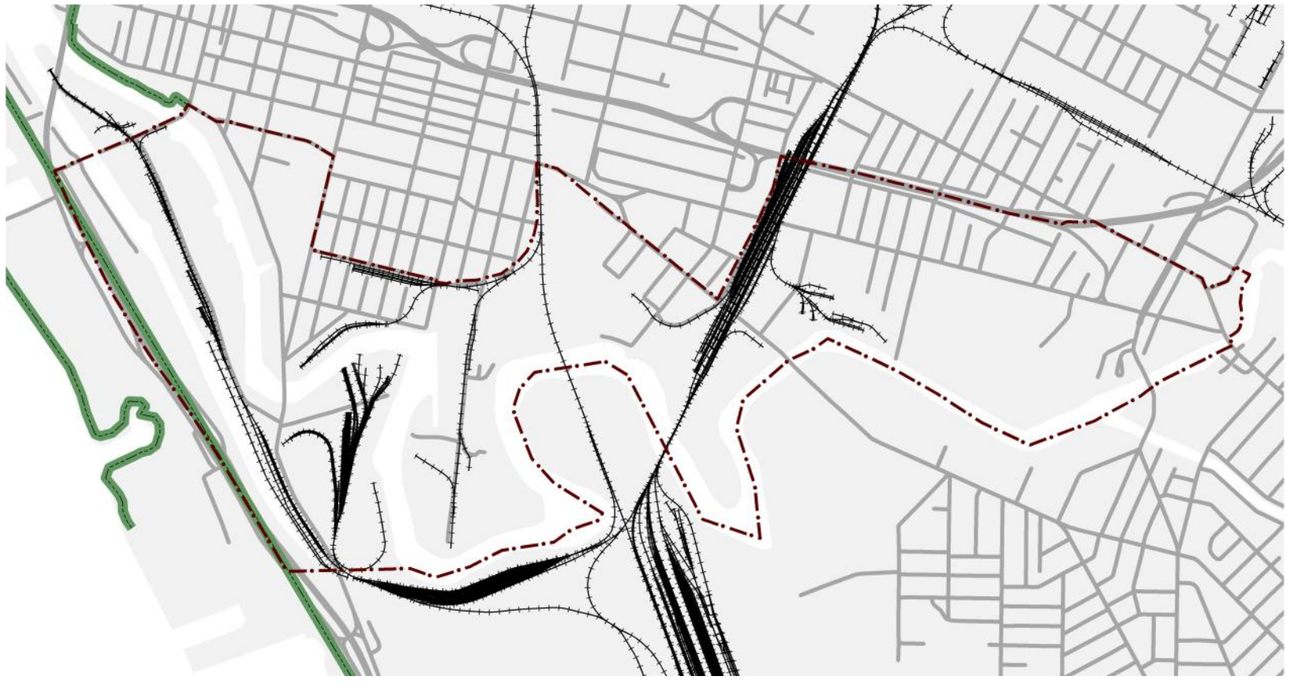
Map 3.12 Water access



The Shoreline Trail currently terminates to the west of Riverfest Park near the intersection of Ohio Street and Michigan Avenue. From this point, it extends north through Buffalo into the Tonawandas, and links up with a spur that runs along Scajaquada Creek to Delaware Park.

Making this short connection, along with one to the south along Ohio Street, would link the BOA to the entire waterfront trail system. Additional proposed trails include the Buffalo River Trail and the Heritage Trolley Line Trail. [Map 3.13]

Map 3.13 Trails



3.5 Archeological and Historical Resources

Archaeological Resources

Locations near the confluence of Buffalo Creek (River) and Little Buffalo Creek would be considered highly sensitive if in non-urban settings. The intensive occupation by heavy industry since the late 1800s has likely disturbed the archaeological record across much of the BOA. Archeologically sensitive areas exist where past disturbances may be minimal or undocumented, such as west of the City Ship Canal and along isolated sections of the river's northern shoreline. Development is not prohibited in these areas, but consideration may be required when a project involves state or federal funding, permitting, or approval.

Historical Resources

There are a number of properties that reflect the area's heritage as a focal point of transshipment and industry. Properties listed or eligible for listing in the State or National Registers of Historic Places are afforded some protection under preservation laws, although development is not strictly prohibited.

The only property currently listed on the S/NRHP is the former E&B Holmes Machinery Company on Chicago Street, which was added in 2009. There are 11 additional properties that are eligible for listing, including seven grain elevators (Great Northern, Spencer Kellogg, Electric, American, Perot, Lake and Rail, and Marine A); three moveable bridges (Ohio Street and two rail); and a transshipment facility (the Truck/Transfer Building).

Among the historic resources, the grain elevators provide a unique opportunity for both reuse and promotion of the area's industrial heritage. They comprise the greatest collection of extant grain elevators in the country; and collectively represent the variety of construction materials, building forms, and technological innovations that revolutionized grain handling. [Map 3.14]

Map 3.14 Historical resources

3.6 Land Use

The BOA covers 888 acres of land, with 134 acres taken up by right-of-way for streets and sidewalks. The remaining 754 acres have been subdivided into a variety of uses. Industrial is the most prevalent, covering almost 40 percent of the net land area. This encompasses a range of activities, such as chemical manufacturing, flour milling, and shipping. [Map 3.15]

Vacant land, which sometimes includes parcels with abandoned structures, accounts for 220 acres, and can be found throughout the BOA. Rail and utilities is the next most prevalent use, covering 14 percent of the land, largely due to the many active and inactive rail lines.

Residential uses account for only 35 acres, or about 5 percent of the land base. Most of this is located in the Old First Ward and Valley neighborhoods, although there are small, isolated pockets of housing scattered throughout the BOA. Although this is a small land use in terms of acreage, there are more residential parcels than any other kind in the BOA. Residential density averages about 10 units per acre, which supports a walkable community.

A distinguishing characteristic of the BOA is its relative discontinuity. The sweeping bends in the Buffalo River, combined with two separate north/south rail lines, make the study area a series of sub-districts rather than an integrated whole.

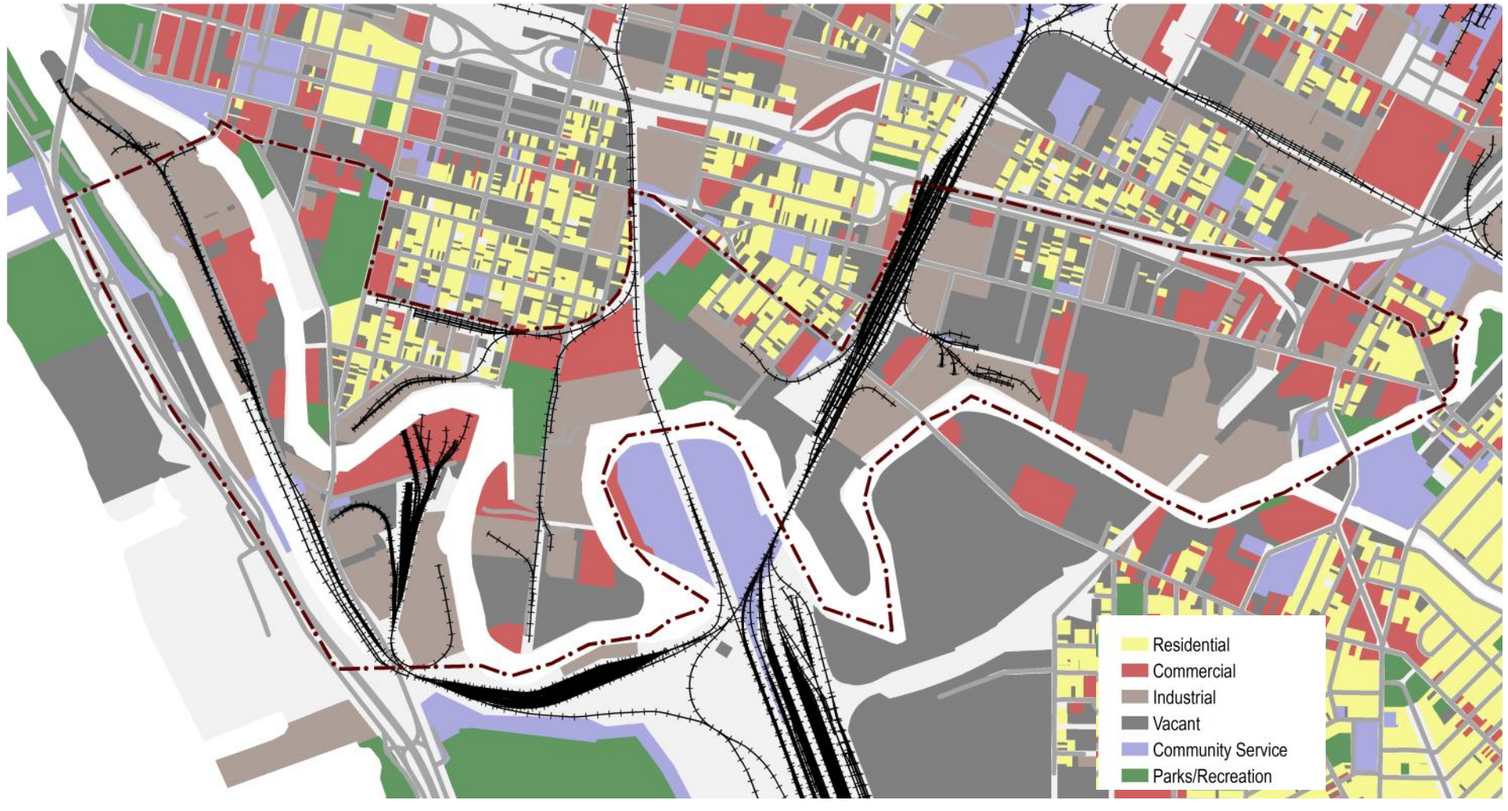
Understanding the distribution and configuration of land ownership within the BOA is essential for making sound reuse decisions. Land ownership can be viewed from two perspectives: public versus private ownership; and large versus small parcels.

The majority of parcels within the BOA are privately-owned, indicating that redevelopment decisions will largely be based on market and financial considerations. Publicly-owned parcels are primarily either dedicated parkland or vacant lots that have been abandoned by prior owners and fallen to the city. Land for street right-of-way comprises another 92 acres; and 190 acres are covered with surface water. [Map 3.16]

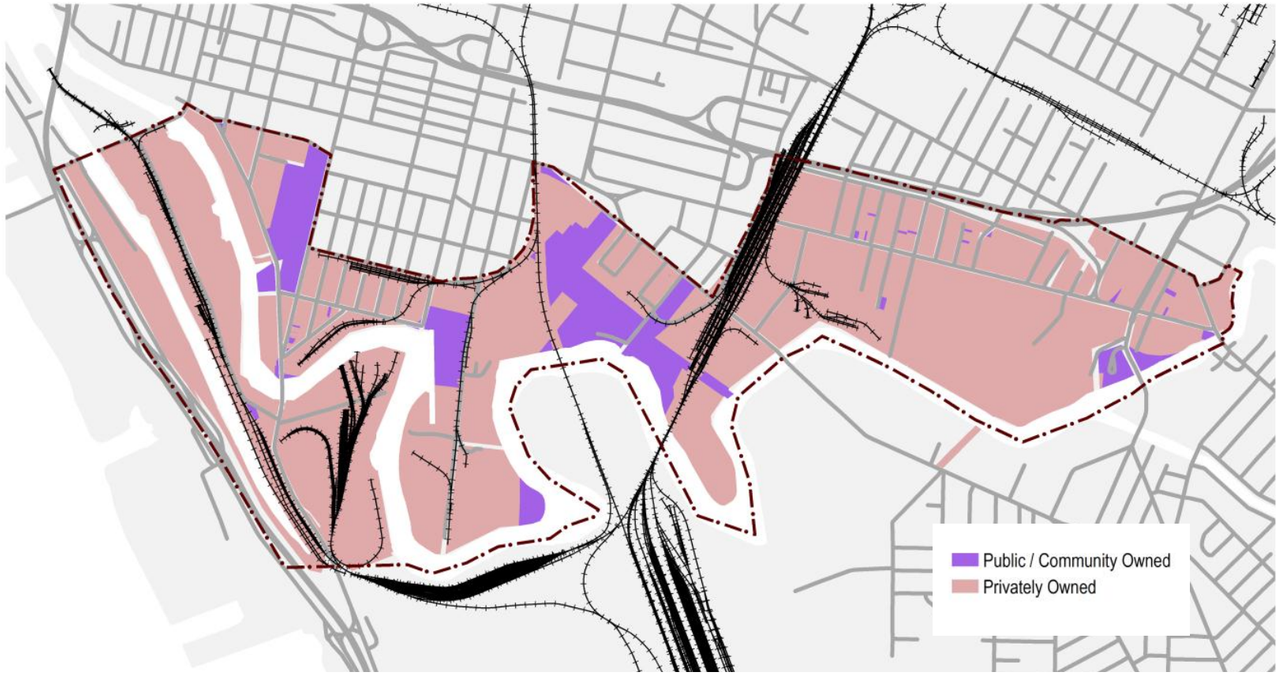
Ownership and control of large parcels can facilitate redevelopment by reducing the need for land assembly. There are three public and 10 private property owners with holdings of 10 or more acres, although some of these parcels are parkland or contain deed restrictions. Combined, these large landowners control over 250 acres, or almost a third of the land in the BOA. [Map 3.17]

	Acres		*Parcels*	
Total	**1,050**			
Water	162	16%		
Right-of-way	134	13%		
Under ownership	754	72%	730	
Residential	35	5%	302	41%
Parks / open space	32	4%	5	1%
Community facilities	6	1%	6	1%
Commercial	73	10%	35	5%
Industrial	285	38%	74	10%
Rail and utilities	103	14%	32	4%
Vacant	220	28%	276	38%

Map 3.15 Land use



Map 3.16 Ownership



The highest concentration of large holdings is the area south of the Elk Street corridor, yet much of this land is not available for immediate redevelopment due to significant environmental constraints. Properties owned by Advance Metals Recycling, Buffalo Creek Property Group, and BOC Group may offer the best potential for a change in use based on their size and location along the riverfront.

Land in small parcels accounts for the remaining 67 percent of the BOA. Most of this land is categorized as either industrial or vacant, and most of the vacant land was previously industrial. Residential land constitutes the greatest number of parcels, but the total acreage is substantially smaller than that covered by industrial and commercial uses.

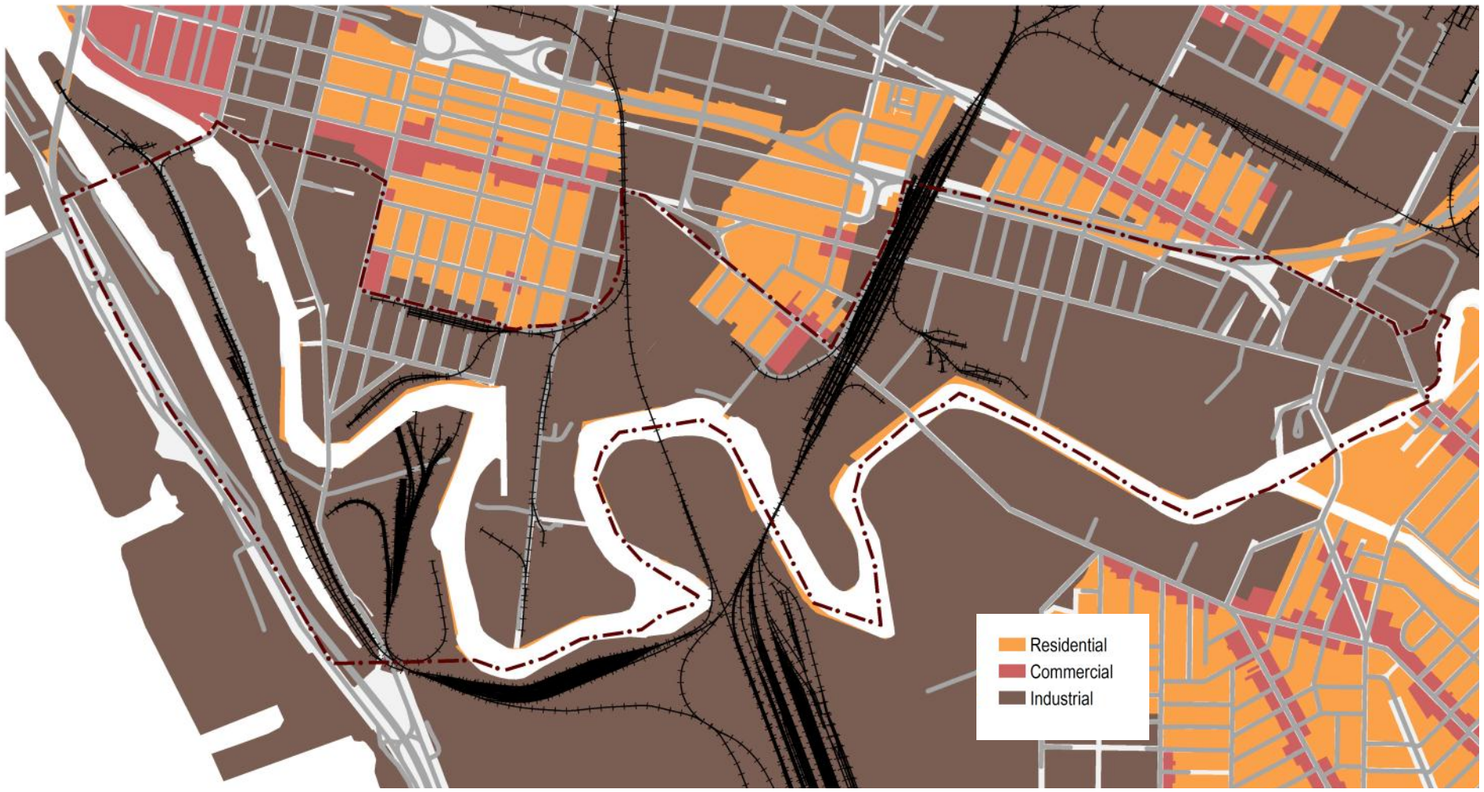
Due to the physical barriers that divide the BOA into distinct sub-districts, and the fragmented pattern of land ownership, the redevelopment of larger parcels is unlikely to have much of an impact on the reuse of smaller parcels. The redevelopment of residential parcels within the Old First Ward and The Valley will likely be influenced by market trends beyond the boundaries of the BOA, where the bulk of these neighborhoods are located.

Zoning within the BOA is dominated by industrial classifications, with over 98 percent of the land currently zoned for such uses. Small residential and commercial zones are located in the Valley, but the rest of the BOA is designated as either M1-Light Industrial, M2-General Industrial, or M3-Heavy Industrial. [Map 3.18]

The majority of land was historically used for industry, and industrial zoning classifications often extended into residential areas to facilitate potential future expansion. With limited prospects for large-scale industrial expansion, the rationale for this policy no longer exists. Areas that have been out of active industrial use for years, or that encroach upon residential neighborhoods, should be re-examined to determine whether the zoning needs to be changed.

Map 3.17 Large parcels

Map 3.18 Current zoning



Key buildings are typically older, former industrial structures that are increasingly providing redevelopment opportunities. These19 structures were identified based on their location, current use, potential for contributing to area -wide revitalization, and anticipated redevelopment potential. [Map 3.19]

Major commercial and industrial facilities generally consist of active industrial operations on properties that may or may not be considered brownfields, and properties that may contain key buildings. These facilities were identified based on active site operations, revenue generated, and employment capacity, and include General Mills, ADM/Pillsbury, Rigidized Metals, Honeywell, Austin Air, and PVS Chemicals. [Map 3.20]

Vacant structures are properties that are either vacant or are not being utilized to their highest potential based on their location, zoning, and level of development. The nine vacant structures within the BOA includes historic grain elevators located along the banks of the Buffalo River that are no longer used to their designed capacity. Several at Silo City, and are strategically located for redevelopment.

Vacant parcels were initially identified through the NYS Office of Real Property Services classification codes, and refined through site evaluations. These sites may have recorded tax arrears or be in foreclosure. Within the BOA, the majority of the 68 vacant sites are concentrated along Ohio, Ganson, Katherine, and Elk Streets. [Map 3.21]

Potential brownfields may consist of active, vacant, or underutilized sites. As defined by the US Environmental Protection Agency, they include any real property where the expansion, redevelopment, or reuse is complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant. Brownfields are generally considered sites where previous operations have impacted the property's environmental integrity. Many times these are large former industrial sites, but they may also include smaller commercial sites such as dry cleaners, gas stations, and auto repair shops. Brownfields can have a variety of adverse impacts on a community—signifying disinvestment, posing environmental and public health threats, and impacting the local economy.

The 58 potential brownfields within the BOA were identified based on a variety of databases, including the NYSDEC's Remediation Site Database, Spills Inventory, and Bulk Storage Facility Database, as well as the USEPA's Envirofacts database. In addition, windshield surveys were conducted to evaluate any apparent recognized environmental concerns that may indicate on-site contamination issues. [Map 3.22]

Brownfield areas consist of both actively used properties as well as vacant and abandoned properties. While vacant and abandoned properties offer greater opportunities in terms of redevelopment, the presence or perceived presence of contamination can impact the ability to redevelop a property due to required remediation, associated costs, and project timing.

Sites listed in one or more of the NYSDEC or EPA databases that have documented contamination issues or that have had environmental studies (Phase I/Phase II Environmental Site Assessments, Remedial Investigations) performed to confirm the presence of contaminants are included as brownfields. Environmental remediation activities have occurred at some of these sites, but contamination may still be present due to the method utilized to remediate the site (such as capping of contaminated sediments).

Among potential brownfield sites, 16 have known contamination. Vacant brownfields are scattered throughout the BOA, but not all are considered strategic from an area-wide redevelopment perspective. Following is a summary description of some key brownfields.

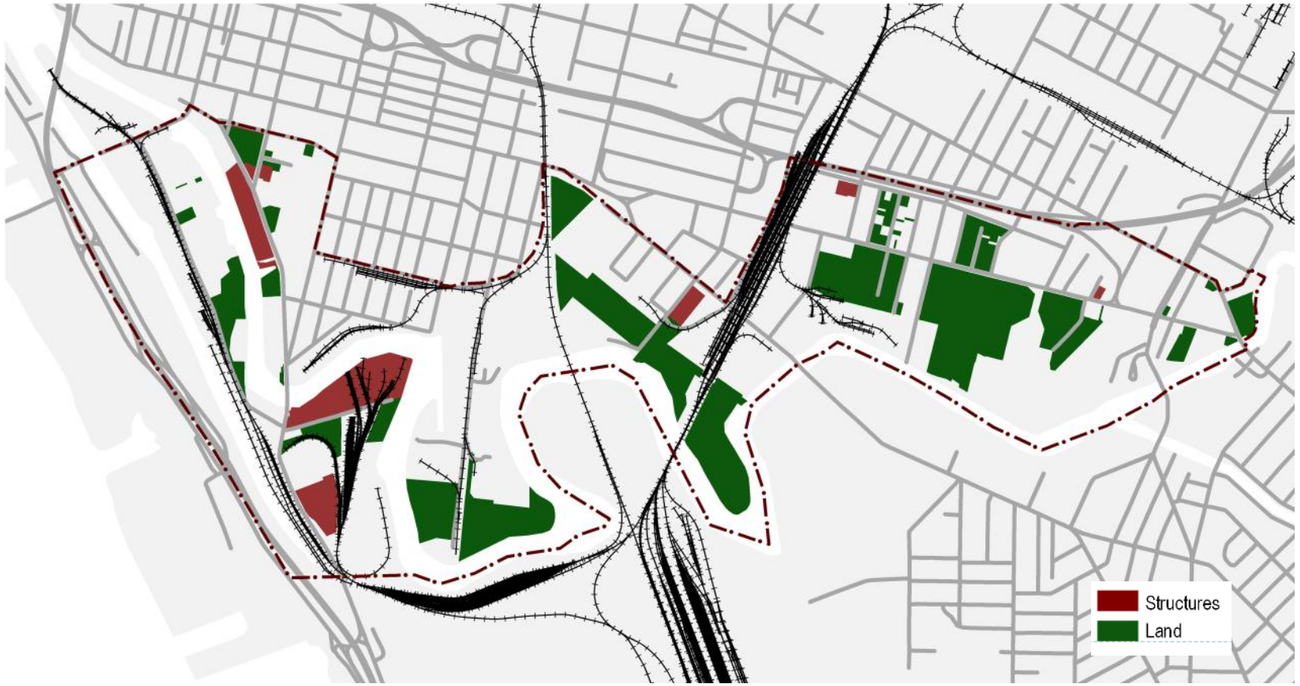
PVS Chemicals is a Class 2 NYSDEC State Superfund site. Since the 1900s, it has been actively used for chemical manufacturing, including the production of sulfuric acid, oleum and ammonium thiosulfate. Between 1930 and 1977, an unlined wastewater lagoon was used primarily for retention of production process waste-water. The installation of monitoring wells in 1982 and completion of Phase I and II Environmental Site Assessments in 1989 determined that contaminants in the lagoon had leached into on -site groundwater. Contaminants also migrated from the into the Buffalo River, impacting bottom sediment with the same chemicals identified in on-site groundwater. The plant remains active today and remedial investigations are ongoing. It is considered a brownfield, but not a strategic site for area-wide planning and redevelopment purposes.

Buffalo Color Areas "A" & "B" are Class A NYSDEC Brownfield Cleanup Program sites, which previously contained numerous process, administrative and maintenance buildings, process equipment, and chemical storage tanks. Site soil and groundwater is contaminated by petroleum, chlorinated solvents, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals. To date, several remedial activities have been undertaken on-site, including the installation of groundwater interceptor/ extraction wells, the installation of a vertical hydraulic barrier around the site, demolition and removal of on-site

Map 3.19 Key buildings

Map 3.20 Major facilities

Map 3.21 Vacant structures and land



Map 3.22 Potential brownfields

buildings, abandonment/plugging of existing process/storm sewers, installation of a new storm sewer system, installation of a site-wide integrated cover system and the filing of an environmental easement limiting future use of the site to commercial/industrial. These sites remain vacant as remediation activities continue.

Buffalo Color Area "D" is located on a peninsula jutting south into the Buffalo River, and is a Class 02 NYSDEC State Superfund Program site. It was part of the historic Schoellkopf/National Analine/Buffalo Color Chemical Dye Plant complex that operated between 1879 and 2003. Operation of the plant resulted in metal sludge, process chemical, petroleum and organic compound contamination to on-site soil and groundwater. After on-site buildings were removed in 1984, remedial activities were undertaken to address soil and groundwater contamination issues. Remedial activities were completed in 1996 and included the installation of a slurry wall and impermeable cap around the contaminated property, extraction and treatment of contaminated groundwater, removal of contaminated sediments from the Buffalo River around the parcel and the installation of erosion protection measures along the bank of the Buffalo River. The property has renaturalized and no future development is expected.

Buckeye Terminal was once part of the Exxon-Mobil facility, and is a Class 03 NYSDEC State Superfund Program site. It was historically used by the city and Exxon-Mobil for dumping municipal waste, demolition debris, tank sediments, sewer sediments, soils containing asphalt, and general refuse. Phase I and II Environmental Site Assessments have identified high concentrations of lead and organic compounds. Remedial actions are currently being conducted under the Brownfield Cleanup Program. The property remains an active transshipment terminal for Buckeye Liquid Petroleum. If it were to be redeveloped, additional investigations would be required to determine whether substantial impacts occurred from operations following the above-referenced remediation activities.

Exxon-Mobil/Panapinto property is a Class A NYSDEC Brownfield Cleanup Program site. It was used continually for petroleum refining and storage between 1880 and 2006 and was significantly contaminated with SVOCs. Initial remediation activities included the removal of over 5,600 tons of contaminated soil, and the removal of 22 miles of subsurface process piping. Ongoing remediation activities will be focused on preventing migration of an existing subsurface contaminant plume. The vacant portions of the property will likely be available for redevelopment after remediation activities are completed.

Safety Kleen operates an active oil recovery facility with 13 petroleum bulk storage tanks on-site. It is a registered Large Quantity Generator of hazardous waste. The site was historically used to store PCB-contaminated waste oil, and was the subject of a 1994 settlement between NYSDEC and the property owner for improper handling of PCB-contaminated waste oil. The property is also the location of 37 registered waste oil spills between 1978 and 2011. Although this site is considered a brownfield, it is an actively operating site and not considered strategic.

Sam's Petroleum Sales & Service is a Class A NYSDEC Brownfield Cleanup Program site, which was used as a gas station and vehicle repair shop until the 1990s. A Phase II Environmental Site Assessment conducted in 2010 confirmed that significant subsurface soil and groundwater contamination has occurred on the property. It is currently undergoing remediation under the Brownfield Cleanup Program.

Sovereign Specialty Chemical is a vacant former chemical manufacturing plant and tank farm that operated between 1924 and 2010, and was primarily involved in manufacturing solvents and adhesives. The property is a Class C NYSDEC Voluntary Clean-Up Program Site. It has historically been contaminated with VOC's such as toluene, methyl ethyl ketone, and xylene. Portions with contaminated soils were excavated and replaced with clean fill. Contaminated soils and groundwater are continuously treated by a high vacuum extraction system and groundwater collection/treatment system that was installed in 2004. The property is currently vacant, and future redevelopment opportunities will be limited by the presence of site development controls, including a Deed Notice, Ground Water Use Restriction, Land-use Restriction, Monitoring Plan, O&M Plan, and Site Management Plan.

Ameristeel is a 19-acre parcel serving as an active motor vehicle junkyard and metal recycling facility. The site contained four large aboveground petroleum bulk storage tanks that have been closed and removed, but seven large tanks remain. The property had a series of hazardous material spills between 1993 and 1999. A large industrial fire in September 2011 resulted in a number of gas tank and vehicle explosions before being brought under control. The property is currently being marketed for sale to another recycling company.

4 STRATEGIES

The analysis of demographic characteristics and market potential, along with the inventory of assets, form the basis for establishing a vision for the Buffalo River Corridor. In undertaking this process, priorities must be set, since some land may not be development ready for many years. To ensure success that ultimately reaches all corners of the BOA, initial efforts need to create critical mass by focusing on targeted areas and strategic locations.

The goal of Step 2 process is to develop an understanding of the BOA's long-term potential, which can then be translated into the city's proposed Land Use Plan and Unified Development Ordinance. These documents will guide the city's development over the next 20 years, and are designed to make long-neglected areas more attractive to investment and redevelopment.

4.1 Alternative Scenarios

As the first step in this process, the consultant team prepared three alternative scenarios for guiding future development within the BOA. These were presented to the public to determine how much support there was for each. This feedback was then used to inform the city's Land Use Plan and Unified Development Ordinance. Public input also assisted with the selection of strategic sites for further study under Step 3 of the BOA process.

To help frame the discussion of the alternative scenarios, a set of visioning directions and emerging principles were prepared:

Visioning Directions

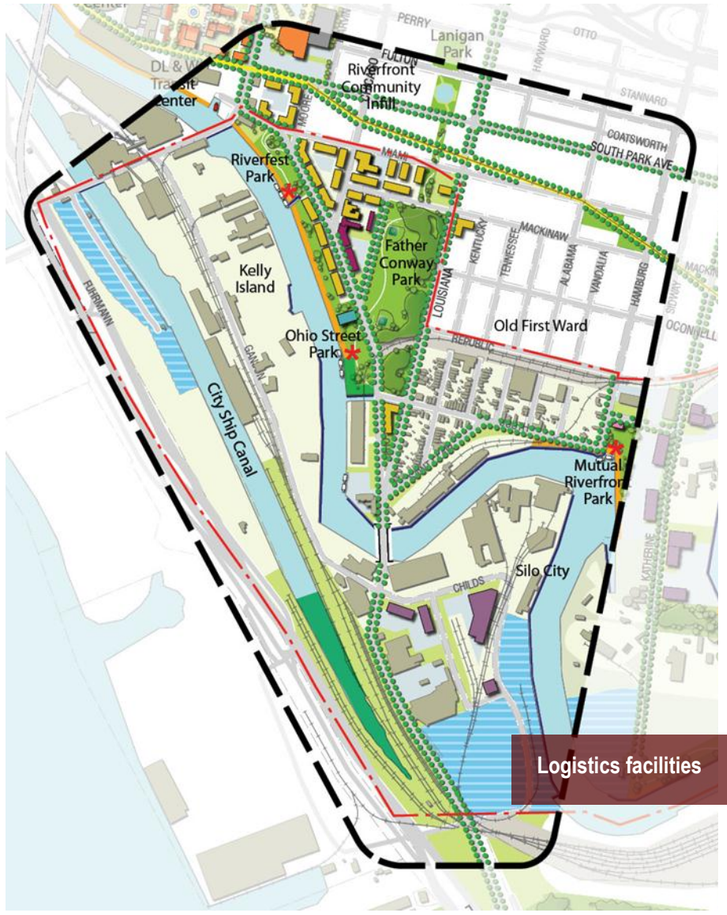
- The residential neighborhoods surrounding the BOA are important and should be strengthened.
- Significant historic resources exist and are a defining characteristic of the area.
- Emerging commercial strips serving local neighborhoods should be encouraged.
- Conflicting land uses have resulted in weakened neighborhood edges, and should be addressed.

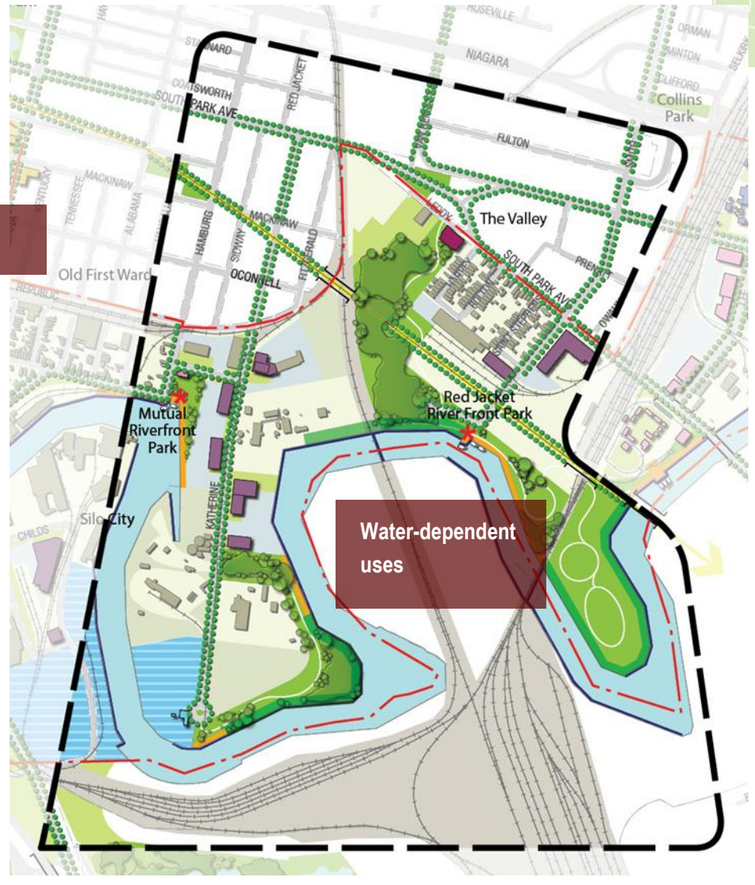
Emerging Principles

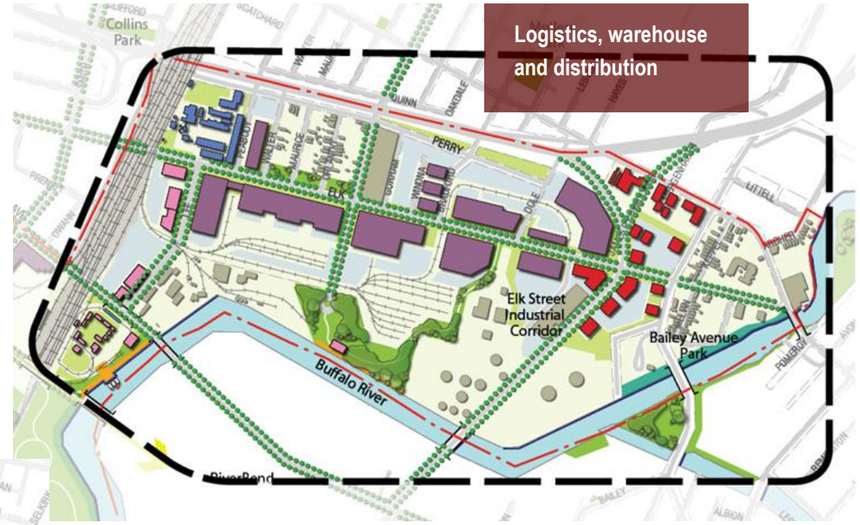
- Restore and enhance the environmental quality of the river and make it an international success story.
- Expand and diversify the role of the river, and position it as an amenity for surrounding neighborhoods, the city, and the region.
- Safeguard the river as a working waterfront and balance the needs of existing water-based employers with emerging interests.
- Enhance waterfront access and reduce isolation within the BOA through new connections.
- Promote quality place-making by creating waterfront communities and business districts and attractions.

Land and Water Based Logistics Scenario

- Rail, water, and transportation infrastructure creates logistics opportunities; and key waterside locations are preserved for water -dependent uses
- Park and river access improvements
- Modest riverfront community infill
- Trail development along former DL&W right-of-way
- Aquatic habitat restoration at key locations


Lanigan Park
Future Riverfront Community Infill
DL & W Transit Center
Riverfest Park
Father Conway Park
Kelly Island
Ohio Street Park
Old First Ward
City Ship Canal
Mutual Riverfront Park
Silo City
Logistics facilities


Collins Park
The Valley
Old First Ward
Mutual Riverfront Park
Red Jacket River Front Park
Silo City
Water-dependent uses

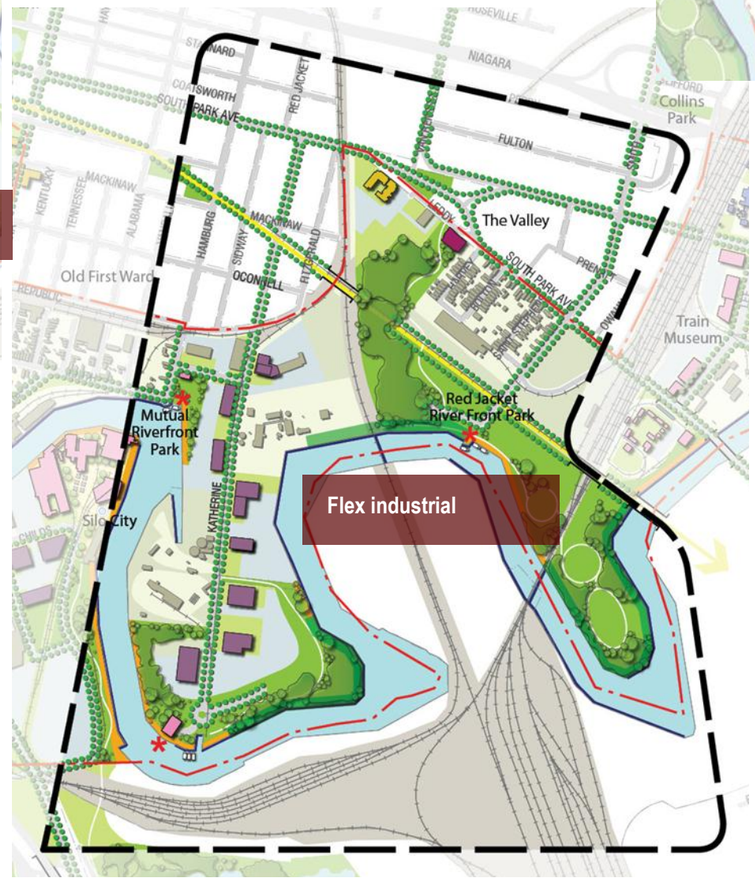

Logistics, warehouse and distribution
Collins Park
Elk Street Industrial Corridor
Bailey Avenue Park
Buffalo River

Industrial Expansion and Diversification Scenario

- Builds on existing Elk Street Corridor Plan to accommodate a greater range of industrial uses, including flex industry
- Abandonment of waterside locations for water-dependent uses
- Riverside community infill
- Greater level of recreational and open space amenity
- Silo City provides a unique waterfront event and cultural destination


Riverfront Community Infill
Riverfest Park
Father Conway Park
Kelly Island
Ohio Street Park
Old First Ward
City Ship Canal
Mutual Riverfront Park
Silo City
Flex industrial

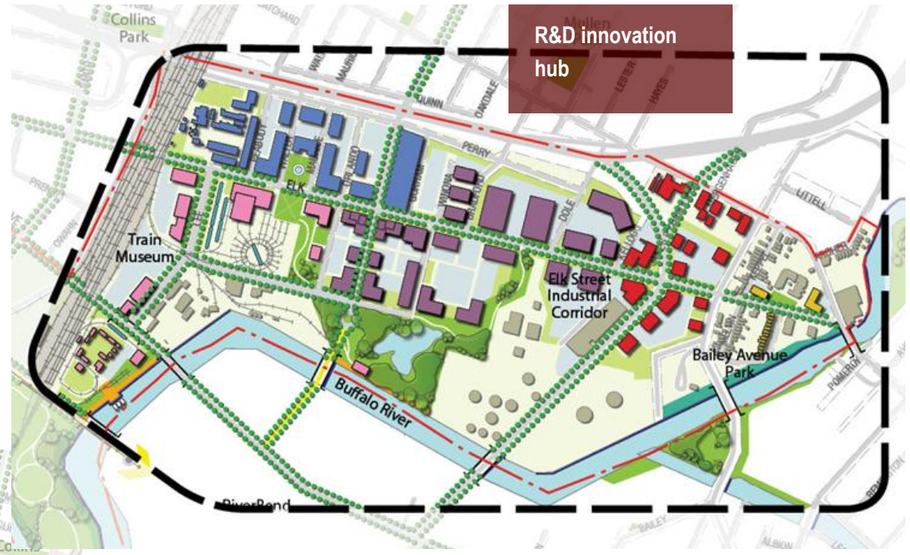

Warehousing and manufacturing
Train Museum
Elk Street Industrial Corridor
Bailey Avenue Park
Buffalo River

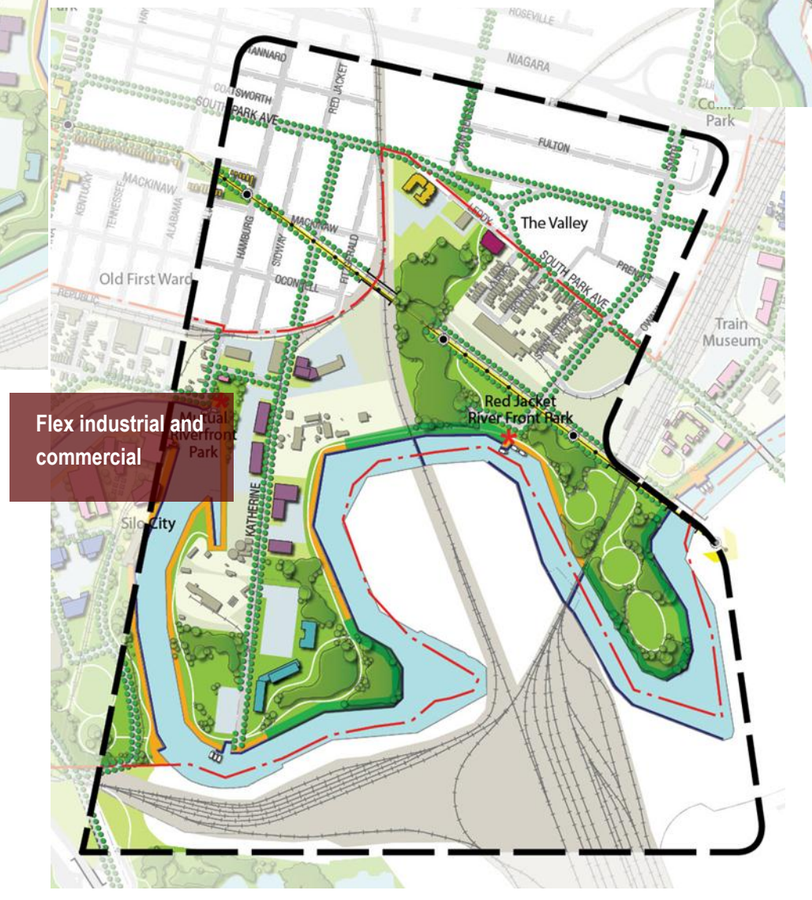

The Valley
Old First Ward
Mutual Riverfront Park
Silo City
Red Jacket River Front Park
Train Museum
Flex industrial

Employment, Recreational and Cultural Scenario

- Greatest employment diversification
- Heritage Discovery District and Innovation Park complement existing Elk Street industrial uses
- Katherine Street boating and marine hud
- Riverside community infill, and development of former DL&W right -of-way as transit corridor
- Park and waterfront access, and expansion of Silo City as cultural attraction


Waterfront access
Riverfront Community Infill
Lanigan Park
Riverfest Park
Kelly Island
Father Conway Park
Ohio Street Park
Old First Ward
City Ship Canal
Mutual Riverfront Park
Silo City
COATSWORTH
SOUTH PARK AVE
MACKINAW
LOUISIANA
REPUBLIC
OTTO
STANNARD
KATHERINE


R&D innovation hub
Collins Park
Train Museum
Elk Street Industrial Corridor
Bailey Avenue Park
Buffalo River
PERRY
ELK
LITTELL


Flex industrial and commercial
The Valley
Red Jacket River Front Park
Train Museum
Old First Ward
Silo City
Mutual Riverfront Park
FULTON
NIAGARA
SOUTH PARK AVE
MACKINAW
COATSWORTH
STANNARD
HAMBURG
KATHERINE
REPUBLIC

4.2 Community Feedback

Highlights from the input provided by residents who attended the open house include:

- Strong support for restoration of riparian habitats – at the foot of Kelly Island, on the Katherine Street Peninsula, and at other locations along the Buffalo River.
- Clear favor for Ohio Street as a strategic corridor both for the Old First Ward and as a connection between the Outer Harbor and Downtown. Housing, mixed-use development, and improvements to the public realm were all key elements of that vision.
- A mix of views on the reuse of the "Del" – a former rail right-of-way bisecting the Old First Ward. Some favored it as a multi-use trail, others as a transit route.
- Little attention to alternative concepts for the Elk Street corridor.
- "Industrial Expansion and Diversification" was the most favored scenario with 60 percent of votes; but the key to this support was expanded recreation and access, rather than industry.
- Both "Land and Water Based Logistics" and "Employment, Recreational and Cultural" were favored by 20 percent of participants.

	Land and Water Based Logistics	*Industrial Expansion & Diversification*	*Employment, Recreational & Cultural*
Likes	Habitat restoration	Ohio Street public realm improvements	Katherine Street boating center
	Water-dependent uses along riverfront	Katherine Street park	Ohio Street mixed-use
	Multi-use trails on former rail corridors	Residential infill in neighborhoods	Red Jacket Park expansion
	Ohio Street residential	Silo City cultural attractions	Rail / trolley extension
	Elk Street logistics	Elk Street corridor	Elk Street distribution hub
	Residential infill in neighborhoods	Pedestrian bridge to South Buffalo	New bridges
	Red Jacket Park expansion	Multi-use trails on former rail corridors	Expanded R&D cluster
	Katherine Street water-dependent uses	Train museum	Residential connecting OFW to downtown
Dislikes	Industrial uses on Katherine Street	Industrial uses on Katherine Street	Buildings on river side of Ohio Street
	Residential infill along riverfront	Non-water dependent uses	
	Industrial infill	Industrial uses at Silo City	
	Water-dependent uses		

4.3 Land Use and Zoning Recommendations

As the final component of the Step 2 process, the consultant team and city took the community feedback that was provided for the alternative scenarios, and translated these into land use and zoning recommendations. These represent the core elements of Buffalo's proposed Green Code, which employs a place-based planning approach to address issues of form and character.

In addition to the public input received during the BOA process, nearly 1,000 residents attended separate Green Code meetings that were held at various locations throughout the city. The resulting land use and zoning recommendations reflect this input, along with the city's existing and desired development character, and the market trends that drive investment.

The land use and zoning recommendations proposed for the BOA will provide guidance for the next 20 years. These designations generally offer more flexibility than the existing zoning. The Green Code is designed to lay the foundation for future development, so that the market can determine what investments make sense and where, within the parameters agreed upon by the community.

It is expected that this approach will be more adaptable and encourage greater levels of private investment. The result of this planning process will be a Tonawanda Street Corridor that balances its remaining manufacturing sites with emerging employment, recreational, and natural uses that will increasingly drive its future.

Place-Based Planning

The conventional approach to land use planning and zoning divides places into mutually exclusive single-use zones. Place-based planning takes a different approach by addressing form and character, recognizing that great places typically have a mix of uses—residential, retail, office, civic, recreational, and natural—that make neighborhoods lively, interesting, and safe.

To initiate this planning process, historic development patterns were evaluated in the Tonawanda Street Corridor and across the city. Legal records indicated when different areas were subdivided and developed, and property maps showed street patterns and lot sizes. Windshield surveys then provided measurements of development character such as building setbacks and heights, uses, design characteristics at an even greater level of detail.

The existing neighborhood fabric—buildings, parks, streets—provides the foundation for future development, and was an important factor in assigning place types. The proposed place types were ultimately determined by a combination of three factors: what existed in the past, what is there now, and what residents indicated they wanted their neighborhoods to become.

Buffalo's land use pattern is built around three distinct place types:

Neighborhoods are locations with a mixture of homes and businesses that are generally compact and walkable; support a mix of activities and a range of housing types; have streets that accommodate pedestrians, bicycles, and motor vehicles; and place priority on creating public space and locating civic buildings.

Neighborhoods are identifiable by their intensity. Characteristics such as building type and height, lot occupancy, and the mix of uses can be measured to provide an understanding of the different types of neighborhoods where we live, work, and play—going beyond simply how land is used.

Buffalo's neighborhoods are divided into four basic types, familiar to residents because they are based on existing neighborhood character. They developed during different eras in the city's history and have evolved over time, ranging from old to new, dense to open.

- Downtown neighborhoods house a range of uses—offices, shops, restaurants, theaters, and apartments—with structures that are built to the sidewalk. They work best when there is activity on the ground floor that attracts pedestrians and keeps streets safe. Examples include the Central Business District and secondary employment centers such as the Larkin District and Niagara Street in Upper Rock.
- Central neighborhoods are Buffalo's oldest, first developed in the 1800s and mostly adjacent to downtown and the waterfront. The lots are small—typically 25 to 35 feet wide. Homes are close together and setbacks from the street mini-

mal. Mixed-use, walkable centers are dense and have an array of uses in smaller buildings. Examples include Black Rock, Fruit Belt, and Old First Ward.

- Streetcar neighborhoods were developed along streetcar lines at the turn of the 20th century, have strong mixed-use centers at their cores, and are located near the outskirts of the city. These neighborhoods have slightly larger lots—typically 35 to 50 feet wide. Homes have more space between them with deeper setbacks, and building heights rarely exceed three stories. Examples include Kaisertown, Riverside, and University Heights.

- Edge neighborhoods are characterized by large lot sizes, spacious front yards, and single-family homes, often developed around parks and parkways. While they contain no retail activity, they are usually within walking distance of denser neighborhoods with a mix of commercial uses. Examples include Central Park, Kensington Heights, and Rebecca Park.

Districts are single-use areas such as employment centers or green spaces, where development patterns were created specifically for that use. There are three basic types, each with a pre-dominant use. Although districts are often separate from the prevailing street grid, their structure parallels the adjacent neighborhoods, sometimes with an identifiable focus that provides orientation, identity, and clear boundaries.

- Open space districts include natural conservation areas such as Tifft Nature Preserve; the Olmsted Park and parkway system; parks such as Unity Island and Tow Path; and civic spaces such as Market Square Park.

- Campus districts can be residential, medical, or educational. They function separately from surrounding activities, and are often served by an internal circulation system apart from the adjacent street grid. Examples include Shaffer Village, Marine Vista, Erie County Medical Center, and Buffalo State College.

- Employment districts include auto-oriented shopping centers, office parks, and light and heavy industrial facilities. They are often separated from, but within walking or transit distance of, residential neighborhoods. Examples include Delaware Consumer Square, the Free Trade Zone, and Aurubis.

Corridors are linear connections that form the borders of and connect neighborhoods and districts. Corridors are composed of natural and man-made components, including waterways, trails and green spaces, limited access highways, and rail lines.

- Transportation corridors have long been organizing elements for the city, serving as both connectors and boundaries that define neighborhoods. Examples include active rail lines and the Metro Rail.

- Waterfront corridors are bodies of water that connect neighborhoods, industrial areas, and employment centers. They also define the edges of neighborhoods and give identity to the city. Examples include Lake Erie, the Buffalo and Niagara Rivers, Black Rock Canal, and Scajaquada and Cazenovia Creeks.

Proposed Place Types

By applying these place-based planning principles, the entire city was mapped by place type. All of the city's 90,000 parcels (including over 700 in the Buffalo River Corridor) were assigned a specific place type. This allowed residents and stakeholders to establish tailored goals for each, while encouraging mixed-use places with a combination of functions—the foundation for creating walkable neighborhoods and employment centers.

The Buffalo River Corridor BOA will remain dominated by employment uses – primarily light and heavy industrial. There is very little residential within the BOA, but parts of two established neighborhoods – the Old First Ward and Valley – which are largely zoned as manufacturing under the existing zoning, will be preserved as mixed-use neighborhoods to protect them from future encroachment.

Kelly Island on the west side of Ganson Street will be zoned heavy industrial, to protect the existing operations of General Mills and ADM/Pillsbury. The east side of Ganson will largely be light industrial, to recognize the transitions that have begun with the development of RiverWorks and investments that are taking place across the Buffalo River along Ohio Street.

The Ohio Street corridor has been zoned to permit fairly intensive mixed-use development, to take advantage of its emerging role as a primary connection between downtown and the Outer Harbor.

Silo City will remain light industrial, which will provide the flexibility to accommodate a variety of uses. The Katherine Street peninsula is divided between light and heavy industrial, based on the needs of long-term occupants and the potential for conflicts and poor access if portions were zoned for additional open space.

N-1D: Downtown Hub
Within walking distance of Main Street, and directly accessible to Metro Rail service and several Metro Bus lines.
Able to support high densities, with building heights that exceed the width of the adjacent right-of-way. New construction should be at least four stories, to protect the scale and character of the neighborhood and support a range of transportation options.
Appropriate for an intense mix of residential and commercial uses, to encourage all-day pedestrian activity as the regional center.
On blocks of between 200 and 400 feet.
N-1C: Mixed-Use Core
Accessible to either Metro Rail or more than two high-frequency Metro Bus lines.
Able to support higher densities, with building heights that match the width of the adjacent right-of-way. New construction should be at least two stories, to protect the scale and character of the neighborhood and support a range of transportation options.
Appropriate for an intense mix of residential, commercial, and industrial uses, to encourage pedestrian activity.
On blocks of between 200 and 400 feet.
N-1S: Secondary Employment Center
Accessible to least one high-frequency Metro Bus line.
Located in an industrial heritage area of significant density, with warehouses and factories developed in clusters adjacent to rail or water shipping routes.
Able to support high densities, with building heights of up to six stories.
Occupied by industrial structures that are appropriate for redevelopment into an intense mix of industrial, commercial, and residential uses.
Amenable to design standards contributing to the reuse of heritage structures, without imposing an unreasonable burden on industrial uses.
On blocks of up to 1,200 feet.

N-2C: Mixed-Use Center

Accessible to at least one high-frequency Metro Bus line.

Located along a neighborhood main street, characterized by small-scale, mixed-use buildings placed close to the sidewalk and designed for pedestrian access.

Able to support density at a human scale, with buildings of up to four stories. New construction should be at least two stories, to protect the scale and character of the neighborhood and support a range of transportation options.

Appropriate for development as a consistent streetscape of pedestrian-oriented shop fronts.

Amenable to design standards promoting walkability to attract pedestrian activity and boost retail sales.

On blocks of between 200 and 400 feet.

N-2E: Mixed-Use Edge

Accessible to at least one Metro Bus line.

Located at less intensely developed areas, where a diverse set of building types and setbacks reflects a mixed residential and commercial character.

Able to offer a transition between a neighborhood main street and principally residential areas.

Able to support density at a human scale, with buildings of up to four stories.

Amenable to design standards promoting walkability, while providing flexibility to respond to a more residential context.

On blocks of up to 800 feet.

N-2R: Residential

Located in a predominantly residential area with a variety of housing options (single-family to multi-family), occasional civic structures (schools, places of worship), and mixed-use buildings on corner lots.

Able to support density at a human scale, with buildings of up to three stories (four stories along frequent transit routes).

On lots of between 18 and 60 feet.

On blocks of up to 800 feet.

N-3C: Mixed-Use Center

Accessible to at least one high-frequency Metro Bus line.

Located along a neighborhood main street, characterized by small-scale, mixed-use buildings placed close to the sidewalk and designed for pedestrian access.

Able to support density at a human scale, with buildings of up to three stories. New construction should be between one and three stories, to protect the scale and character of the neighborhood and support a range of transportation options.

Appropriate for development as a consistent streetscape of pedestrian-oriented shop fronts.

Amenable to design standards promoting walkability to attract pedestrian activity and boost retail sales.

On blocks of between 200 and 400 feet.

N-3E: Mixed-Use Edge

Accessible to at least one Metro Bus line.

Located at less intensely developed areas, where a diverse set of building types and setbacks reflects a mixed residential and commercial character.

Able to offer a transition between a neighborhood main street and principally residential areas.

Able to support density at a human scale, with buildings of up to three stories.

Amenable to design standards promoting walkability, while providing flexibility to respond to a more residential context.

On blocks of up to 800 feet.

N-3R: Residential

Located in a predominantly residential area with a variety of housing options (single-family to multi-family), occasional civic structures (schools, places of worship), and mixed-use buildings on corner lots.

Able to support density at a human scale, with buildings of up to three stories.

On lots of between 30 and 75 feet.

On blocks of up to 800 feet.

N-4-30: Single Family

Located in a predominantly single-family residential area, with occasional civic structures and no mixed-use or commercial buildings.

Able to support density at a human scale, with buildings of up to three stories.

On lots of between 30 and 75 feet.

On blocks of up to 800 feet.

N-4-50: Single Family

Located in a predominantly single-family residential area, with occasional civic structures and no mixed-use or commercial buildings.

Able to support density at a human scale, with buildings of up to three stories.

On lots of at least 50 feet.

On blocks of between 800 and 1,200 feet.

D-OS: Square

Intended for a formal public square, designed as a largely hardscape area.

Less than two acres.

Appropriate for an intense mix of civic and commercial uses, to support a lively public realm.

D-OG: Green

Intended for a formal civic green, often identified as a public park.

Appropriate for some civic and commercial uses, in support of its primary use as a public space.

D-ON: Natural

Intended to be set aside as protected areas principally used for the conservation of natural habitat.

At least a quarter acre.

Characterized by wetlands, flood plains, or sensitive habitats.

Inappropriate for intensive use by the public, and appropriate only for passive recreation that is compatible with natural habitat.

D-R: Residential Campus

Located in a predominantly residential area, usually under single ownership, with occasional civic and commercial uses that support campus residents.

Able to support a range of building types and heights.

On blocks of up to 1,200 feet.

D-E: Educational Campus

Located within an integrated college or university campus with clearly defined boundaries.

Directly accessible to Metro Rail or at least one high-frequency Metro Bus line.

Able to support high densities, with buildings of up to six stories (12 stories with special review).

Appropriate for an intense mix of residential and commercial uses to support campus development.

D-M: Medical Campus

Located within an integrated medical or research campus with clearly defined boundaries.

Directly accessible to Metro Rail or at least one high-frequency Metro Bus line.

Able to support high densities, with buildings of up to six stories (16 stories with special review).

Appropriate for an intense mix of residential, commercial, and industrial uses to support campus development.

D-S: Strip Retail

Located at a highway interchange or along a major arterial with little or no on-street parking.

Developed for large-scale retail establishments that draw upon markets beyond the immediate neighborhood.

Appropriate for an intense mix of residential and commercial uses, but not for industrial uses.

Over 10,000 square feet in area, and more than 200 feet deep.

On blocks of up to 1,200 feet.

D-C: Flex Commercial

Located at a highway interchange, along a major arterial with little or no on-street parking, or along a truck route.

Identified as an appropriate transition area between industrial and residential zones.

Appropriate for a mix of uses, including industrial in some cases.

Over 10,000 square feet in area, and more than 200 feet deep.

On blocks up to or exceeding 1,200 feet.

D-IL: Light Industrial

Appropriate for light industrial uses.

Accessible to a truck route, rail or water

Over 10,000 square feet in area, and more than 200 feet deep.

On blocks up to or exceeding 1,200 feet.

D-IH: Heavy Industrial

Appropriate for heavy industrial uses, without reasonable likelihood of producing conflicts with established uses nearby.

Buffered from residential neighborhoods by either distance or a rail, highway, or water barrier.

Accessible to a truck route, rail or water.

Over 10,000 square feet in area, and more than 200 feet deep.

On blocks up to or exceeding 1,200 feet

C-R: Rail

Owned by an entity that actively provides intercity freight or passenger rail service, or that previously provided service but maintains importance as a rail link.

Considered critical to supporting transportation access, and set aside and protected exclusively for that use.

Elk Street is also divided between light and heavy industrial. Between Elk and the river, parcels are zoned for heavy industry, in recognition of existing occupants and the limited potential for cleaning these sites to accommodate residential or commercial development, or active open space uses.

Some of the residential streets that run north/south between Elk and the I-190, with limited amounts of housing left, have been rezoned to light industrial to allow for future expansion of employment uses as these neighborhoods continue to empty out.

A small area near the intersection of Elk and Bailey, and with frontage on Seneca Street, has been dedicated to strip retail, to take advantage of proximity to I-190 interchanges at Elk and Seneca.

Finally, open space has been identified and formally designated throughout the BOA, to take advantage of key waterfront locations, and to allow previously contaminated lands to regenerate naturally. [Map 4.1]

Figure 4.1 Select place-type characteristics

- Kelly Island is mapped D-IL and D-IH
- Residential areas of the Old First Ward are mapped N-2R
- Residential areas of the Valley are mapped N-3R
- Red Jacket Riverfront Park, Riverfest Park, and the vacant DL&W rail corridor are mapped D-OG
- Industrial land along the Buffalo River is mapped D-IL and D-IH

Map 4.1 Proposed place types