



Metro Amherst-Buffalo Corridor Alternatives Analysis

TASK 7 EXISTING AND FUTURE ENVIRONMENTAL CONDITIONS TECHNICAL MEMORANDUM

Prepared for:
Niagara Frontier Transportation Authority (NFTA)



Niagara Frontier Transportation Authority

Prepared by:
AECOM USA, Inc.
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1.0 INTRODUCTION

The Federal Transit Administration (FTA) and the Niagara Frontier Transportation Authority (NFTA), in partnership with the Greater Buffalo-Niagara Regional Transportation Council (GBNRTC), have initiated the preparation of an alternatives analysis (AA) study to evaluate transit service alternatives for the Amherst-Buffalo corridor.

The purpose of the proposed project is to provide a fast, reliable, safe, and convenient transit ride in the Amherst-Buffalo Corridor linking established and emerging activity centers along the existing Metro Rail Line in the City of Buffalo with existing and emerging activity centers in the Town of Amherst. The project is intended to better serve existing rail and bus riders, attract new transit patrons, improve connections to/from Buffalo and Amherst, and support redevelopment and other economic development opportunities. Importantly, it should serve to improve livability by increasing mobility and accessibility in communities throughout the project corridor. The project is intended to:

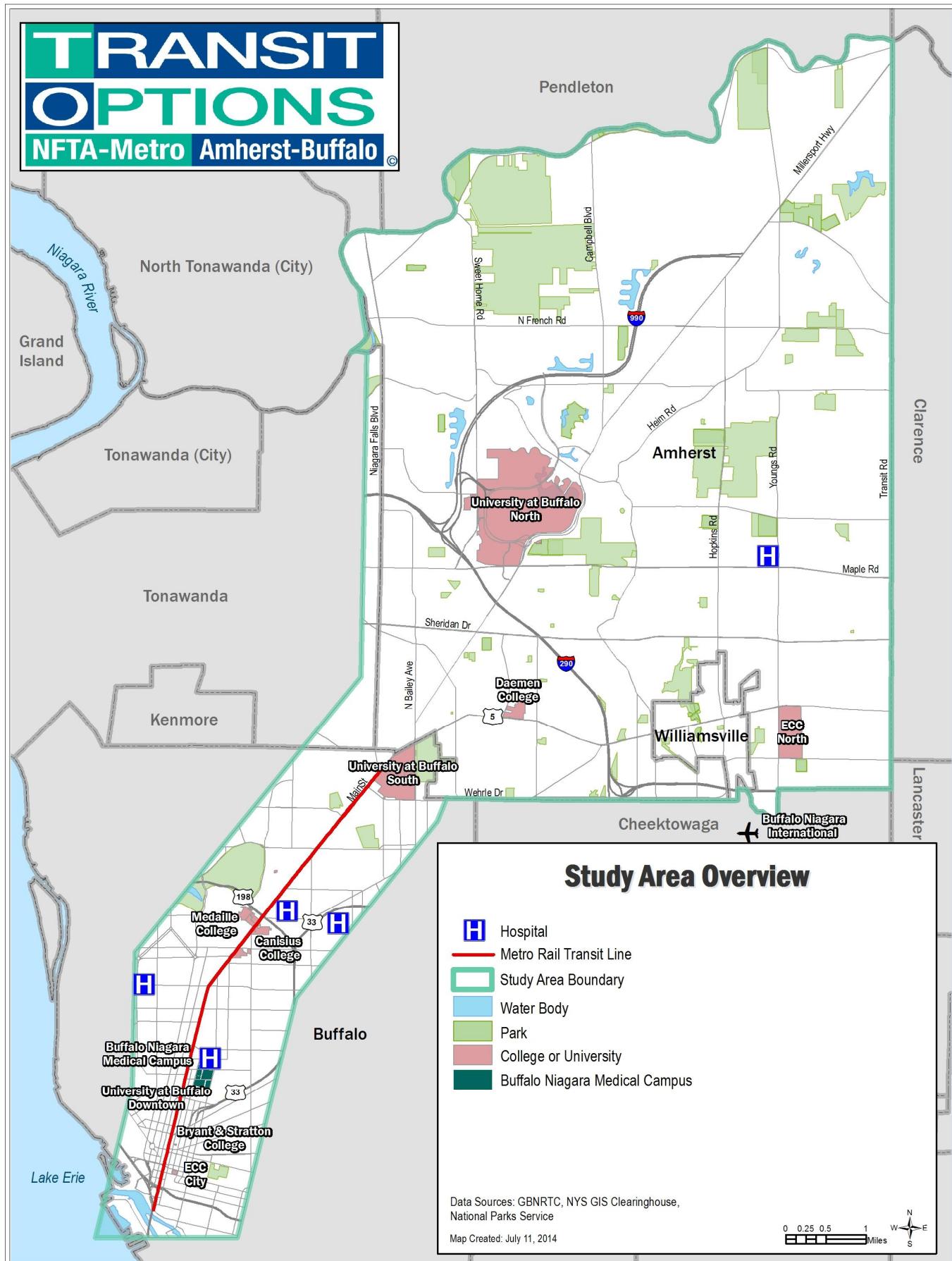
- Serve increased travel demand generated by new development in downtown Buffalo and in Amherst.
- Provide high-quality transit service to and from key activity centers in the Amherst-Buffalo Corridor by providing a time-efficient transit option connecting and serving key destinations in the corridor (University at Buffalo (UB) campuses, Buffalo Niagara Medical Campus (BNMC), the Buffalo central business district (CBD), business parks, the Buffalo waterfront, among others).
- Better serve transit-dependent population segments and improve opportunities for participation of the workforce in the overall regional economy.
- Improve the system operating efficiency of the transit network.
- Support local and regional land use planning and transit-oriented design.
- Provide social benefits from transit investment that supports an array of economic and affordable housing development.
- Help meet the sustainability goals and measures as contained in state, regional, and local plans (One Region Forward-The Regional Plan for Sustainable Development, Buffalo Niagara 2050 - the Metropolitan Transportation Plan of the Greater Buffalo-Niagara Regional Transportation Council, Erie and Niagara Counties Framework for Regional Growth, the University at Buffalo 2020 Plan, the Western New York Regional Economic Development Council's (WNYREDC) Economic Development Strategic Plan , the City of Buffalo Comprehensive Plan, and the Town of Amherst Comprehensive Plan, among others).
- Help relieve parking constraints and capacity issues on the Buffalo Niagara Medical Campus and surrounding downtown area to minimize traffic and parking-related impacts on neighborhoods.

In 2010, NFTA updated their 2001 Strategic Assessment. The review examined both available exclusive rights-of-way and existing major arterial corridors as possible locations for major, new transit investments. The study identified four corridors as candidates for future major investment. The Amherst-Buffalo corridor was recommended as a promising candidate for further study.

The Amherst-Buffalo study area is marked by high transit usage and contains a large number of residents who do not own a vehicle. The NFTA Metro Rail line, contained within the study area, provides fast and reliable rail transit service along a radial (north-south) route that passes through the corridor to/from downtown Buffalo. By contrast, the NFTA Metro Bus service within the study area, especially the Amherst portion, is more limited in terms of frequency and span of service and of lower quality in terms of speed and reliability. Bus service is available, but it is not optimal because it operates in traffic on a congested roadway network and reliability is also affected during winter weather conditions. In addition to the NFTA, the University at Buffalo also provides bus service in the corridor through a private provider and this often requires that patrons transfer between routes and providers to reach their destinations.

Figure 1 is an overview map of the study area. The study area extends from downtown Buffalo along the existing Rapid Transit line and includes all of Amherst and a small section of Tonawanda along Niagara Falls Boulevard.

Figure 1 Study Area Overview



2.0 EXISTING CONDITIONS

The existing conditions of the built and natural environment within the Amherst-Buffalo corridor study area are presented in this section. Documented existing conditions provide the basis for projecting future conditions, which in turn establish the context within which transit options would be developed and evaluated. Resource topics are divided into four broad categories for discussion – land use and development, demographic and socioeconomic characteristics, transportation, and environment. For some of the analyses, the study area is divided into two sections to highlight the differences between Amherst (along with a small section of Tonawanda) and Buffalo.

2.1 Land Use and Development

Land use is described separately for Buffalo, Amherst, and Tonawanda in the following sections. While the City of Buffalo remains the economic center of the metropolitan region, over many years the rate of commercial and residential growth in suburban areas has exceeded that of the city. Total population in the study area is 228,706, based on 2010 GBNRTC figures by traffic analysis zone (TAZ)¹. The population breakdown in the study area is 131,453 in the Amherst section and 97,253 in the Buffalo section.

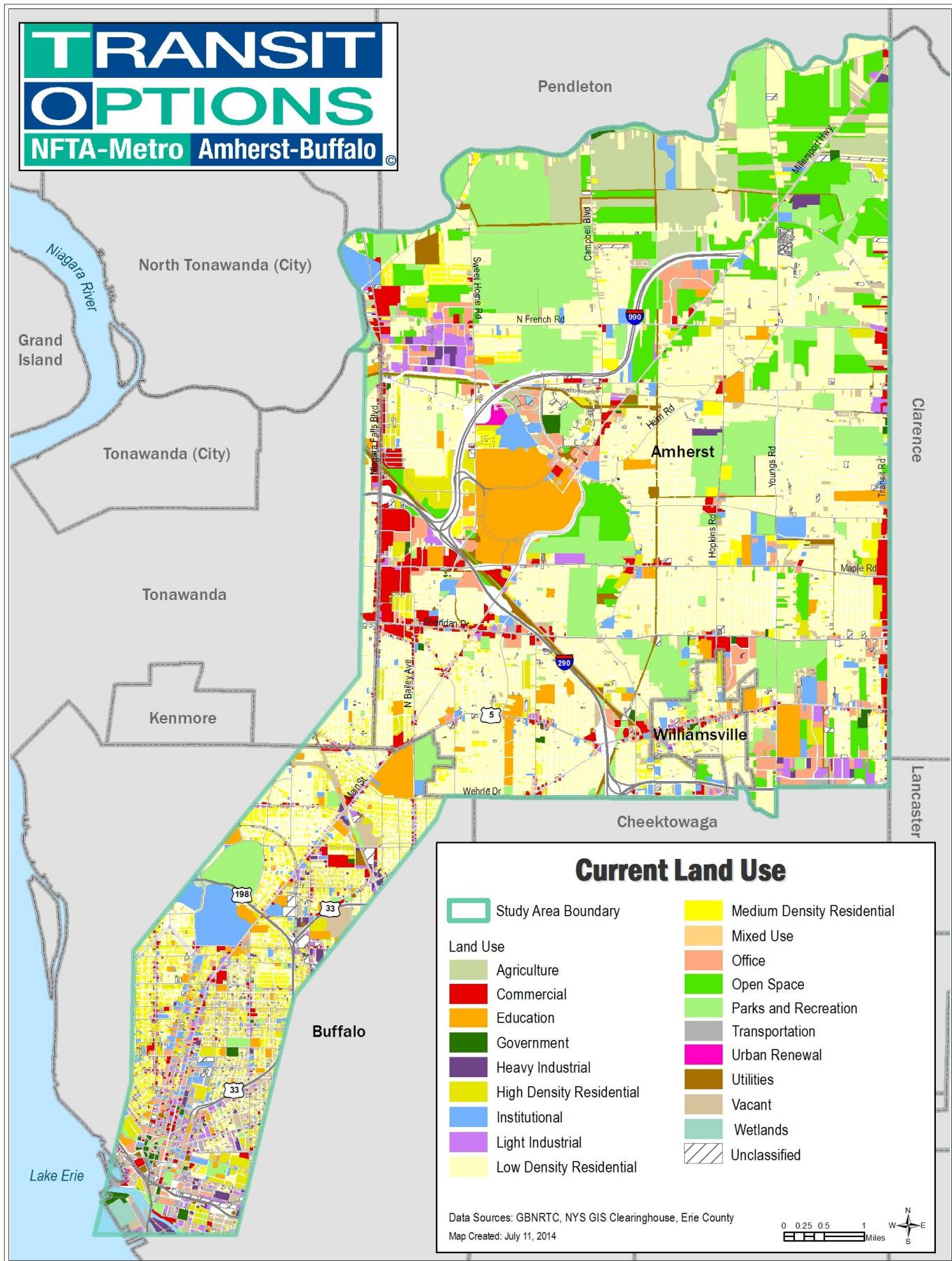
In the Amherst section of the study area, the largest percentage of the land area is low density residential use (41%). The second highest percentage is parks and recreation (16%). In the portion of the study area in Buffalo, the largest percentage of the land is also low density residential (22%), but medium density residential and vacant land also comprise large percentages of the total land area (14% each). Generalized land use total acreage and percentage of total acreage for the study area are listed in Table 1 for the Amherst and Buffalo sections of the study area. Figure 2 shows current land use for the study area.

Table 1 Study Area Land Use by Category

Land Use	Study Area			
	Amherst		Buffalo	
Agriculture	1,221	4%	0	0%
Commercial	1,095	4%	214	4%
Education	1,556	5%	407	7%
Government	117	0%	74	1%
Heavy Industrial	123	0%	123	2%
High Density Residential	641	2%	368	6%
Institutional	824	3%	556	9%
Light Industrial	464	2%	238	4%
Low Density Residential	12,143	41%	1,302	22%
Medium Density Residential	723	2%	822	14%
Mixed Use	109	0%	16	0%
Office	881	3%	164	3%
Open Space	2,999	10%	51	1%
Parks and Recreation	4,792	16%	488	8%
Transportation	55	0%	126	2%
Unclassified	382	1%	193	3%
Urban Renewal	30	0%	8	0%
Utilities	552	2%	37	1%
Vacant	1,120	4%	832	14%
<i>Total</i>	<i>29,827</i>		<i>6,020</i>	

¹ In order to determine the population statistics within the study area only, which does not always include whole TAZs, the statistics were normalized based on the percentage of the zone located within the study area.

Figure 2 Current Land Use



Major destinations, including shopping centers, major employers, health care facilities, and institutional/educational facilities are shown in Figure 3 and discussed in the sections for each municipality.

2.1.1 Buffalo

The City of Buffalo remains the economic center of the metropolitan region, although over many years the rate of commercial and residential growth in suburban areas has exceeded that of the city. As with most major cities, downtown Buffalo has a mix of office, business, retail, and entertainment and tourism uses. The downtown area has about 3.2 million square feet of Class A office space and 3.1 million square feet of Class B office space, and it is home to more than 1,100 businesses with over 58,000 employees. The largest private employers are HSBC Bank, Roswell Park Cancer Institute, which is one of the nation's top-rated cancer hospitals and research centers, M&T Bank, Buffalo General Medical Center, Blue Cross Blue Shield of Western New York, the new Gates Vascular Institute, Buffalo and the Buffalo News.¹ Downtown also has more than 60 restaurants and bars and more than 50 retail stores.

Downtown Buffalo has several entertainment, cultural, and tourism facilities. It attracts seven million visitors annually to sporting events, festivals, concerts, theatres, and tradeshows. It is home to eight live theaters, a cinema, galleries and significant architectural sites. Buffalo's Theatre District is one of the largest concentrations of performing arts venues in the country. There are 12 hotels located in the Downtown area, and more than 1,500 hotel rooms are within a ten minute walk of the Buffalo Niagara Convention Center. The First Niagara Center is a multi-purpose arena, which is the home of the National Hockey League's Buffalo Sabres who play 41 regular season home games plus preseason each year. The capacity for hockey games is 19,070. The arena also hosts basketball games, concerts, ice shows, and other family shows. Coca-Cola Field is the home for the Buffalo Bisons minor league baseball team. It is the largest minor league field in the country, with a capacity of 18,050, and it hosts 72 regular season games per year.

The Erie Canal Harbor Development Corporation and the City of Buffalo have revitalized several acres of downtown waterfront space creating a significant recreational and tourism destination. The revitalization features several fully restored facets of the original Erie Canal terminus and Buffalo's waterfront including the Commercial Slip, the wooden plank Central Wharf, a replica canal era building, and the Whipple Truss foot bridge. The area also includes Veteran's Waterfront Park, which features a naval armada of WWII ships, various monuments, and military artifacts. The ongoing Canal Side project focuses on developing Buffalo's Inner Harbor for public, commercial, residential and other mixed-uses. In 2012, over 750 events took place at Canal Side attracting over 750,000 visitors and those numbers will be exceeded in 2013. There is also a focus on improving access to the Inner and Outer Harbor areas with the Erie Canal Harbor Development Corporation (ECHDC), in cooperation with the New York State Department of Transportation (NYSDOT) preparing an Environmental Impact Statement (EIS) for a new bridge.

In addition to University at Buffalo described in more detail in following sections, the City of Buffalo is home to a number of other colleges and universities including Buffalo State College, Erie Community College, Bryant & Stratton College, Canisius College, D'Youville College, Medaille College and Trocaire College.

Buffalo Niagara Medical Campus

The Buffalo Niagara Medical Campus (BNMC), a consortium of health care, life sciences research, and medical education institutions, is located on 120 acres on the northern edge of the downtown area and is developing. The major facilities on the campus include Buffalo General Medical Center, the Roswell Park Cancer Institute, UB's Clinical and Translational Research Center and the Gates Vascular Institute. In addition, the new John R. Oishei Children's Hospital and the Center for Women's Health (the Women & Children's Hospital of Buffalo) will also be located on the BNMC. More facilities are planned to open on the campus.

The University at Buffalo Medical School will open in 2016 on the BNMC. The building will serve as both an entrance into the growing Buffalo Niagara Medical Campus and a bridge to the nearby community. The new facility also is designed to

encourage its 2,000 faculty, staff and students to filter into the surrounding neighborhoods to eat, shop and live. A new Allen/Medical Campus Metro Rail station will be integrated into the Medical School.

Canisius College/Medaille College

Canisius College is located on a 36-acre campus just east of Main Street, about halfway between BNMC and UB-South. The total enrollment is 5,152 students. The college has three schools: College of Arts and Sciences, Wehle School of Business, and the School of Education and Human Services. The campus has 11 residence halls, including freshman residence halls, upperclassman housing, and graduate student housing. The campus is served by the Delavan/Canisius College and Humboldt/Hospital Metro Rail stations.

Located west of Canisius College is Medaille College. Medaille College is a private non-sectarian four-year college with three campuses - in Buffalo, Amherst and Rochester. Total enrollment is 2,307ⁱⁱ. The Buffalo campus has two residence halls and 14 campus and academic buildings. The campus is served by the Humboldt/Hospital Metro Rail station.

University at Buffalo

The University at Buffalo (UB) is the largest and most comprehensive campus in the State University of New York system. UB is New York's leading public center for graduate and professional education and is a premier, research-intensive public university. With 28,900 students, 6,622 employees and 2,298 faculty members, UB provides more than 400 undergraduate, graduate and professional degree programs and has an economic impact of \$1.7 billion a year. Times Higher Education named UB as one of the world's top 200 universities and UB is one of the best universities in the United States, according to the "Best Colleges" rankings by U.S. News and World Report. UB has three campuses: North (in Amherst), South, and Downtown (both in Buffalo).

The University at Buffalo 2020 Plan (*UB 2020 plan*) establishes ambitious expansion plans for the all three campuses of the University at Buffalo, with the Downtown Campus plan specifically relating to the planned expansion of BNMC.

Downtown Campus

Interspersed with BNMC is the burgeoning UB Downtown Campus. It currently has 600,000 gross square feet mainly in the Downtown Gateway Building and the Center of Excellence in Bioinformatics and Life Sciences with 195 students, 325 faculty and staff.

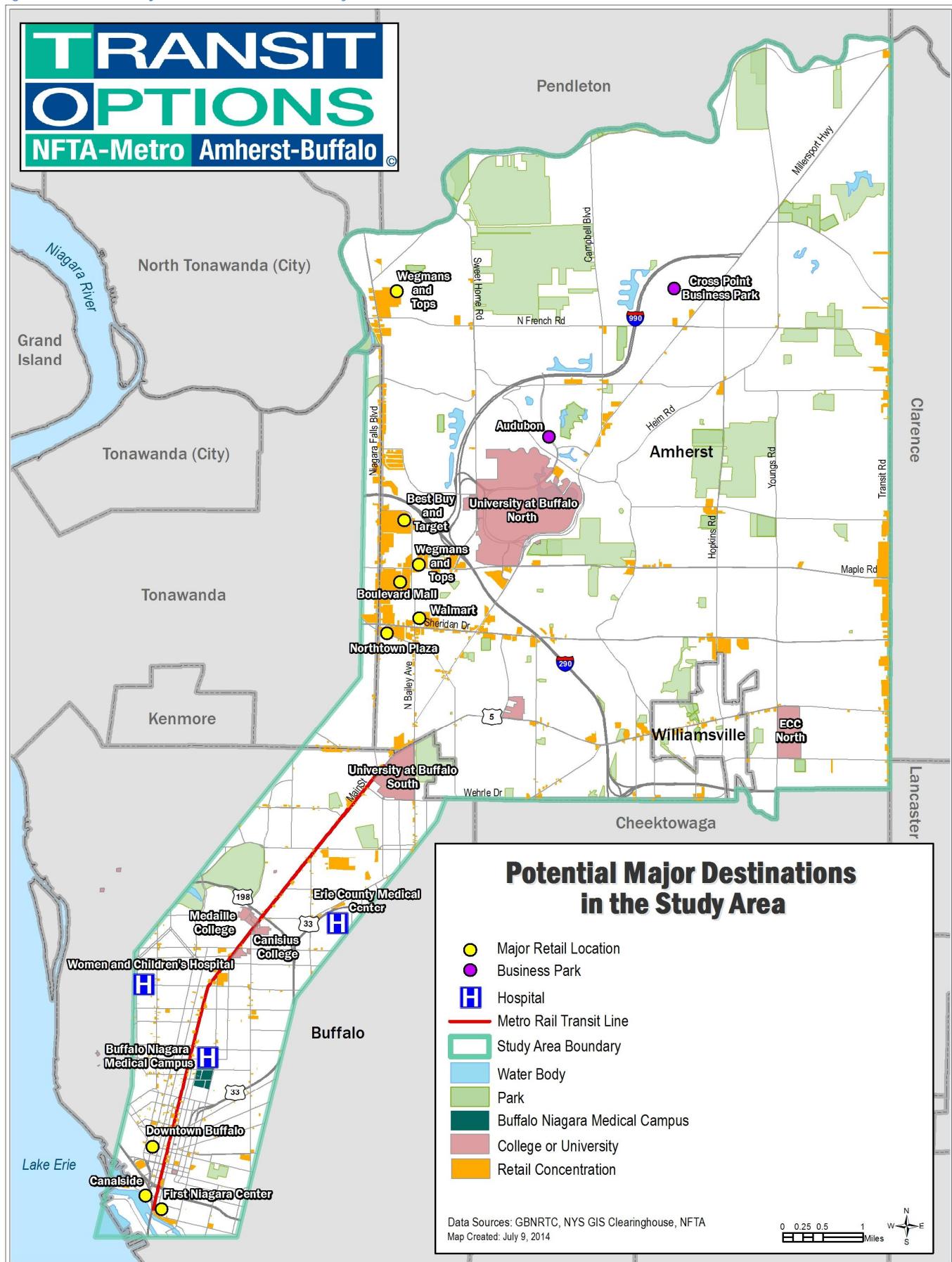
South Campus

UB South Campus, located in the northeastern corner of the City of Buffalo, is the university's original campus. Today, this campus has about three million gross square feet of building space on 154 acres with 49 buildings. The campus has 5,758 students and 1,871 faculty and staff.ⁱⁱⁱ

Residential Neighborhoods

The area surrounding the downtown commercial area has a number of residential neighborhoods: Lower West Side, Allentown, Fruit Belt, Delaware, and Cold Springs. Additional residential neighborhoods along the Buffalo portion of the study area include Masten Park, Elmwood Village, Parkside, Hamlin Park, Kensington, Filmore-Leroy, Central Park, University District, and University Heights.^{iv} The 2010 population of the "Greater Downtown" area, as defined by Buffalo Place, is 23,334 while the entire City of Buffalo has a 2010 population of 261,310^{v,vi}.

Figure 3 Potential Major Destinations in the Study Area



2.1.2 Amherst

The largest and most populous suburb of Buffalo, New York, the town of Amherst encompasses most of the incorporated village of Williamsville and the hamlets of Eggertsville, Getzville, Snyder, Swormville, and East Amherst. As of the 2010 census, Amherst had a total population of 122,366. As previously noted, Amherst is home of the North Campus of UB, as well as the graduate campus of Medaille College, a campus of Bryant and Stratton College, Daemen College and a campus of Erie Community College. In the Amherst portion of the study corridor, the land uses include a mix of residential, commercial, and institutional.

Major single-family neighborhoods include the Eggertsville area, Grover Cleveland Terrace, Willow Ridge Estates, and Bucyrus Heights. In addition, the area has over 50 multi-family residential complexes, including many oriented to university students. Concentrations of private student housing are located along Chestnut Ridge Road and Sweet Home Road west of the UB North Campus, located in Amherst.

Amherst also has several senior citizen complexes including the Brewster Mews, Peppertree Heights, Daffodil, Shaarey Zedek, Hopkins Court, and Amherst Towne apartments, as well as the Weinberg Campus, Beechwood Continuing Care, and Elderwood Health Care senior living complexes, and the Audubon Adult residential facility for disabled persons. Low-income apartment complexes include Allenhurst, Jackson Square, Parkside, and Princeton Court.

With over 94,000 jobs, Amherst is a growing employment center. Commercial activity includes retail, office, business / industrial, and hotels / motels. Near the town's western border, the area including Niagara Falls Boulevard, Maple Road, and Sheridan Drive has a major concentration of retail / commercial activity. This area has many retail centers including Northtown Plaza, TJ Maxx Plaza, Boulevard Mall with over 100 stores, Raymour and Flanigan Plaza, Burlington Plaza, Boulevard Consumer Square, Walmart Super Center, Sheridan Center with over 20 stores, and Maple Crossing.

Amherst has significant office development, especially close to UB. The University Corporate Center, which has about 400,000 square feet of Class A office space in 7 buildings on 33 acres, is located off Maple Road. Several smaller office complexes are located in the area just north of the campus, particularly along North Forest Road and Audubon Parkway. These office locations include Audubon Office Park, Seevast Office Center, 2410 North Forest, Audubon Center, Towne Center I and II, and Bryant Woods. Moving to the west and north, other office complexes include University Commons, Sweet Home Commons, and West Amherst Office Park. Further north, a major newer development is the CrossPoint Business Park (with over 1 million square feet). Another major business park is the Audubon Industrial Park.

Amherst has several hotels and motels. One concentration is located along Niagara Falls Boulevard near Exit 3 of I-290; it includes Holiday Inn, Extended Stay, Sleep Inn, Rodeway Inn, Econo Lodge, Knights Inn, and Red Carpet Inn (the latter three actually are on the west side of Niagara Falls Boulevard in Tonawanda). Another concentration is located just off Millersport Highway near Exit 5 of I-290. This area includes Homewood Suites, DoubleTree, Marriott, Comfort Inn, Red Roof Inn, and Candlewood Suites.

A complex of Amherst municipal facilities including court, library, and senior center is located along Audubon Parkway north of UB-North.

UB-North Campus

UB's North Campus in the Town of Amherst is the location of most of the university's core academic programs. Opened in the early 1970s, it is the largest of the three campuses with 1,192 acres and 125 buildings. Its 125 buildings include academic and research spaces, student dormitories and apartments, the Student Union, athletics venues, and the university's administrative offices. It currently has 6.6 million gross square feet of building space, including 11 residence halls and five on-campus apartment complexes. The campus has 22,545 students and 5,473 faculty and staff.

2.1.3 Tonawanda

A small portion of the study area is in Tonawanda. Tonawanda is a town in Erie County, New York, and as of the 2010 census, the town had a population of 73,567. The town is at the north border of the county and is the northern suburb of the City of Buffalo. The portion of Tonawanda that is in the study area is largely centered upon Niagara Falls Boulevard, a commercial strip corridor with primarily residential land uses behind the commercial. Niagara Falls Boulevard serves as the boundary line with the Town of Amherst. Niagara Falls Boulevard is a major commercial destination supporting both the Town of Tonawanda and the Town of Amherst, with "big box" style retailers on the Amherst side of the roadway, and smaller, supporting retail and commercial uses on the Town of Tonawanda side. Congestion and traffic problems have long plagued Niagara Falls Boulevard.

The Comprehensive Plan for Tonawanda recognizes that the character of Niagara Falls Boulevard is not uniform, but can be divided into four segments:

- South of Sheridan Drive: mixed use, with pockets of low density retail. The plan states that the focus should be on aesthetic standards, traffic calming and linking commercial uses with adjacent neighborhoods.
- Sheridan Drive to I-290: primarily commercial. The plan states that access management improvements are most needed in this section. More creative approaches to site design, including expansion from the rear of properties along Niagara Falls Boulevard should be explored over the long run.
- I-290 north to Ellicott Creek Road: primarily commercial, with some residential and mixed use. The plan notes that access management improvements also important in this segment, with efforts to tie convenience retail to neighborhood better.
- North of Ellicott Creek Road: mixed use, including park. The plan notes that improvements to bikeways and improving pedestrian facilities are needed.

2.1.4 Major Employers

The New York State Department of Labor reports employment statistics by region. Erie County is located in the Western New York Region^{viii}. According to the Department of Labor, the Western New York Region has experienced over-the-year job growth (private sector) every month since April 2010. During that period, the regional economy has added 16,000 private sector jobs, which represents the regeneration of all but 400 jobs lost during the 2008-2009 recession^{ix}. The largest private sector employers in the region are listed in Table 2. Companies with asterisks are headquartered in Erie County. Most of these largest private sector employers have large concentrations of employees in the study corridor.

There are also many large public sector employers in the region and along the study corridor as Buffalo is the Erie County seat, the State University of New York/University at Buffalo has academic and medical campuses/facilities in the study corridor, and there are many other local, state, and federal agencies operating in the region.

Table 2 Largest Private Sector Employers in Western New York

10 Largest Private Sector Employers (alphabetical order) in Western New York ²
Bank of America
Kaleida Health*
M&T Bank*
Mercy Hospital
Moog Inc.
People Inc.
Sisters of Charity Hospital
Tops Markets*
Walmart
Wegmans Food Markets*

Source: New York State Department of Labor Quarterly Census of Employment and Wages (2013)

2.2 Zoning

Zoning information is represented differently for each community as discussed below, but is generalized in Table 3 and Figure 4. Each community has residential, commercial, industrial, mixed use and community-specific special districts, which are discussed in more detail by community following the table and figure^{x,xi,xii}. The zoning information used for the analysis came from each separate community.

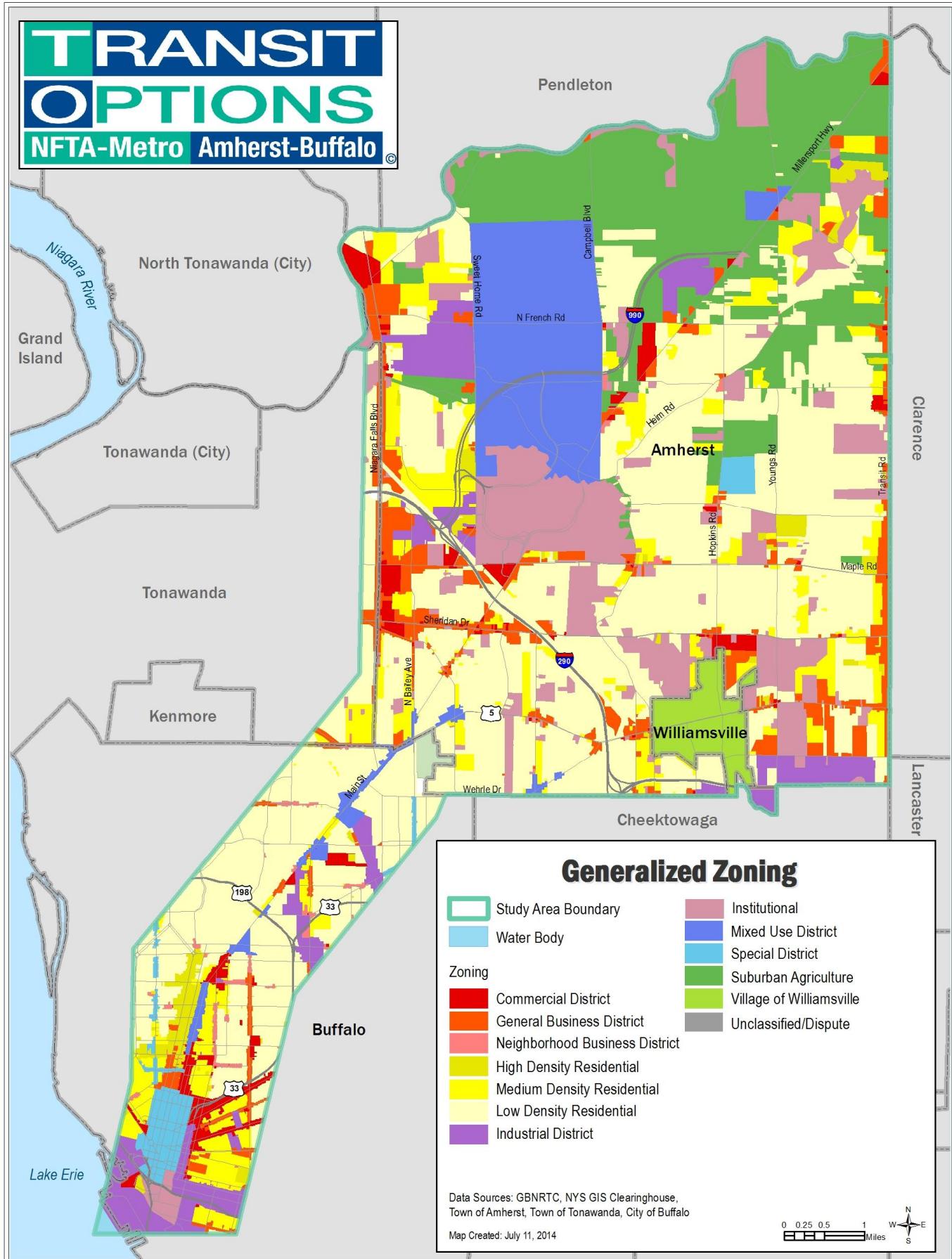
Low density residential districts dominate both the Amherst and Buffalo sections of the study area. In the Amherst section of the study area, suburban agriculture (northern Amherst) and institutional (UB North) districts also cover large land areas. In the Buffalo section of the study area, industrial and medium density residential districts also cover large land areas.

Table 3 Current Zoning

Generalized Zoning District	Study Area			
	Amherst		Buffalo	
Low Density Residential	12,750	36%	4,253	54%
Medium Density Residential	2,635	8%	846	11%
High Density Residential	359	1%	301	4%
General Business District	2,275	6%	259	3%
Neighborhood Business District	63	0%	131	2%
Retail/Commercial District	600	2%	380	5%
Industrial District	1,214	3%	900	11%
Institutional District	4,648	13%	120	2%
Mixed Use District	3,235	9%	248	3%
Suburban Agriculture District	6,428	18%	N/A	0%
Special District	127	0%	446	6%
Village of Williamsville (Amherst)	763	2%	N/A	0%
Unclassified	1	0%	N/A	0%
Total	35,098	100%	7,884	100%

² The Western New York Region includes Allegany, Cattaraugus, Chautauqua, Erie and Niagara Counties

Figure 4 Current Zoning in the Study Area



2.2.1 City of Buffalo

For the portion of the study corridor in Buffalo, the Common Council has created a separate district/special zoning controls for the areas surrounding the Metro Rail stations to allow for mixed-use/transit-oriented development. The station areas include: Amherst Station, Humboldt, Delavan, Utica and Summer-Best. The intention behind the establishment of the Transit Station Area District is described as follows:

In view of the large public transit investment along Main Street represented by the transit line and transit stations and since the area surrounding the stations presents unique potential for the betterment of the public health, welfare, safety, and aesthetics for the public, the Common Council has determined that special zoning controls should exist in areas near the transit stations.^{xiii}

Also in Buffalo, downtown between Elmwood Avenue and Oak Street is a large area zoned as a Downtown Opportunity District to support downtown revitalization and economic development efforts. The Common Council has modified the 1953 Central Business District zoning to a new zoning scheme for the Downtown Area. The new scheme is designed "...to build upon downtown's recent revitalization, to support downtown's role as the center of employment and employment growth in Erie and Niagara Counties, to enhance the entertainment, retail, residential, and public uses of a zone therein and to take advantage of the development potential afford by the Light Rail Rapid Transit and Main Street Pedestrian Mall."^{xiv}

Special zoning districts within the Buffalo portion of the study area include the Elmwood Avenue Business District, the Kensington-Bailey Business District, and the Allen Street District, each of which have a variety of special features over which the Common Council has special oversight.

Otherwise in the study area in Buffalo, much of the waterfront area is zoned for industrial use and land adjacent to the major roadways downtown are zoned for business/commercial uses. In the downtown area, medium and high density residential zones dominate, but further from downtown low density residential zones dominate.

2.2.2 Town of Amherst

Zoning in Amherst includes more categories and subcategories than Buffalo and Tonawanda. Some zones that exist in Amherst do not exist in either of the other communities such as the suburban agriculture zone and the village-specific zone for the Village of Williamsville. Amherst has special purpose districts for agriculture, new communities, residential and business development, and community facilities. Amherst also has Live-Work District 1 located along Bailey and Kenmore Avenues. Live-Work District 1 was designated for live-work mixed uses along arterials and major collectors^{xv}.

The designated New Community Districts "...provide flexible land use and design regulations through the use of performance criteria so that small-to-large scale multi-use neighborhoods may be developed on relatively large tracts within the Town, in a manner which incorporates a variety of residential types and nonresidential uses and services."^{xvi} The large land area north of UB North Campus is comprised of multiple types/combinations of new community districts based on appropriate use classifications (major open space, neighborhood, local center, general commercial, restricted industrial) for each land area.

There is also a special purpose district and overlay district zone for Traditional Neighborhood Development/Business Development. The purpose of traditional neighborhood development and business development is "...to provide for the development and redevelopment of fully integrated, mixed-use centers that promote pedestrian-oriented neighborhoods, encourage walkability and minimize traffic congestion, sprawl, infrastructure costs and environmental degradation..."^{xvii} These special purpose districts are located in small pockets along Grover Cleveland Highway, Kensington Avenue, Harlem Road, Bailey Avenue Kenmore Avenue, and Main Street near the southern borders with Buffalo. There is also a traditional neighborhood development district in northeast Amherst on Millersport Highway.

2.2.3 Town of Tonawanda

In Tonawanda only a small portion of the community is located in the study area. Only the first and second residential districts (one- and two-family homes and municipal/public facilities), general business (retail) and restricted business districts (offices), and school/park/cemetery zones are located within the study area.

2.3 Historic, Cultural and Archaeological Resources

Historic and cultural resources are generally above-ground elements of historic importance while archaeological resources are generally found below-ground. Exact locations of archeological sites are not public information, but generalized regions of archaeological sensitivity are. Historic resources and archaeologically sensitive areas within the study area are mapped in Figure 5.

2.3.1 Historic Resources

Historic resources include both properties (structures) and districts. In the study area, historic resources are generally concentrated along Main Street in Amherst and along Main Street in Buffalo, with other scattered resources throughout downtown Buffalo. The Theodore Roosevelt Inaugural National Historic Site is located on Delaware Avenue in Buffalo.

The largest historic resources in the study area include:

- Parkside East Historic District
- Delaware Park-Front Park System
- Allentown Historic District
- Forest Lawn Cemetery

Table 4 lists all of the historic resources in the study area, including those listed on the National Register of Historic Places^{xviii}.

Table 4 Historic Properties and Districts in Study Area

20th Century Club	Kelly, Colonel William, House
33-61 Emerson Place Row	Kleinhaus Music Hall
Ailing & Cory Buffalo Warehouse	Laurel and Michigan Avenues Row
Allentown Historic District	Lafayette Avenue Presbyterian Church
Berkeley Apartments	Lafayette High School
Birge-Horton House	Macedonia Baptist Church
Blessed Trinity Roman Catholic Church Buildings	Martin, D. D., House Complex
Buffalo City Hall	Miller, C. W., Livery Stable
Buffalo Electric Vehicle Company Building	Nash, Rev. J. Edward, Sr., House
Buffalo Gas Light Company Works	Packard Motor Car Showroom and Storage Facility
Buffalo Trunk Manufacturing Company	Parke Apartments
County and City Hall	Parkside East Historic District
Delaware Avenue Episcopal Church	Parkside West Historic District
Delaware Avenue Historic District	Prudential Building
Delaware Park-Front Park system	Public School 13
Durham Memorial AME Zion Church	Reformed Mennonite Church
E&B Holmes Machinery Company Building	Robert T. Coles House and Studio
Edward M. Cotter (fireboat)	Roosevelt, Theodore, Inaugural National Historic Society
Engine House No 2 and Hook & Ladder #9	Saturn Club Building
Entranceway at Main St at Darwin Drive	St. Mary of the Angles Motherhouse Complex
Entranceway at Main St at High Park Blvd	St. Paul's Episcopal Cathedral
Entranceway at Main St at Lafayette Blvd	Stone Farmhouse

Entranceway at Roycroft Blvd and Main St	The Calumet
Entranceways at Main St at Westfield and Ivyhurst	the Robertson-Cataract Electric Building
Entranceways, Lamarck and Smallwood Drives at Main	Trico Plant No. 1
Forest Lawn Cemetery	Trinity Episcopal Church
Fosdick-Masten Park High School	U.S. Post Office
Garret Club	USS Croaker
General Electric Tower	West Village Historic District
Hellenic Orthodox Church of the Annunciation	Wile, M., and Company Factory Building
Hotel Lafayette	Williamsville Christian Church
How, James, and Fanny, House	Williamsville Jr and Sr High School
Howell, Edgar W., House	Williamsville Water Mill Complex
Huyler Building	Woodlawn Avenue Row
J.N. Adams-AM & A's Historic District	YMCA Central Building
Johnston, Edwin M., and Emily S., House	

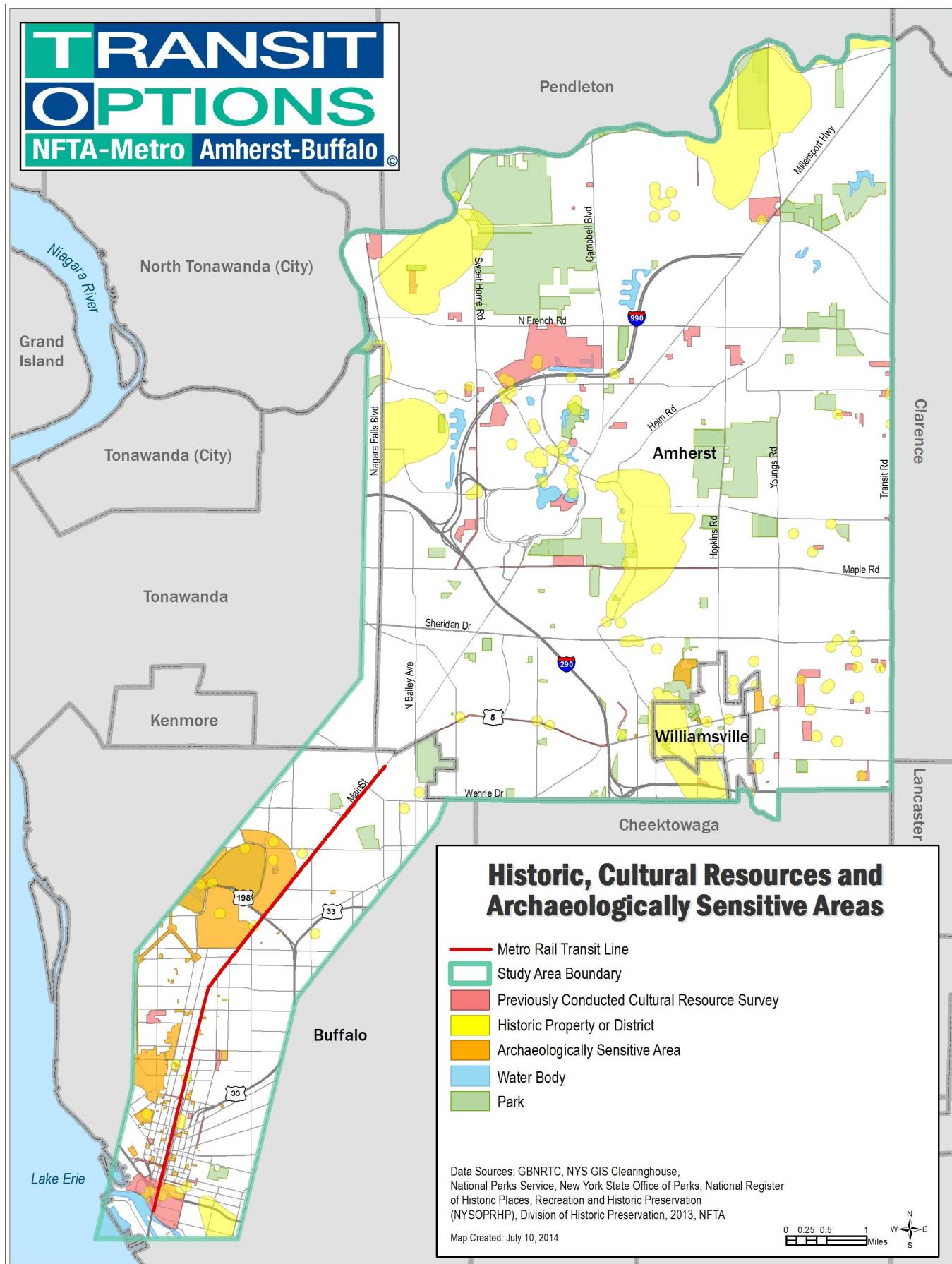
2.3.2 Archaeologically Sensitive Areas

The largest concentrations of archaeologically sensitive areas are found near the UB North campus, northern, western and southeastern boundaries in Amherst and in pockets throughout Buffalo and Amherst (see Figure 5).

2.3.3 Tribal Lands

The Buffalo-Niagara region is home to the Seneca Nation of Indians, the Cayuga Nation of New York, the Tonawanda Band of Seneca Indians, and the Tuscarora Nation. There are no tribal reservation areas within the study area, but the Buffalo Creek Casino owned by the Seneca Nation of Indians, located on Fulton Street in Buffalo, is within the study area. The casino is currently served by NFTA Metro bus service.

Figure 5 Historic Properties and Districts and Archaeologically Sensitive Areas



2.4 Parks and Recreation

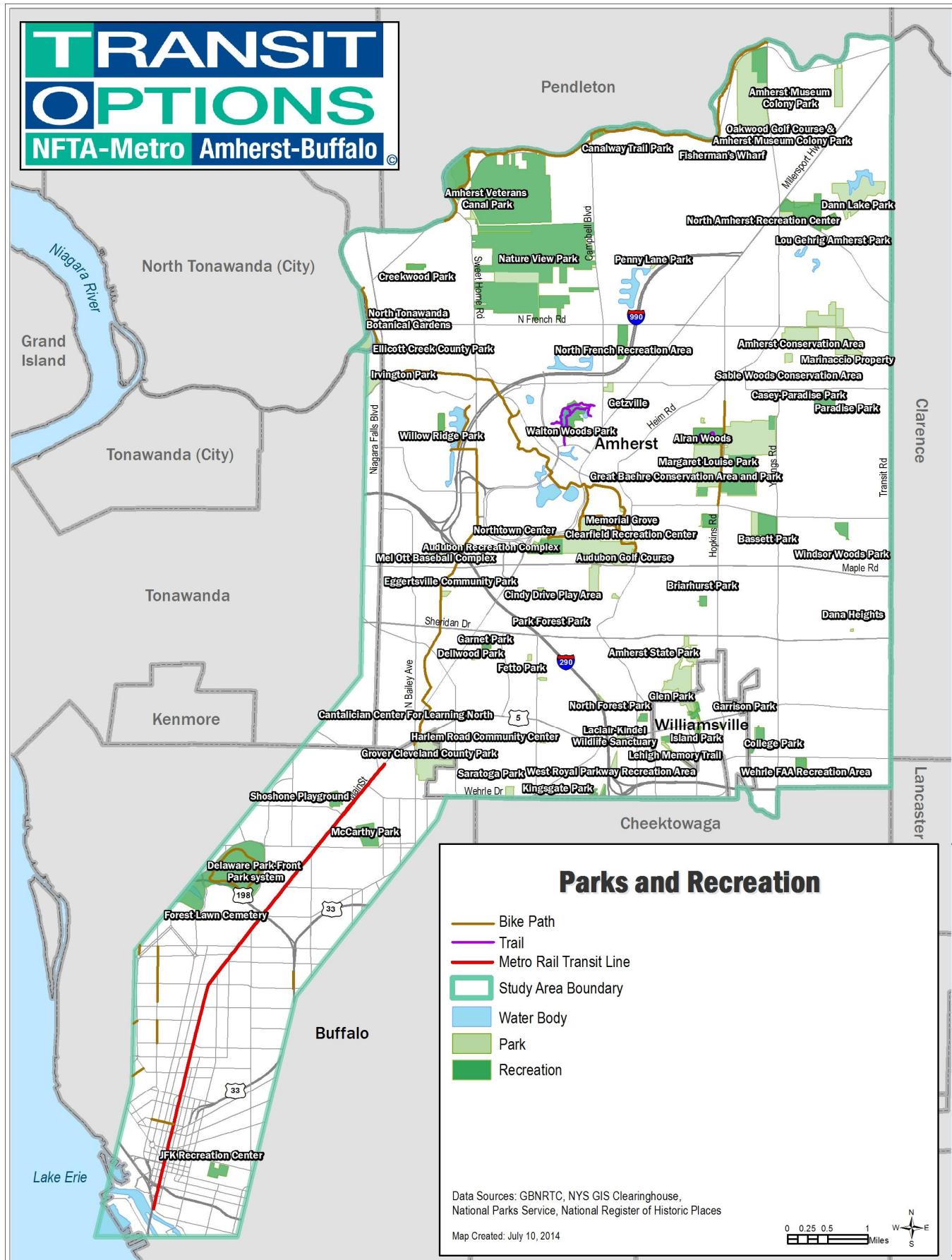
Parks and recreation areas include parks, bike paths, trails, golf courses, conservation areas, and recreation areas and centers. Figure 6 maps the location of parks and recreation areas in the study area. There are a couple of parks and recreation areas located in Buffalo and many more scattered throughout Amherst. Some of the bike paths in the study area are multi-use off-road paths, but many run along in-use roadways. GBNRTC publishes a bicycle route guide with a map showing roadway safety for use with a bicycle as well as the locations of multi-use paths^{xix}.

Within the Buffalo section of the study area, the largest park area is Delaware Park. In Amherst, Nature View Park is the largest park area. Table 5 lists the various parks and recreation areas within the study area.

Table 5 Study Area Parks and Recreation Areas

1	Alran Woods	35	Irvington Park
2	Amherst Conservation Area	36	Island Park
3	Amherst Museum Colony Park	37	JFK Recreation Center
4	Amherst State Park	38	Jurek Post
5	Amherst Veterans Canal Park	39	Kingsgate Park
6	Audobon Golf Course	40	Laclair-Kindel Wildlife Sanctuary
7	Audubon Recreation Complex	41	Lehigh Memory Trail
8	Bassett Park	42	Lou Gehrig Amherst Park
9	Briarhurst Park	43	Margaret Louise Park
10	Campus Drive Recreation Area	44	Marinaccio Property
11	Canalway Trail & Park	45	McCarthy Park
12	Casey-Paradise Park	46	Mel Ott Baseball Complex
13	Central Amherst Little League	47	Memorial Grove
14	Cindy Drive Play Area	48	Nature View Park
15	Clearfield Recreation Center	49	North Amherst Fire Company Ball Diamond
16	College Park	50	North Amherst Recreation Center
17	Creekwood Park	51	North Forest Park
18	Dana Heights	52	North French Recreation Area
19	Dann Lake Park	53	North Tonawanda Botanical Gardens
20	Delaware Park	54	Northtown Center
21	Dellwood Park	55	Oakwood Golf Course & Amherst Museum Colony Park
22	Eggertsville Community Park	56	Paradise Park
23	Ellicott Creek County Park	57	Park Forest Park
24	Fetto Park	58	Penny Lane Park
25	Fishermans Wharf	59	Sable Woods Conservation Area
26	Forest Lawn Cemetery	60	Saratoga Park
27	Garnet Park	61	Sattler Park
28	Garrison Park	62	Shoshone Playground
29	Getzville	63	South Long Street Recreation Area and Ball Diamond
30	Glen Park	64	Walton Woods Park and Trail
31	Great Baehre Conservation Area and Park	65	Wehrle FAA Recreation Area
32	Grover Cleveland County Park	66	West Royal Parkway Recreation Area
33	Harlem Road Community Center	67	Willow Ridge Park
34	Hopkins Road Trailway & Boardwalk	68	Windsor Woods Park

Figure 6 Study Area Parks and Recreation Areas



2.5 Noise and Vibration

Noise impacts and vibration impacts may cause disturbance or annoyance to people or sensitive activities in nearby areas. In the context of existing conditions, potentially sensitive receptors are identified in the study corridor from the land use, major destinations, historic properties, and parks and recreation discussions. Figure 7 is a map of potentially susceptible receptors for noise and vibration. Land uses included as potentially sensitive receptors include: education, institutional, residential, parks and recreation/open space, and wetlands.

2.6 Demographic/Socioeconomic Characteristics

This section describes the demographic and socioeconomic characteristics of the population in the study area. This includes current and historic population and employment, socioeconomic characteristics, and environmental justice populations.

2.6.1 Current and Historic Population and Employment

As noted, the population of the study area in 2010 is estimated at 228,706 with 131,453 in the Amherst portion of the study area and 97,253 in the Buffalo portion of the study area. Table 6 lists population, households, and employment in the study area from GBNRTC figures for 2000 and 2010. All characteristics of the population grew at a higher rate in the Amherst section of the study area as compared to the Buffalo section.

Table 6 2000, 2010 Population, Households, and Employment in the Study Area

Characteristic	Amherst			Buffalo		
	2000	2010	% Change	2000	2010	% Change
Population	125,396	131,453	4.83%	94,341	97,253	3.09%
Households	48,751	51,291	5.21%	40,751	42,620	4.59%
Employment	96,025	100,681	4.85%	109,930	111,201	1.16%

Source: GBNRTC TAZ Data

Within the study area, population is concentrated in Buffalo along the existing Metro Rail Line and in pockets in Amherst, as is shown in Figure 8.

Employment is estimated to be 211,882 in the study area based on 2010 GBNRTC figures by TAZ. The employment breakdown in the study area is 100,681 in Amherst and 111,201 in Buffalo. Employment is concentrated in Buffalo along the Metro Rail, around both UB campuses and on the western and southeastern edges of Amherst, as is shown in Figure 9.

2.6.2 Current Socioeconomic Characteristics

Data on socioeconomic characteristics such as income level and vehicle ownership can be useful in identifying "transit-dependent" population segments and potential transit service markets. There are an estimated 93,911 households in the study area based on GBNRTC 2010 figures, 51,291 in the Amherst section of the study area, 42,620 in the Buffalo portion of the study area. Minority status and poverty level in the study area are discussed in the following section on environmental justice.

The GBNRTC demographic data include information on the median household income by TAZ. The data show relatively low incomes for households along the current Metro Rail line in Buffalo, especially east of the line as can be seen in Figure 10. Moving north into Amherst, household incomes are relatively higher, with the notable exception of the UB North Campus. The average median household income in the Buffalo portion of the study area is \$26,175 and \$52,412 in the Amherst portion.

Figure 7 Potentially Susceptible Receptors for Noise and Vibration

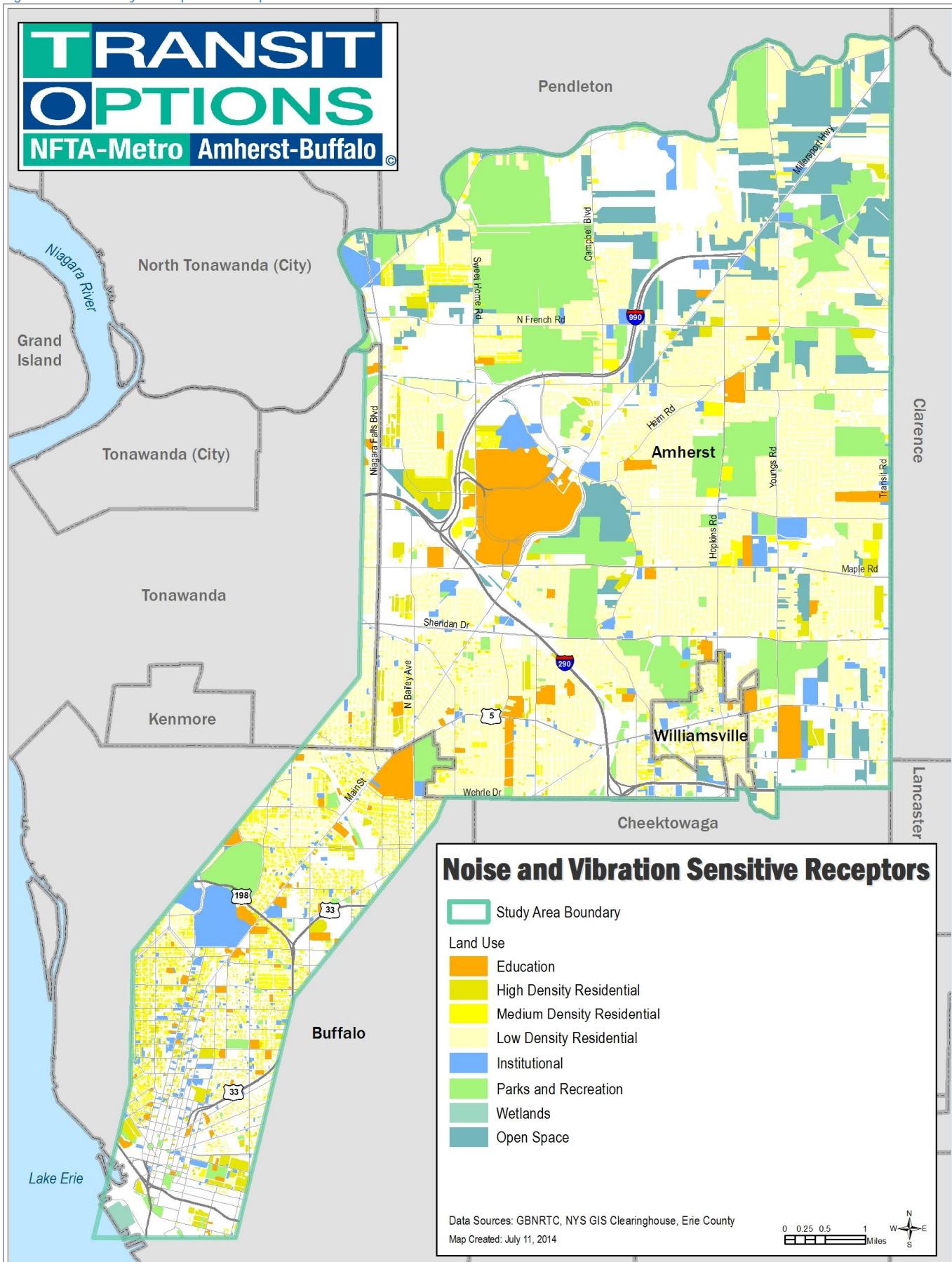


Figure 8 2010 Study Area Population Density by TAZ

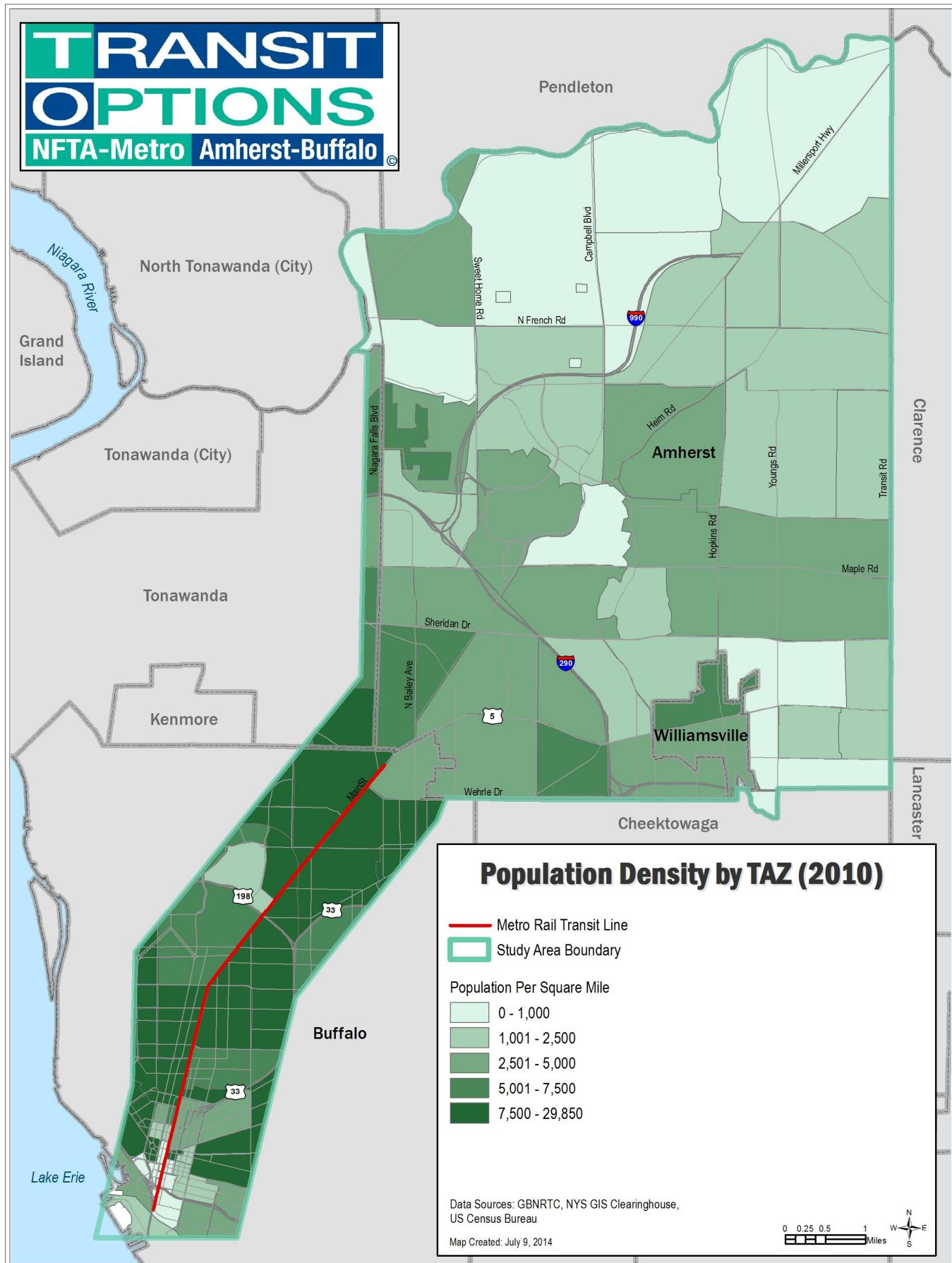


Figure 9 2010 Study Area Employment Density by TAZ

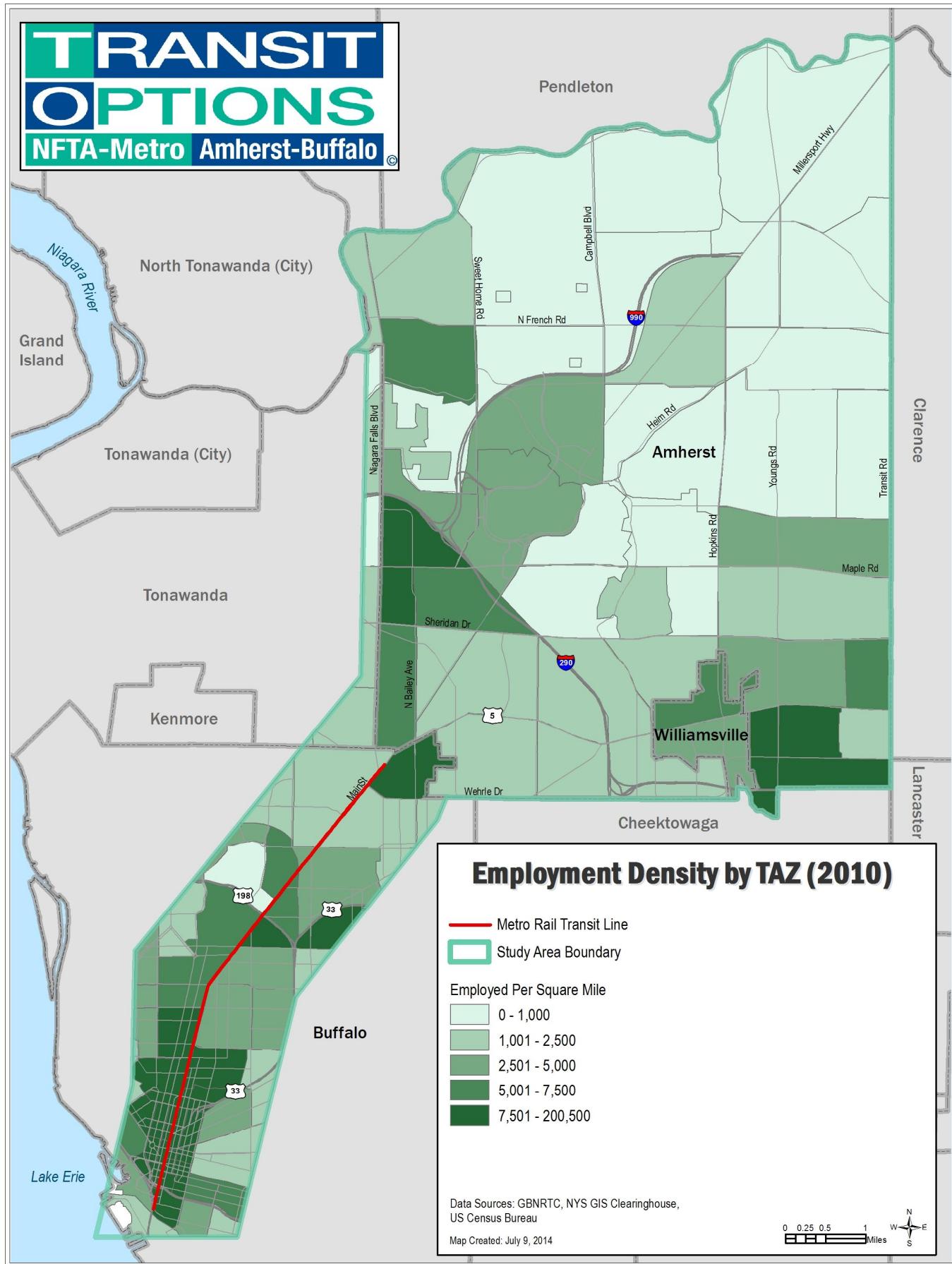
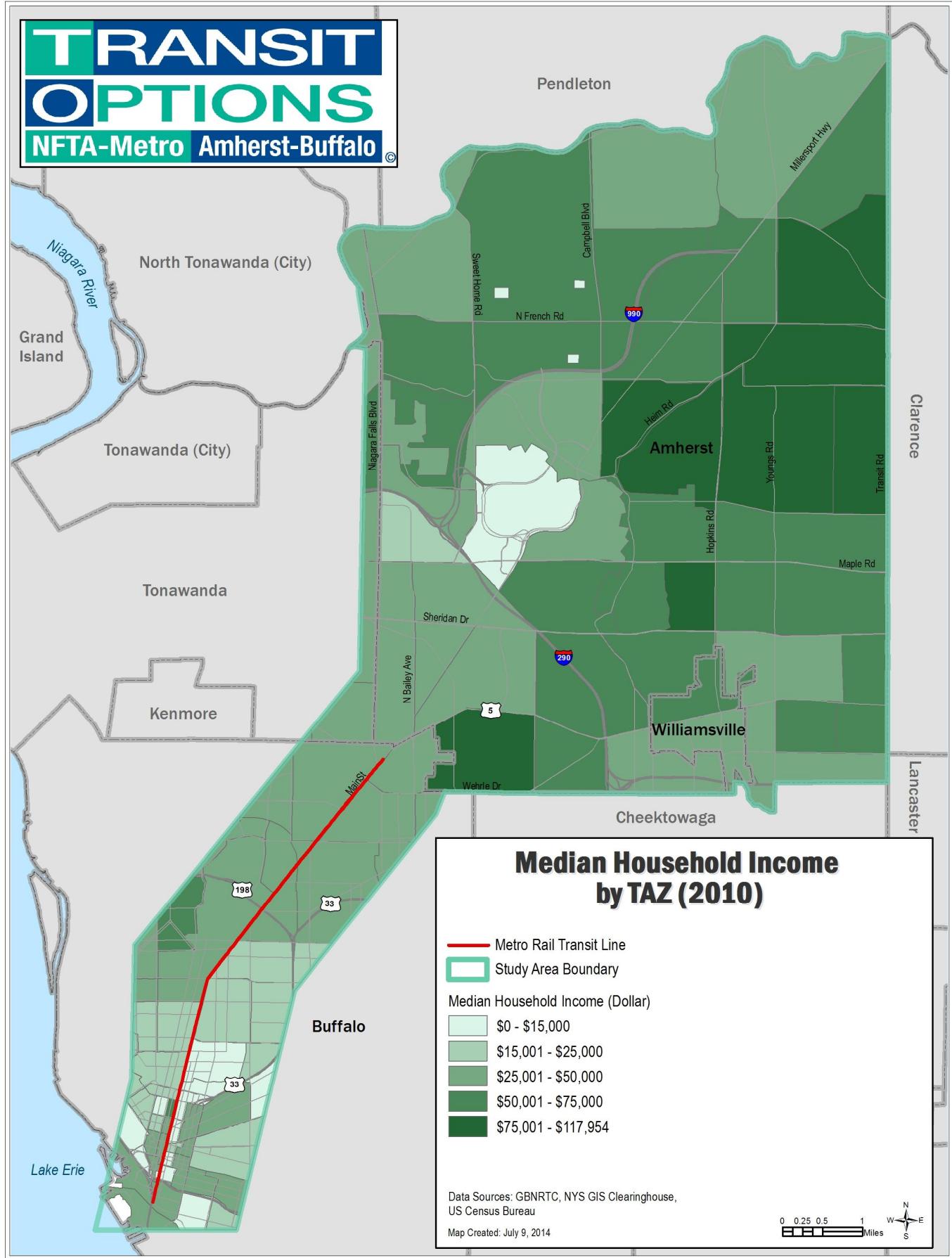
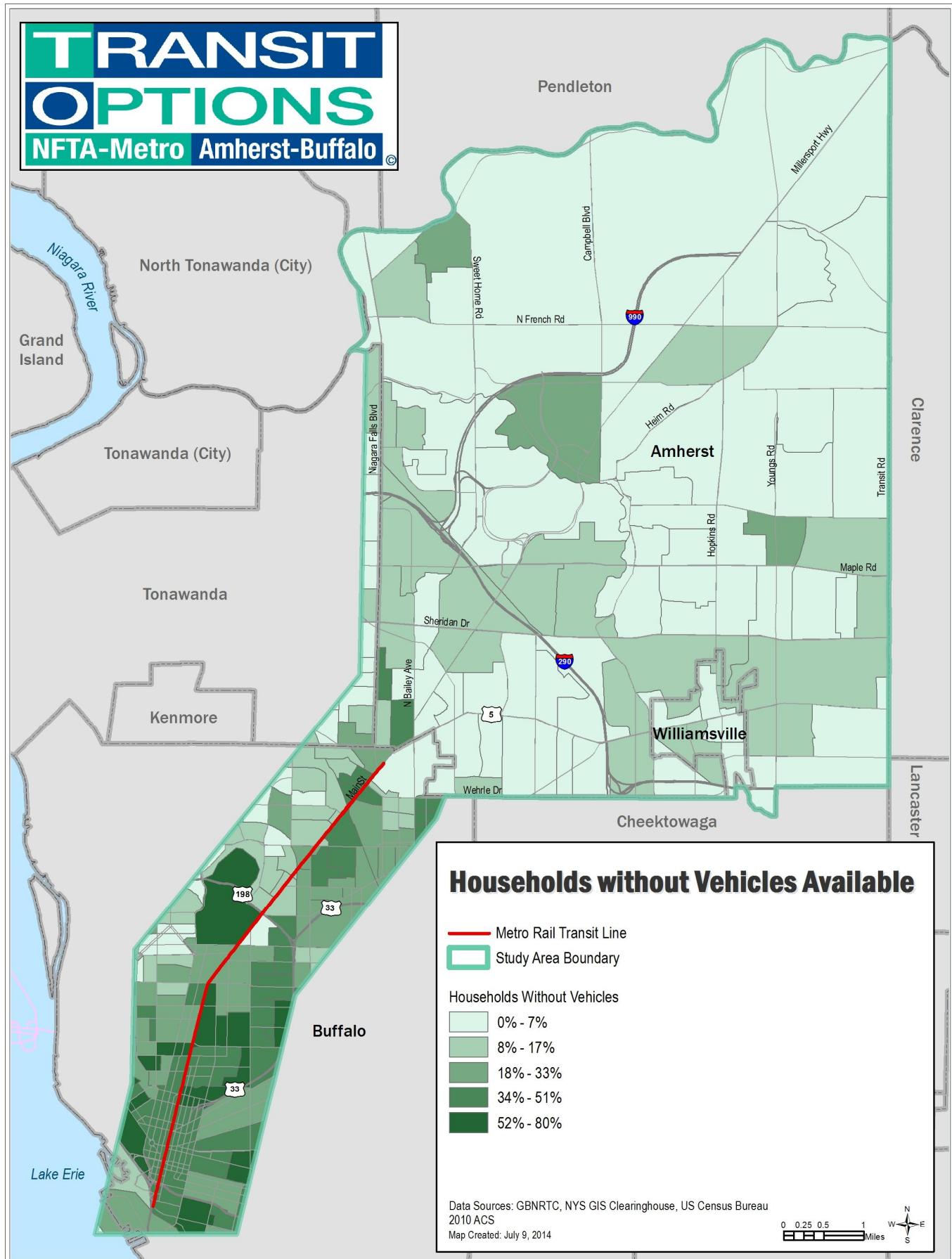


Figure 10 2010 Study Area Median Household Income



Identifying households without vehicles available is another metric used in identifying concentrations of households more likely to use transit service. The information on vehicle ownership in the study corridor came from the US Census Bureau's American Community Survey 2006-2010 5-year estimates. Within the study area, there are 19,604 households without vehicles available (16.8%). Of these, 15,327 are located in the Buffalo portion of the study area (6.5% of households) and 4,277 are located in the Amherst portion of the study area (30.2% of households). Figure 11 is a map of percentage of zero-vehicle households in the study area.

Figure 11 2010 Study Area Households without Vehicles Available



2.6.3 Environmental Justice Populations

The United States Environmental Protection Agency (USEPA) defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies^{xx}. In 1994, Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The Order directed federal agencies to develop strategies to address disproportional adverse impacts on minority and low income portions of the population and to promote nondiscrimination in federal programs^{xxi}. Federal guidelines define national environmental justice thresholds; regional planning agencies are encouraged to further define environmental justice thresholds to better reflect the regional population makeup as long as the regional thresholds are at least as stringent as the federal thresholds.

GBNRTC defines regional environmental justice thresholds for identifying environmental justice populations as^{xxii}:

- More than 3% of the population with limited English proficiency (LEP)
- More than 13.8% of the population living below the poverty level (low income)
- More than 20.5% of the population are minorities

Census 2010 count data by block was used to identify areas with minority populations. US Census Bureau's 2006-2010 American Community Survey estimates by block group were used to identify population living below the poverty level and those with limited English proficiency^{xxiii}.

In the study area, the total population numbers 232,493³, of which 34% are minorities (79,278). Minorities include all individuals who are not 'white, not Hispanic' as reported by the US Census Bureau.

The poverty threshold is updated annually by the US Census Bureau mainly for statistical purposes to define the level below which annual incomes are considered too low to afford a socially acceptable amount of resources based on the number of people living in a household. In 2010, the poverty threshold for an average individual was \$11,139. For an average two-person household the threshold was \$14,218. For an average four-person household, the threshold was \$22,113^{xxiv}. In the study area, for the population for whom poverty status is determined, 15.5% are living below the poverty level.

For the population for which English language proficiency is calculated, 4.4% of the population in the study area have limited English proficiency, which is the population the US Census Bureau reported as speaking English less than 'very well.'

For all three statistical categories used to identify environmental justice populations, the study area population has higher concentrations than the regional average, as shown in Table 7. Also, there are great discrepancies when comparing the Amherst section to the Buffalo section of the study corridor. The Buffalo portion of the study corridor has substantially higher percentages of minorities and low income populations than the Amherst portion.

Table 7 Environmental Justice Population Comparison GBNRTC Region – Study Area

	Minority	LEP	Low Income
GBNRTC	20.5%	3.0%	13.8%
Study Area	34.0%	4.4%	15.5%
Amherst	17%	4%	8%
Buffalo	58%	5%	27%

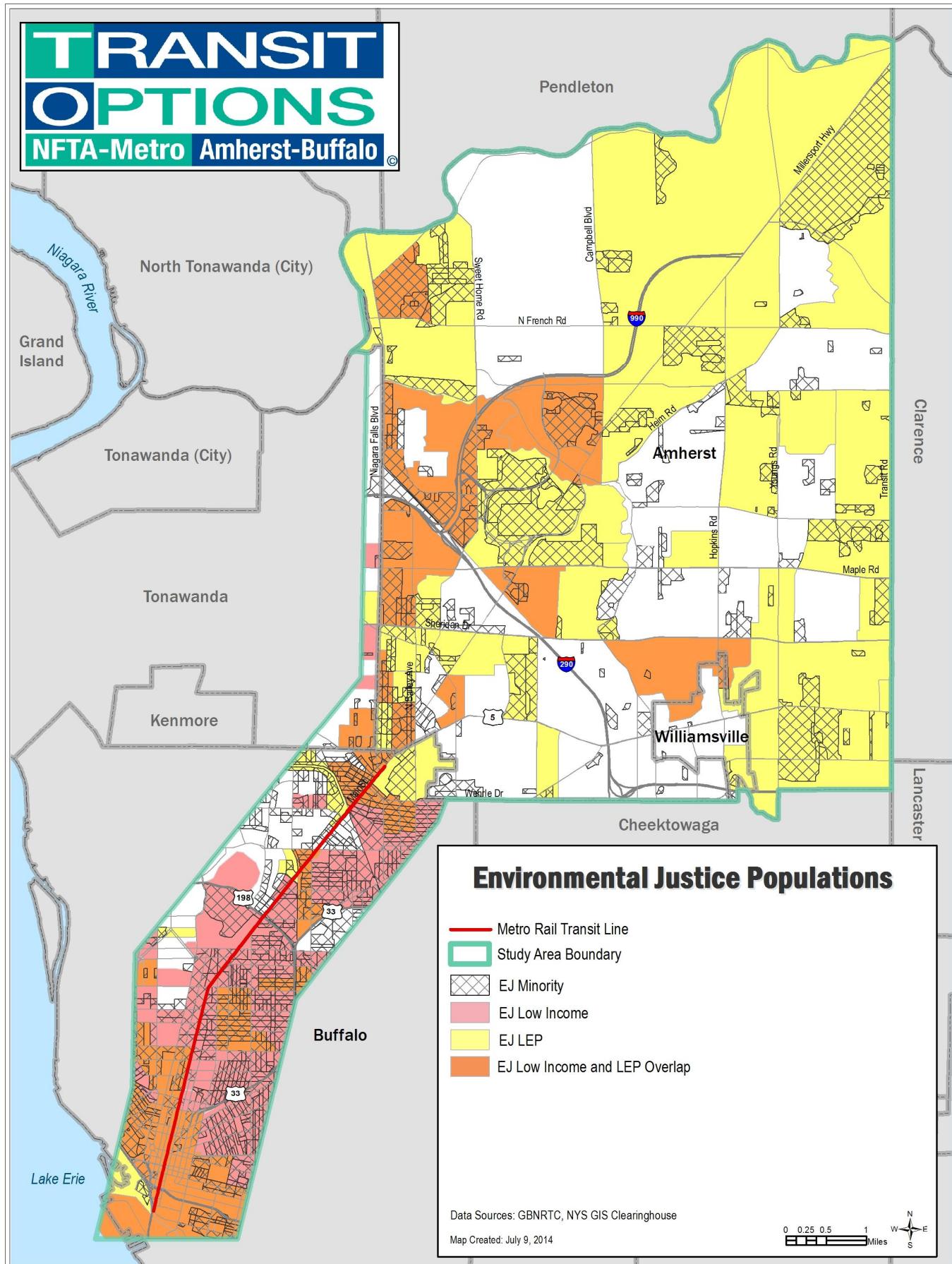
Source: 2010 Census, 2006-2010 American Community Survey

³ Based on count of 2010 Census numbers by block.

Figure 12 maps the location of the minority, low income and limited English proficiency populations in the study area. Minority populations are concentrated in pockets throughout the study area, with particularly high concentrations along the existing Metro Rail line in Buffalo and around the UB North Campus. Correspondingly, there are areas of limited English proficiency throughout the study area generally following the same pattern as the location of concentrations of minorities. Areas with the highest percentages of people living below the poverty level are found in Buffalo along the existing Metro Rail line and in the section of Tonawanda in the study area. Areas of both poverty and limited English proficiency are located in pockets in Buffalo and along the western portion of Amherst.

Of the 2,893 blocks in the study area, 1,021 (737 Buffalo, 284 Amherst) or 35% contain minority populations of 20.5% or more. Of the 235 block groups in the study area, 109 (90 Buffalo, 19 Amherst) or 46% contain 13.8% or more of the population living below the poverty level and 99 (47 Buffalo, 52 Amherst) or 42% contain 3% or higher of the population with limited English proficiency.

Figure 12 Environmental Justice Populations



2.7 Transportation

The existing transportation network and available transportation services in the study area are described in this section, as well as current travel patterns and traffic conditions on major roadways. Elements of the transportation infrastructure discussed include:

- Major Roadways and Bridges/Tunnels
- Airports
- Transit Services and Facilities
- Rail/Freight

Current travel patterns and traffic as well as roadway and transit system performance area also discussed. An overview of the transportation network in the region is shown in Figure 13.

2.7.1 Major Roadways and Bridges/Tunnels

The New York State Thruway (Interstate 90) is the major highway in the region, but only a small piece of the roadway is located in the study area along the southern Amherst boundary. Other interstates and expressways in the region include:

- North/south
 - I-290/Youngmann Expressway
 - I-990/Lockport Expressway
 - State Route 33/Kensington Expressway
- East/west
 - I-90/New York State Thruway
 - I-190/Niagara Thruway
 - State Route 324/Sheridan Drive
 - State Route 198/Scajaquada Expressway

The existing Metro Line operates along Main Street (Route 5) in Buffalo between downtown and UB South Campus. Other major corridors (principal arterials) in the study area include:

- North/south
 - Main Street/Route 5 (Buffalo)
 - Niagara Falls Boulevard/State Route 62
 - Delaware Avenue/Route 384
 - Bailey Avenue/County Route 152
 - Millersport Highway/Grover Cleveland Highway/State Route 263
 - Transit Road/State Route 78
 - Union Road/State Route 277
 - Elm Street/Oak Street/State Route 954D
 - South Elmwood Avenue
- East/west
 - Main Street/Route 5 (Amherst)
 - Sheridan Drive/State Route 324
 - Maple Road/County Route 192
 - Kenmore Avenue/County Route 307
 - Broadway/Route 954

- North and South Division Street
- Niagara Street
- Chippewa Street
- Church Street/Route 952G
- Court Street
- Edward Street
- Goodell Street
- Tupper Street

The study area also has numerous collectors, minor arterials and local roads for moving people and goods throughout the region. Additional information on roadway performance and traffic conditions are presented in a subsequent section.

There are a total of 154 bridge structures in the study area; 93 in the Amherst section of the study area and 61 in the Buffalo section of the study area from the National Bridge Inventory (2010). Additional information on bridges is presented in the section on roadway performance.

2.7.2 Airports

The primary airport in the region, the Buffalo Niagara International Airport is located to the south and east of the study area. Other aviation resources within the study area include heliports at the Erie County Medical Center and the Women's and Children's Hospital.

2.7.3 Public Transit

Public transit in the study area includes NFTA bus service, Rapid Transit/Metro Rail, and demand response service; intercity bus and rail; university bus service, and park and ride lots. A map of the transit network in the study area is provided in Figure 13.

NFTA is a large metropolitan transportation service provider with its main offices located in the Buffalo Metropolitan Transportation Center located at the corner of North Division and Ellicott Streets. NFTA Metro Bus service in the region includes 14 express bus routes, 40 regular bus routes, and three Metrolink van shuttle routes. A majority of these routes intersect with or serve a portion the Amherst-Buffalo Corridor. The Amherst portion of study area is served by the following NFTA Metro bus routes:

- Route 34-Niagara Falls Boulevard: This route has two branches. One runs between the Audubon Industrial Park and University Station, and the other runs between Amherst Development Park and University Station.
- Route 35-Sheridan: This route provides east-west service along Sheridan Drive in the Town of Tonawanda and into the Town of Amherst. It serves Boulevard Mall and Northtown Plaza as well as UB-North.
- Route 44-Lockport: This route runs primarily via Millersport Highway between Lockport and University Station. It serves UB-North and provides limited service to the Weinberg Campus.
- Route 47-Youngs Road: This route provides service between University Station and Erie County College North Campus, the Amherst International Industrial Park, and the Buffalo Niagara International Airport.
- Route 48-Williamsville: This route provides service between University Station and Erie County College North Campus and the Eastern Hills Mall primarily running along Main Street. Express service to and from downtown Buffalo is available on Metro Bus Route 66 -Williamsville from Transitown Plaza and along Main St. to the Thruway (I-90). The route serves the Main and Union park and ride lot.
- Route 49-Millard Suburban: This route runs via Sheridan Drive and other roads between University Station and Millard Fillmore Suburban Hospital.
- Route 64 - In addition, Metro Bus Route 64 is an express bus route running between Lockport, with a stop at CrossPoint Business Park, and downtown Buffalo.

Amtrak passenger rail service on the Lake Shore Limited (Chicago-Boston/New York City), Empire (New York City-Niagara Falls), and Maple Leaf (New York City-Toronto) lines operate through the station building in Depew, NY east of Buffalo. The Empire and Maple Leaf lines also operate through Exchange Street Station in downtown Buffalo.

Intercity bus service in the study area is provided by Greyhound (USA and Canada), Coach (USA and Canada), Megabus, New York Trailways, Adirondack Trailways, Pine Hill Trailways, Lakefront Lines, Fullington Trailways, and NeOn Bus. As with the local NFTA buses, intercity buses operate out of the Buffalo Metropolitan Transportation Center.

The University at Buffalo provides extensive bus and shuttle service for its students, faculty and staff, and visitors⁴. The main service is the Stampede bus service which runs between the North and South Campuses along Millersport Highway and Grover Cleveland Highway. The University also operates North Campus shuttle service, South/Downtown Campus shuttle service, and Mall/Market shuttle service. There are also private apartment shuttle services operated to and from the UB campuses^{xxv}.

There is one park and ride lot located in the study area located in Williamsville on Main Street and North Union Road for accessing the New York State Thruway.

2.7.4 Pedestrian and Bicycle Facilities

Within the study area there are bikeways and pedestrian paths, both on-road, and off-road, sidewalks, and other pedestrian and bicycle facilities. GBNRTC has a Bicycle Route Guide in print and interactive web formats available for area residents and visitors^{xxvi}. The interactive web map shows the bicycle level of service/relative safety of major roadway segments for use by cyclists in the region. The GBNRTC website also provides a link to an external website for residents to determine the 'walkability' of their neighborhood^{xxvii}.

GBNRTC has a regional Bicycle and Pedestrian Master Plan (2008) with specific goals and objectives to "...create an economically and environmentally healthy region, reverse current economic, land use, social, and demographic trends, promote growth in areas with existing infrastructure and promote equitable regional services for all residents." ^{xxviii} Additional information on the Plan is provided in the section on Future Conditions.

2.7.5 Rail/Freight/Ports

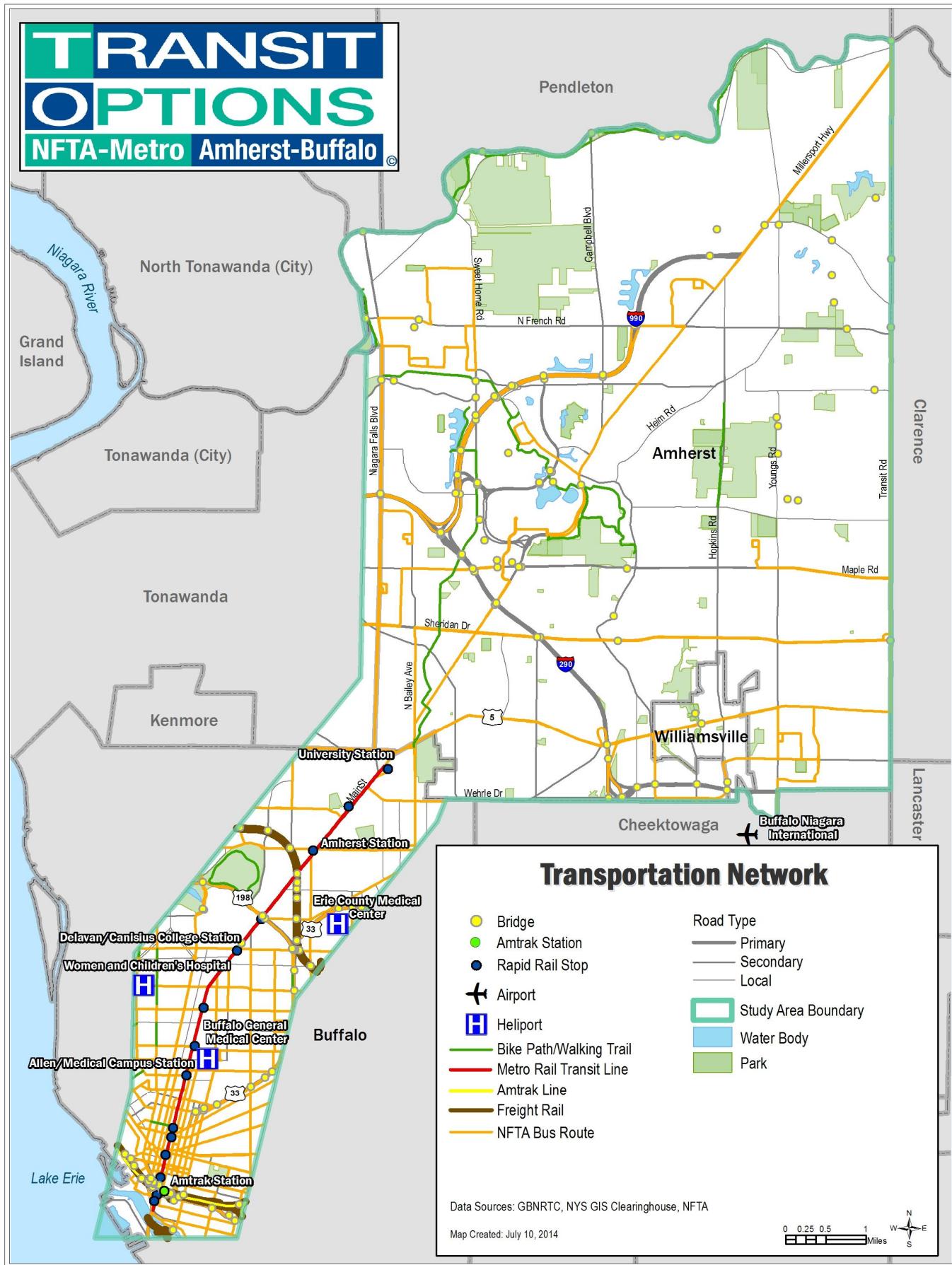
CSX Transportation, Inc., freight lines run through the study area in two locations in Buffalo (Belt Sub and Niagara Sub). CSX and General Mills have sidings and yards off the main line at the southern edge of the study area (Chicago Street and Ohio Street yards). The Port of Buffalo, owned and operated by Gateway Metroport is located near the study area and a satellite foreign trade zone is located near the Buffalo Niagara International Airport in Amherst^{xxix}.

2.7.6 Traffic Conditions

GBNRTC collects traffic count data on an ongoing basis. Average daily traffic count data for the most recent collection time period for each segment in the study area is presented in Figure 14. Larger, higher capacity roadways are able to carry higher traffic volumes than smaller roadways. In the study area, the roadway segments with the highest average daily traffic are listed in Table 8.

⁴ Visitors can ride only when accompanied by a member of the campus community or during a special event scheduled through the Parking & Transportation Services department.

Figure 13 Study Area Transportation Network



In the Amherst section of the study area, the short section of the New York State Thruway within the study area and the Youngmann Expressway (I-290) have the highest average daily traffic volumes. In the Buffalo section of the study area, the Kensington Expressway (Route 33) and the Niagara Thruway (I-190) have the segments with the highest average daily traffic.

Table 8 Study Area Roadway Segments with Highest Average Daily Traffic

Buffalo				
Roadway	Segment	Length	Lanes	AADT
Kensington Expressway	Grider Street to Olympic Avenue	3.5	6	105,450
Kensington Expressway	Scajaquada Expressway to Fillmore Avenue	2.0	6	99,900
Kensington Expressway	Fillmore Avenue to Grider Street	3.5	6	96,100
Niagara Thruway	Elm/Oak Streets to Route 5 Skyway	3.2	6	90,800
Niagara Thruway	Route 5 Skyway to Church Street	0.6	6	90,800
Niagara Thruway	Smith Street to Hamburg/Louisiana Streets	3.9	6	89,300
Niagara Thruway	Hamburg/Louisiana Streets to Elm/Oak Streets	4.6	6	87,700
Niagara Thruway	Church Street to Niagara Street	4.0	6	78,900
Kensington Expressway	Humboldt Parkway to Scajaquada Expressway	1.7	6	70,780
Scajaquada Expressway	Main Street to Kensington Expressway	4.0	6	69,300
Kensington Expressway	East Utica Street to Humboldt Parkway	2.9	6	65,150
Kensington Expressway	Jefferson Avenue to Best Street	3.8	6	60,300
Scajaquada Expressway	Parkside Avenue to Main Street	0.8	4	57,125
Kensington Expressway	Elm/Oak Streets to Jefferson Avenue	4.0	6	52,400
Amherst				
Roadway	Segment	Length	Lanes	AADT
NYS Thruway	Cleveland Drive to I-290	2.9	8	130,800
Youngmann Expressway	Millersport Highway to Sheridan Drive	4.5	6	113,200
Youngmann Expressway	Sheridan Drive to Main Street	9.6	6	108,800
Youngmann Expressway	I-990 to Millersport Highway	6.7	6	105,900
Youngmann Expressway	Main Street to I-90	4.2	6	105,700
Youngmann Expressway	Niagara Falls Boulevard to I-990	5.4	6	105,000
Youngmann Expressway	Colvin Boulevard to Niagara Falls Boulevard	9.4	6	98,300
Lockport Expressway	I-290 to UB Access	6.2	8	63,400
Niagara Falls Boulevard	Youngmann Expressway to Willow Ridge Drive	3.6	6	53,025
Millersport Highway	Youngmann Expressway to Maple Road	2.7	5	50,150

2.7.7 Roadway Performance

Roadway performance in the study area is discussed based on two characteristics: roadway level of service (congestion/capacity) and infrastructure condition. Data on level of service is presented by volume-to-capacity ratios built from 2008 GBNRTC highway network link information for morning and evening peak periods. Data on roadway infrastructure condition is from GBNRTC 2011 information.

Using highway network information from GBNRTC, traffic and congestion metrics were modeled for 2008 by roadway link. The results of this modeling effort are presented in Table 9 for the morning peak period of travel for the region. The metrics are broken down by volume-to-capacity (V/C) ratios for vehicle miles traveled (VMT) and vehicle hours traveled (VHT). V/C ratios are used to generally define congestion levels. V/C ratios greater than 1.0 correspond to severe congestion, V/C ratios between 0.70 and 1.0 refer to heavy congestion, and V/C ratios less than 0.70 correspond to

moderate, low, or no congestion as the values lower. Within the study area, most roadway segments experience moderate, low, or no congestion during peak commuting hours.

Table 9 Current (2008) Volume-to-Capacity Ratio, Vehicle Miles Traveled, and Vehicle Hours Traveled for the Morning Peak Period

	VMT	%	VHT	%
	2008		2008	
Under 0.70	3,377,843	91%	91,976	88%
0.70 - 1.0	336,716	9%	11,399	11%
1.0 +	10,757	0%	700	1%
Total	3,725,316		104,075	

Current V/C ratios by roadway segment for the morning peak period are presented in Figure 15. As of 2010, the region had the lowest congestion of any similarly sized metropolitan area in the county^{xxxiv}. That being said, segments with high or severe levels of congestion are highlighted in Figure 15 and are generally located at major roadway intersections around the study area.

Roadway infrastructure condition, described using surface score data, is presented for the study area in . Surface scores are also known as indicators of pavement condition and are rated on a scale from poor to excellent based on the amount of corrective action needed to prevent further deterioration. GBNRTC describes pavement condition/surface score based on the number of lane miles considered deficient; which for GBNRTC are surface scores less than 6^{xxxv}. Within the study area, 8% of the total miles of roadway included in GBNRTC's database within the study area have a surface score considered 'deficient.' Again there is discrepancy between the Amherst and Buffalo sections of the study area with the Buffalo portion of the study area having 3 times the percentage of deficient roadway miles as the Amherst section. lists the roadway segments and total roadway mileage with a surface score less than 6 within the study area.

Table 10 Study Area Roadway Surface Score

Surface Score	Deficient Segments	Total Segments	%	Deficient Miles	Total Miles	%
Study Area	<u>81</u>	<u>560</u>	<u>14.5%</u>	<u>67</u>	<u>835</u>	<u>8.0%</u>
Amherst	8	181	4.4%	16	509	3.1%
Buffalo	73	379	19.3%	51	326	15.6%

Source: GBNRTC

Table 11 lists the bridges in the study area by bridge condition from the National Bridge Inventory (2010)^{xxxvi}. In the study area as a whole, 3.9% of the bridges are listed as structurally deficient^{xxxvii}. Thirty-one percent are listed as functionally obsolete. A much higher percentage of the bridges in the Buffalo section of the study area are deficient or obsolete than the Amherst section of the study area.

Table 11 Study Area Bridge Count and Condition

Bridges	Structurally Deficient	%	Functionally Obsolete	%	Not Deficient	%	N/A	%	Total
Study Area	<u>6</u>	<u>3.9%</u>	<u>48</u>	<u>31.2%</u>	<u>85</u>	<u>55.2%</u>	<u>15</u>	<u>9.7%</u>	<u>154</u>
Amherst	2	2.2%	19	20.4%	69	74.2%	3	3.2%	93
Buffalo	4	6.6%	29	47.5%	16	26.2%	12	19.7%	61

Source: National Bridge Inventory 2010

Figure 14 Study Area Average Daily Traffic by Roadway Segment

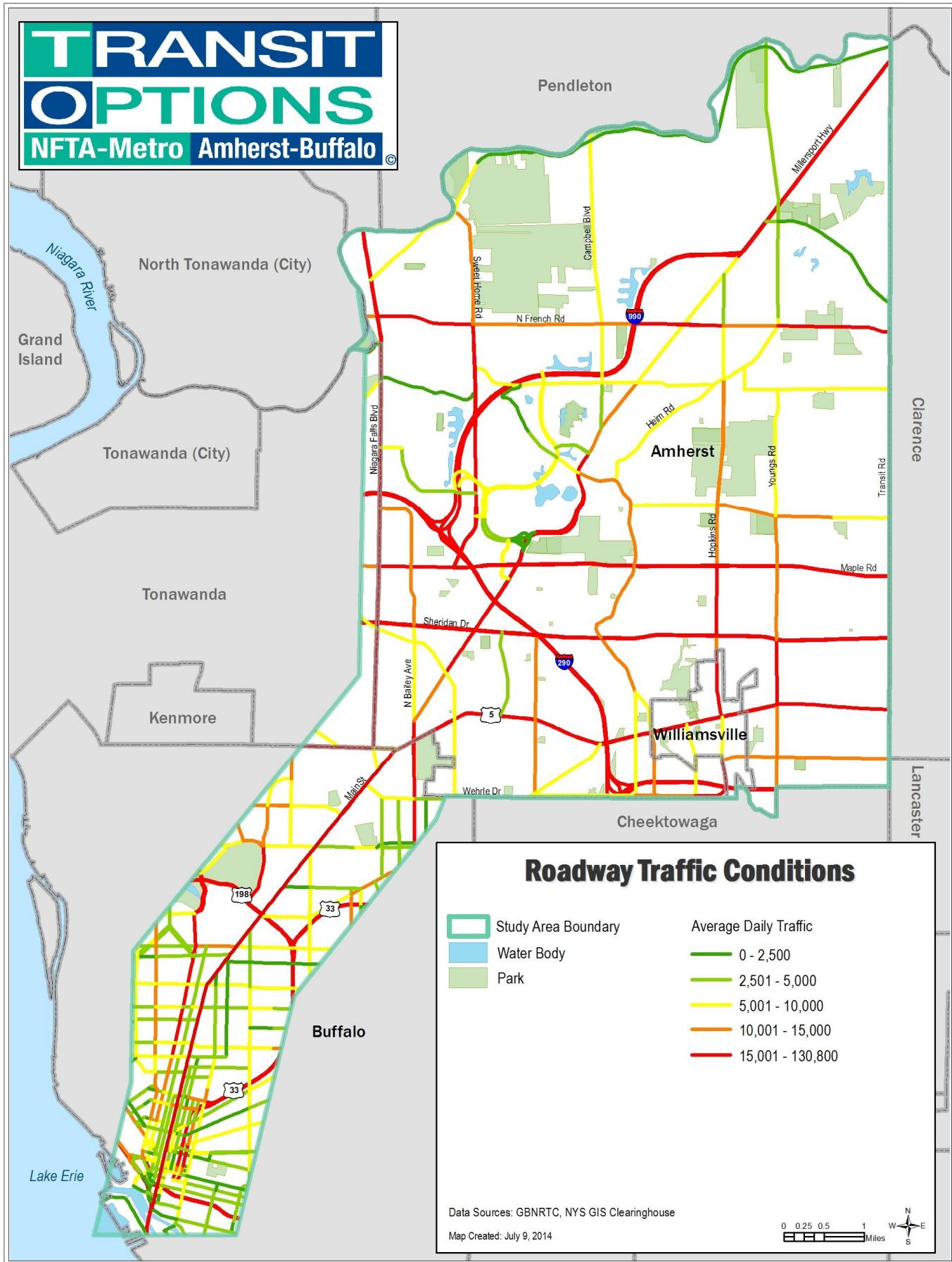


Figure 15 Current (2008) Volume-to-Capacity Ratio by Link for the Morning Peak Period

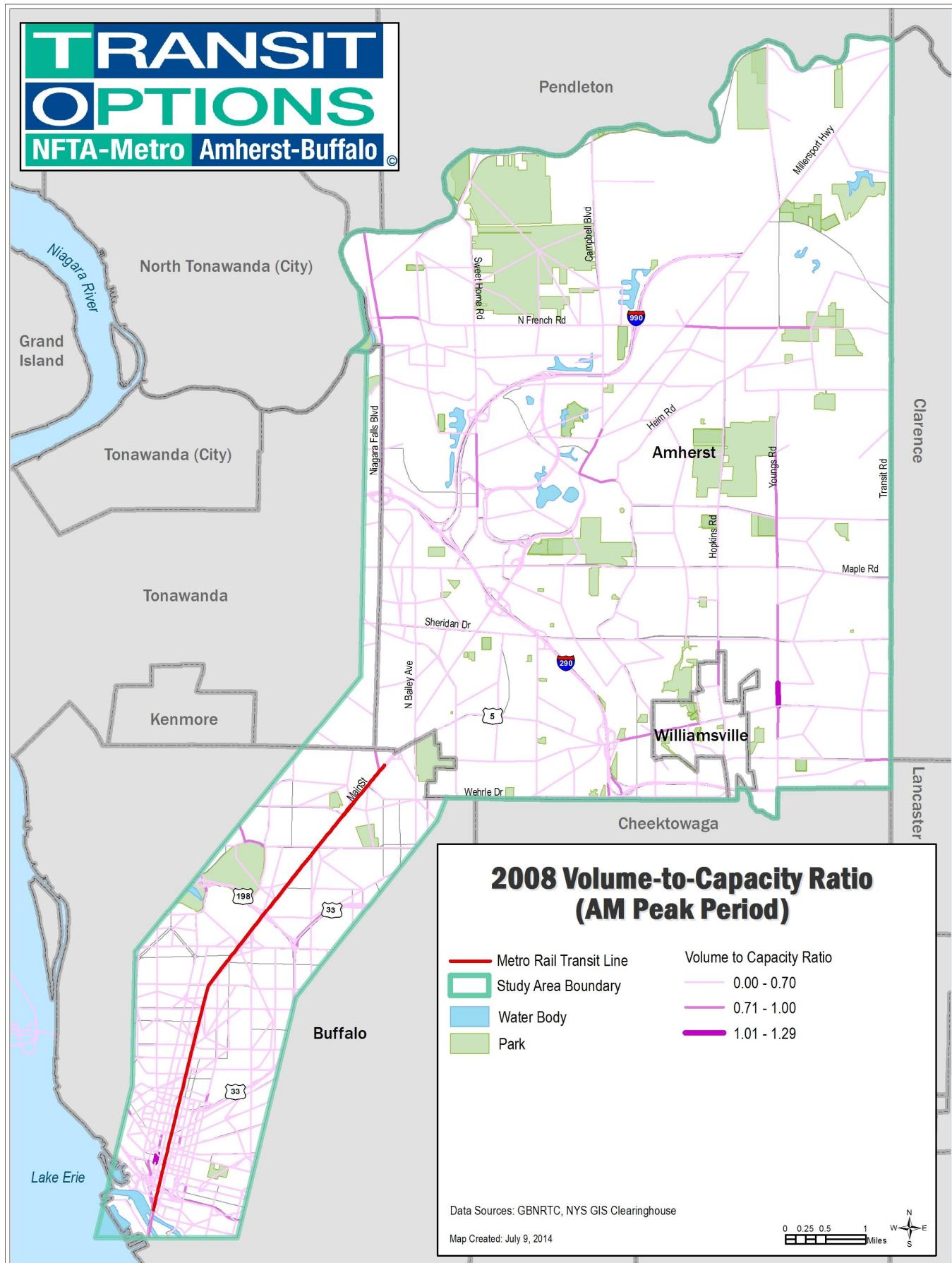
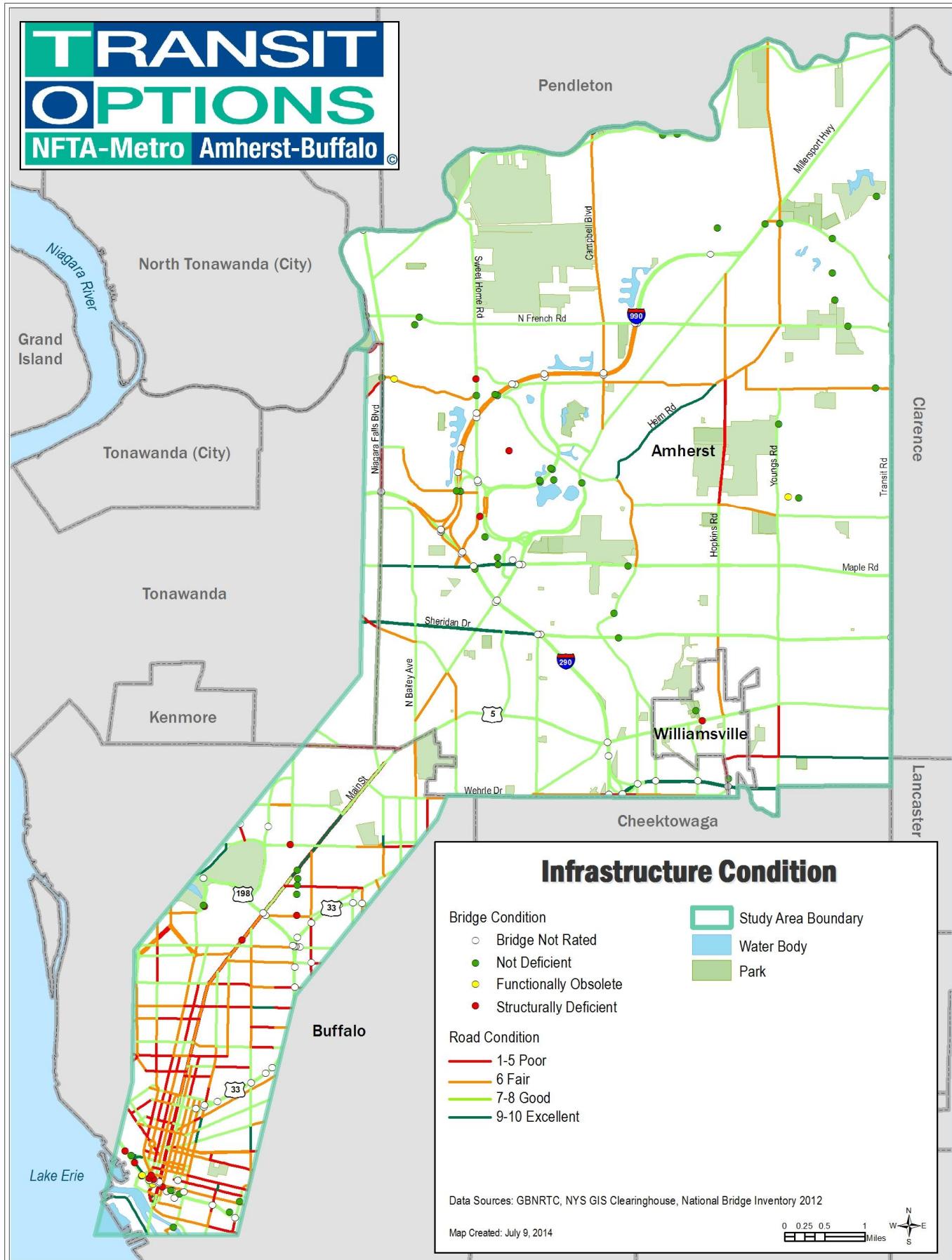


Figure 16 Study Area Infrastructure Condition



2.7.8 Transit System Performance

NFTA transit system performance is described using two methods of analysis/statistical representation: annual ridership and efficiency/effectiveness figures by mode for the past 5 years system-wide and current average passenger boardings by day by station/bus stop. Data for the system-wide measures came from the National Transit Database and boardings and alightings by bus stop/station data came from NFTA for 2012.

lists 2007-2011 operating characteristics by mode for the NFTA system. Over the past 5 years, passenger trips have increased on all modes of travel on the NFTA network, especially for demand response trips, which have increased by 67%. Trips by bus have increased by 17% and trips by light rail have increased by 4%. Cost per trip has gone down over the period for both bus trips and demand response trips while cost per hour has gone down for light rail and demand response services.

The amount of service provided also increased over the period for all modes, as did, correspondingly, the overall operating costs. However, light rail service had an increase in service hours of 13.5% for only a 6% increase in operating cost. For demand response service, hours were increased by 51% with only a 30% increase in operating cost. For bus, the percentages were more evenly matched.

Table 12 NFTA Operating Characteristics and Performance by Mode 2007-2011

	2007	2008	2009	2010	2011	% Change
Bus						
Passenger Trips	18,207,585	20,387,141	21,399,200	20,446,161	21,229,706	16.6%
Vehicle Revenue Hours	759,142	806,411	805,514	798,945	806,106	6.2%
Operating Cost	\$85,505,809	\$89,212,045	\$94,396,052	\$91,262,560	\$91,945,008	7.5%
Trips/Hour	24	25	27	26	26	9.8%
Cost/Hour	\$113	\$111	\$117	\$114	\$114	1.3%
Cost/Trip	\$5	\$4	\$4	\$4	\$4	-7.8%
Light Rail						
Passenger Trips	5,850,313	5,680,505	6,805,512	6,215,596	6,061,323	3.6%
Vehicle Revenue Hours	73,517	75,357	79,170	83,892	83,430	13.5%
Operating Cost	\$23,303,848	\$23,440,156	\$24,209,885	\$23,571,179	\$24,702,799	6.0%
Trips/Hour	80	75	86	74	73	-8.7%
Cost/Hour	\$317	\$311	\$306	\$281	\$296	-6.6%
Cost/Trip	\$4	\$4	\$4	\$4	\$4	2.3%
Demand Response						
Passenger Trips	87,888	105,690	125,192	137,867	146,629	66.8%
Vehicle Revenue Hours	56,779	63,746	79,354	80,993	85,834	51.2%
Operating Cost	\$4,707,774	\$5,123,323	\$5,558,727	\$6,050,100	\$6,138,246	30.4%
Trips/Hour	2	2	2	2	2	10.4%
Cost/Hour	\$83	\$80	\$70	\$75	\$72	-13.8%
Cost/Trip	\$54	\$48	\$44	\$44	\$42	-21.8%

Source: National Transit Database

In order to show concentration of activity on the transit network in the study area, and to get an idea of movement on the transit network, Figure 17 maps boarding and alighting counts (activity) at each bus stop/station for an average weekday. Within the study area, the average daily boardings are summarized in Table 13. The bus stops and stations in the study area are averaging nearly 200,000 boardings per week. For the Metro Rail service, Table 14 lists the average daily boardings and alightings by station. The Metro rail service averages 107,000 boardings per week. University Station has the highest amount of weekday activity of all the Metro Rail stations.

Table 13 NFTA Average Daily/Weekly Boardings in the Study Area

Average Time Period	Weekday Boardings	Saturday Boardings	Sunday Boardings	Weekly Average
Study Area	<u>35,981</u>	<u>10,892</u>	<u>6,823</u>	<u>197,620</u>
Amherst	3,074	1,095	701	17,166
Buffalo	32,907	9,797	6,122	180,454

Source: NFTA 2012

Table 14 NFTA Average Weekday Ridership by Metro Rail Station

Metro Station	Boardings	Alightings
University Station	3,246	3,112
LaSalle Station	1,243	1,254
Amherst Station	1,575	1,490
Humboldt Station	860	800
Delavan/Canisius College	1,313	1,063
Utica Station	1,998	2,373
Summer-Best Station	972	957
Allen/Medical Campus Sta.	1,367	1,358
Fountain Plaza Station	2,467	2,544
Lafayette Station	2,454	2,467
Church Street Station	2,162	2,466
Seneca Station	819	781
Erie Canal Harbor Station	919	730
Totals	21,395	21,395

Source: NFTA 2013

The highest concentrations of bus stop activity on the transit network are obviously within the Buffalo portion of the study area as the availability of service is much greater in Buffalo than it is in Amherst and Tonawanda. For the Amherst section of the study area, bus stops with 50 or more boardings per weekday are discussed below. For the Buffalo portion of the study area, bus stops with 250 or more daily boardings are discussed. In Buffalo within the study corridor there are 133 bus stops with 50 or more average daily boardings (57 stops/stations with 100 or more daily boardings).

The bus stops/stations with the largest number of boardings in the Buffalo portion of the study area are listed in Table 15. UB South Campus has the highest number of bus stop boardings with an average of 3,245 daily at the multiple stops at University Station on Main Street. The rest of the bus stops with more than 250 daily boardings are located downtown or closer to downtown. Utica Station has 1,434 average daily boardings, North Division Street at Main Street has 1,365 average daily boardings, and North Division Street at Ellicott Street has 1,204 average daily boardings.

Table 15 NFTA Bus Stops/Stations with the Highest Number of Average Daily Boardings (Study Area, Buffalo only)

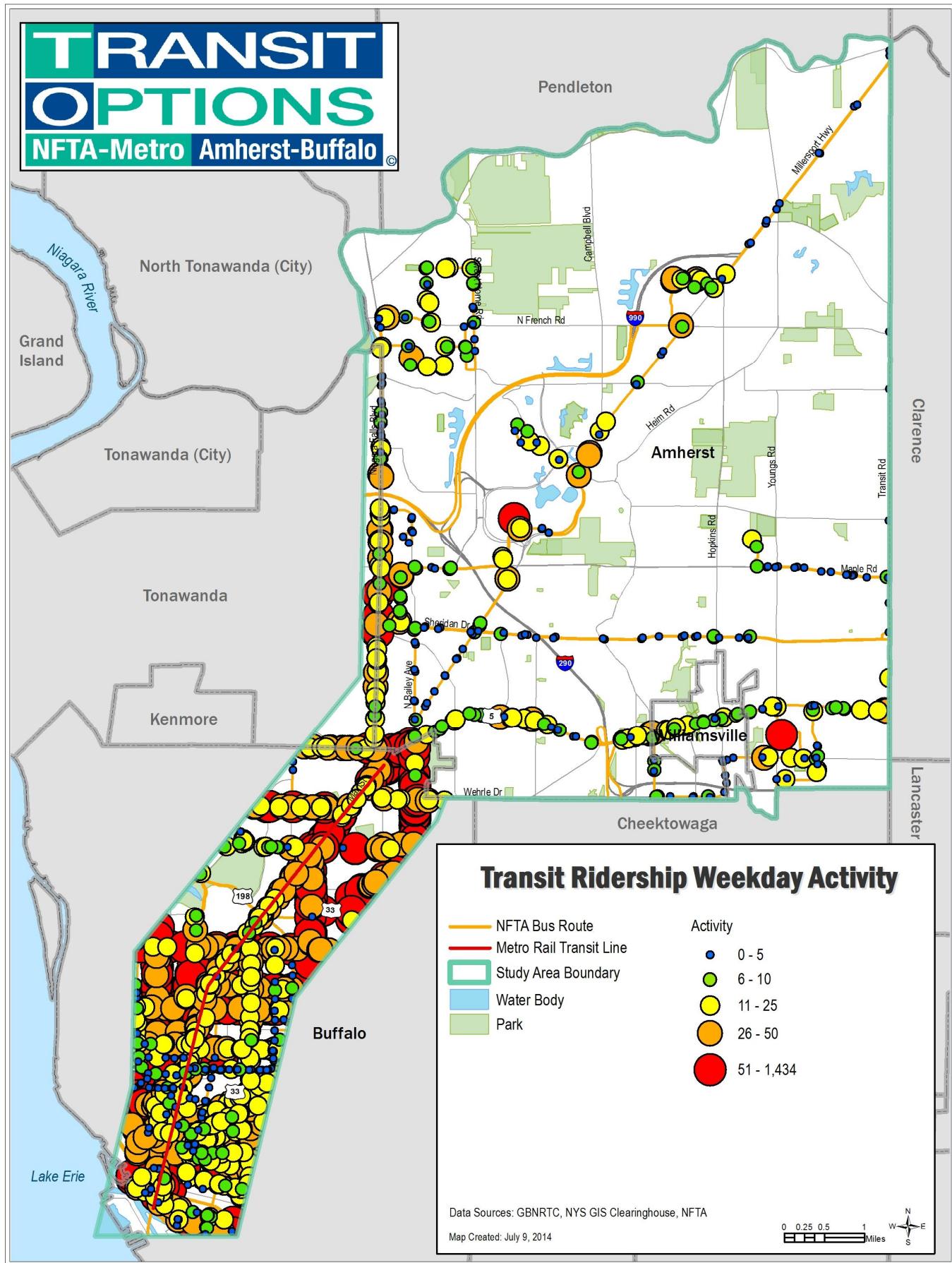
Bus Stop Location	Weekday Boardings	Saturday Boardings	Sunday Boardings
Main Street at University Station (several stops)	3,245	1,103	721
Utica Station	1,434	369	260
North Division Street at Main Street	1,365	420	196
North Division Street at Ellicott Street	1,204	368	216
South Division Street At Ellicott Loop	543	258	202
Ellicott Street At William Street	534	273	113
Ellicott Street At North Division Street	527	274	196
Court Street At Main Street	508	175	68
Court Street At Niagara Square	480	102	66
Washington Street At South Division Street	471	144	90
Washington Street At South Division Street	468	140	99
Court Street At Pearl Street	444	127	48
Washington Street At Mohawk Street	434	102	73
Church Street At Franklin Street	364	68	41
Church Street At Main Street	361	75	63
Court Street At Franklin Street	318	46	26
South Division At Washington Street	290	97	112
Hutchinson Central Technical High School	288	2	3
Amherst Street Station	284	153	72
Niagara Street At Niagara Square	257	71	30

Source: NFTA 2012

In the Amherst section of the study area, the bus stop with the highest activity is right on the Buffalo border at UB South (Kenmore Avenue at Windermere Boulevard) with 510 weekday boardings. Other bus stops with high activity in Amherst are ECC North Campus (229), UB North (92), University Plaza (75) and Kenmore Avenue at Niagara Falls Boulevard (58). In Tonawanda, the bus stops with the highest weekday boardings are Niagara Falls Boulevard at Briarhurst Drive with 151 daily boardings and Niagara Falls Boulevard at Eggert Road with 53 daily boardings. The bus stops with the highest concentration of activity in this section of the study area are generally located along the Niagara Falls Boulevard portion of the study corridor between Sheridan Drive and Maple Road.

The University at Buffalo operates the Stampede bus service and campus shuttles. During peak times, the Stampede carries about 24,000 passengers per day. In 2012, the Stampede served 3,760,000 annual passengers^{xli}.

Figure 17 NFTA Weekday Activity by Bus Stop/Station



2.8 Environment

Environmental resources discussed in this section include hydrologic/water, natural/conservation, agricultural/timber lands, and geologic resources as well as air quality and contamination/hazardous materials.

2.8.1 Hydrologic/Water Resources

This section identifies the hydrology (streams, rivers, lakes, ponds, etc.) watersheds, floodplains, groundwater resources, and wetlands within the study area. Lake Erie and the Niagara River are the major water features in the region. Within the study area, however, water resources are primarily concentrated in Amherst. Figure 18 is a map of the water resources located within the study area.

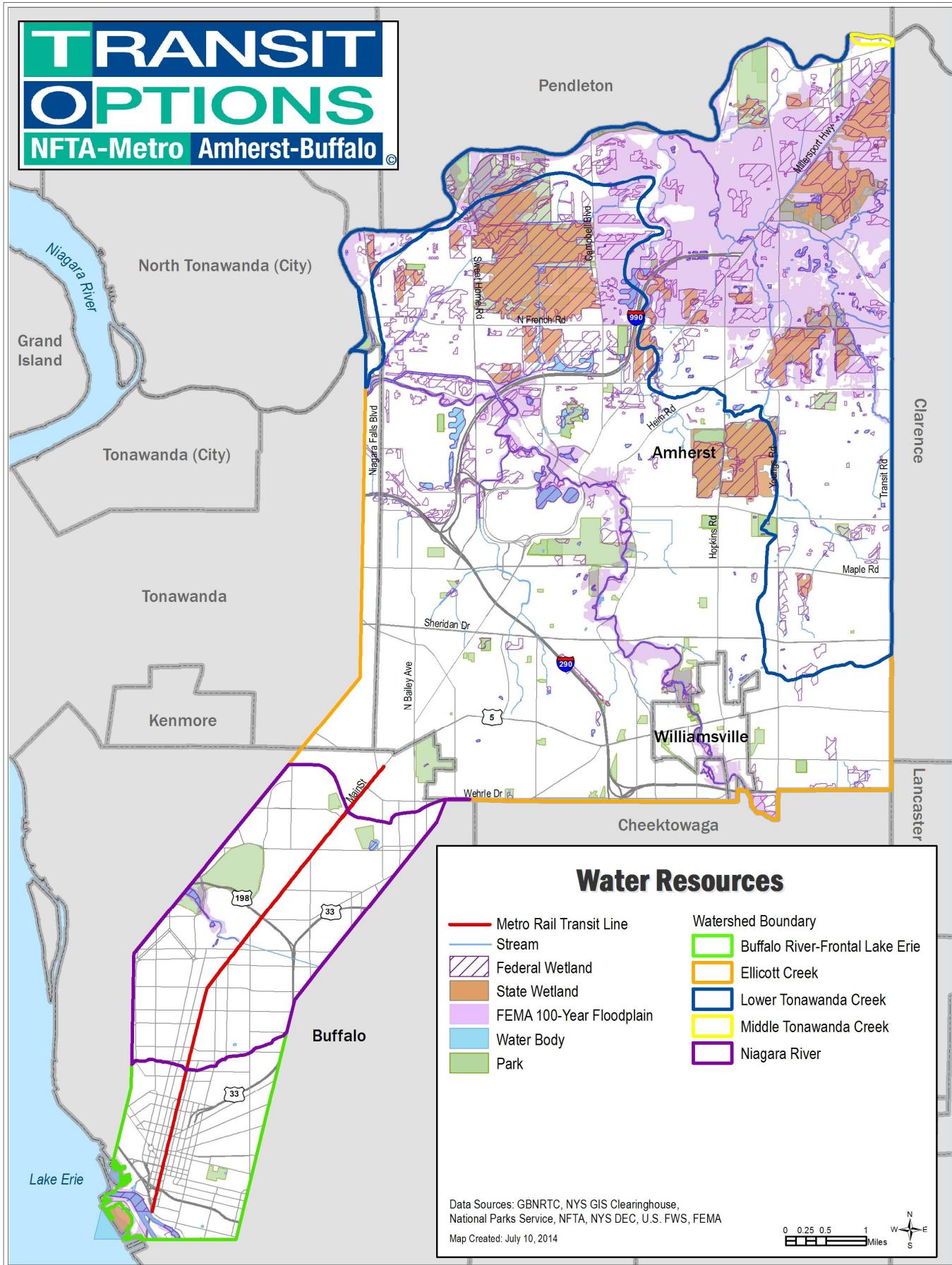
Tonawanda Creek, which flows into the Niagara River, forms the northern edge of the Amherst (study area) boundary. Tonawanda Creek is part of the Erie Canal from the canal confluence at the Amherst/Pendleton border at Tonawanda Creek Road to the Niagara River. Ellicott Creek flows through the center of the study area in Amherst, north from Buffalo Niagara International Airport before emptying into the Tonawanda Creek near its Niagara River confluence. Ransom, Black, and Got Creeks are located in northeast Amherst and Lake La Salle is located on the UB-North Campus. Floodplains in the study area are concentrated along Tonawanda Creek in northeastern Amherst and along Ellicott Creek through central Amherst^{xlii}.

Both state and federal wetlands are shown in Figure 18, many of which lie within parks or conservation areas (except for the concentration along the Lockport Expressway), and most of which are in Amherst. Other than wetlands along Lake Erie at the southern edge of the study area, there are few wetlands in Buffalo. There are some wetlands in Delaware Park and Forest Lawn Cemetery as well as in McCarthy Park.

Regarding groundwater, there are no primary aquifers in the study area. In northeast Amherst there is an unconsolidated confined aquifer with no overlying surficial aquifer. In the southeastern portion of the study area in Buffalo, there is an unconsolidated unconfined mid-yield aquifer. There are also a few water wells within the study area.

The study area is situated within the Middle Tonawanda Creek, Lower Tonawanda Creek, Ellicott Creek, Niagara River, and Buffalo River-Frontal Lake Erie watersheds from north to south.

Figure 18 Study Area Water Resources



2.8.2 Natural Conservation Resources

Natural conservation resources include forests, parks, recreation areas, wild and scenic rivers, critical habitats and threatened and endangered species. With regard to natural conservation resources in the study area, most features were identified in the earlier section on parks and recreation areas. Additionally, the Great Baehre Swamp Wildlife Management Area is located within the Great Baehre Conservation Area. This area is also a critical habitat (significant natural/ecological community) as defined by the New York State Department of Conservation. Another critical habitat (Times Beach Diked Disposal Area) is located along the Lake Erie boundary of the study area in Buffalo. It is noted as an area of significant coastal fish and wildlife habitats by the New York State Department of State Division of Coastal Resources. National conservation resources are mapped in Figure 19.

There are no national forests, national parks, national wildlife refuges, bird conservation areas, or wild and scenic rivers in the study area. Wetlands were discussed in a previous section.

2.8.3 Geologic Resources

Geologic resources include the topography, soils, and subsurface geologic conditions of the study area, as well as mining and groundwater resources. Geologic hazards include soils with naturally occurring asbestos, soils with steep slopes and landslide susceptibility, karst terrain, and seismic conditions. Geologic resources and hazards are shown in Figure 20.

In the study area, the majority of land area is comprised primarily of shale and secondarily of dolostone/dolomite. The southcentral area is made primarily of dolostone/dolomite and secondarily of shale. The southern section of the study area is made of primarily limestone and secondarily of sandstone. Elevations in the study area generally span between 570 and 700 feet above sea level. There are no steep slopes⁵ in the study area as identified by Erie County^{xliii}.

According to USGS, there are no active mineral plants or mines within the study area^{xliv}. The Wehrle Quarry, owned by Buffalo Crushed Stone, is currently active and located immediately adjacent to the study area near the southeastern border of Amherst. In the past, crushed stone resources were identified at the North and South Quarry/Buffalo Quarry and Mill in southeastern Amherst and at Eastern Limestone Operation in southern Buffalo as well as perlite resources at the Buffalo Perlite Plant, but none of these operations are currently active.

As noted in the discussion on hydrology, there are no primary aquifers in the study area. In northeast Amherst there is an unconsolidated confined aquifer with no overlying surficial aquifer. In the southeastern portion of the study area in Buffalo there is an unconsolidated unconfined mid-yield aquifer. There are also a few water wells within the study area as well as gas wells and dry holes (discussed later in the section on Contamination and Hazardous Waste). The southern portion of the study area is located within two regions of karst topography⁶. The regions in the study area are described as follows⁷:

Short (4): Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of carbonate rock.

Short (7): Fissures, tubes and caves generally less than 1,000 ft (300 m) long; 50 ft (15 m) or less vertical extent; in gently dipping to flat-lying beds of gypsum^{xlv}.

According to USGS data for the eastern United States, there are no reported natural asbestos occurrences within the study area^{xlii}.

⁵ All slopes in the study area are less than 8%.

⁶ USGS definition: Areas containing distinctive surficial and subterranean features developed by solution of carbonate and other rocks and characterized by closed depressions, sinking streams, and cavern openings.

⁷ As defined at the national scale by USGS.

Figure 19 Study Area Agriculture and Natural Conservation Resources

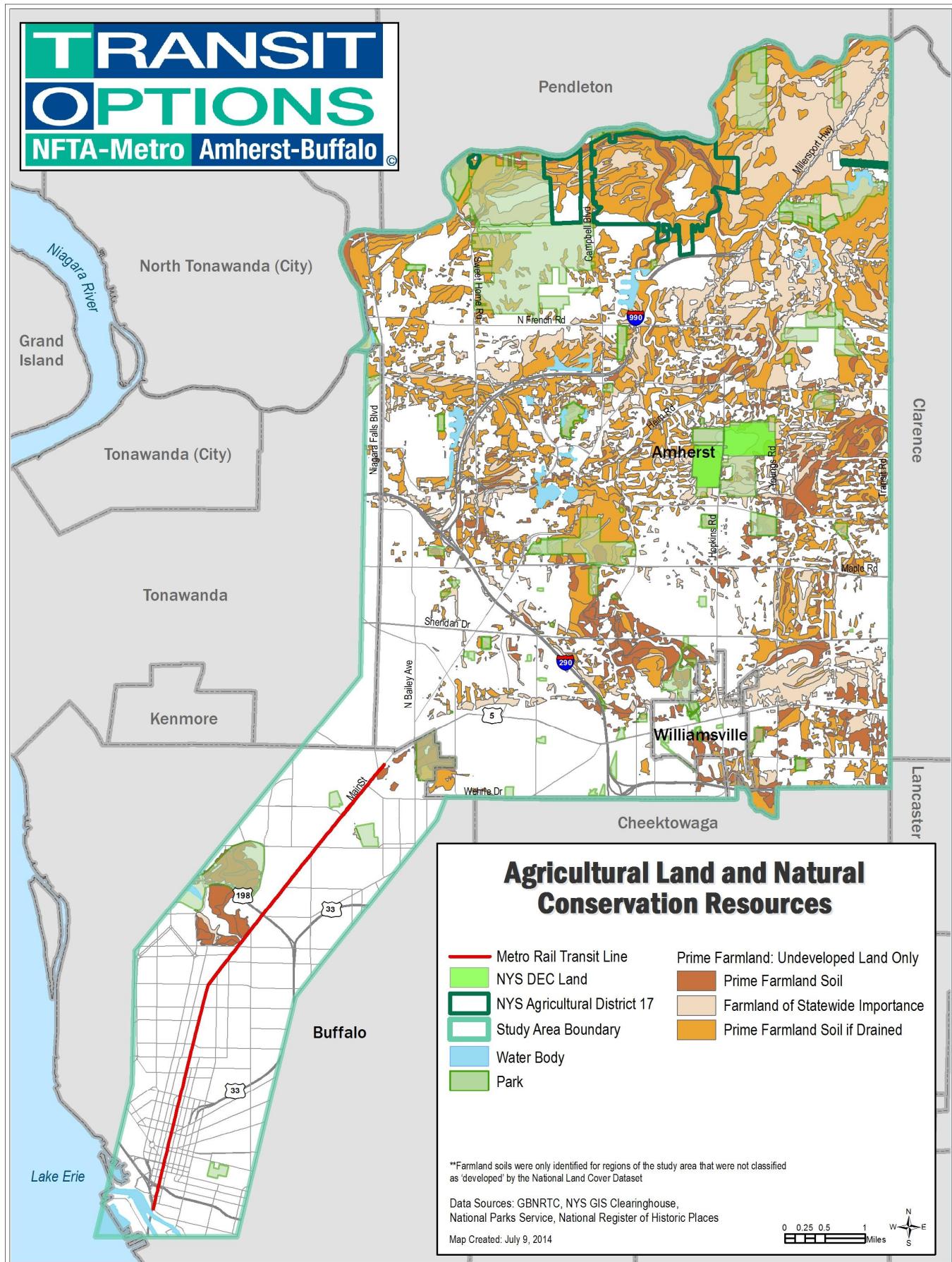


Figure 20 Study Area Topography and Geology

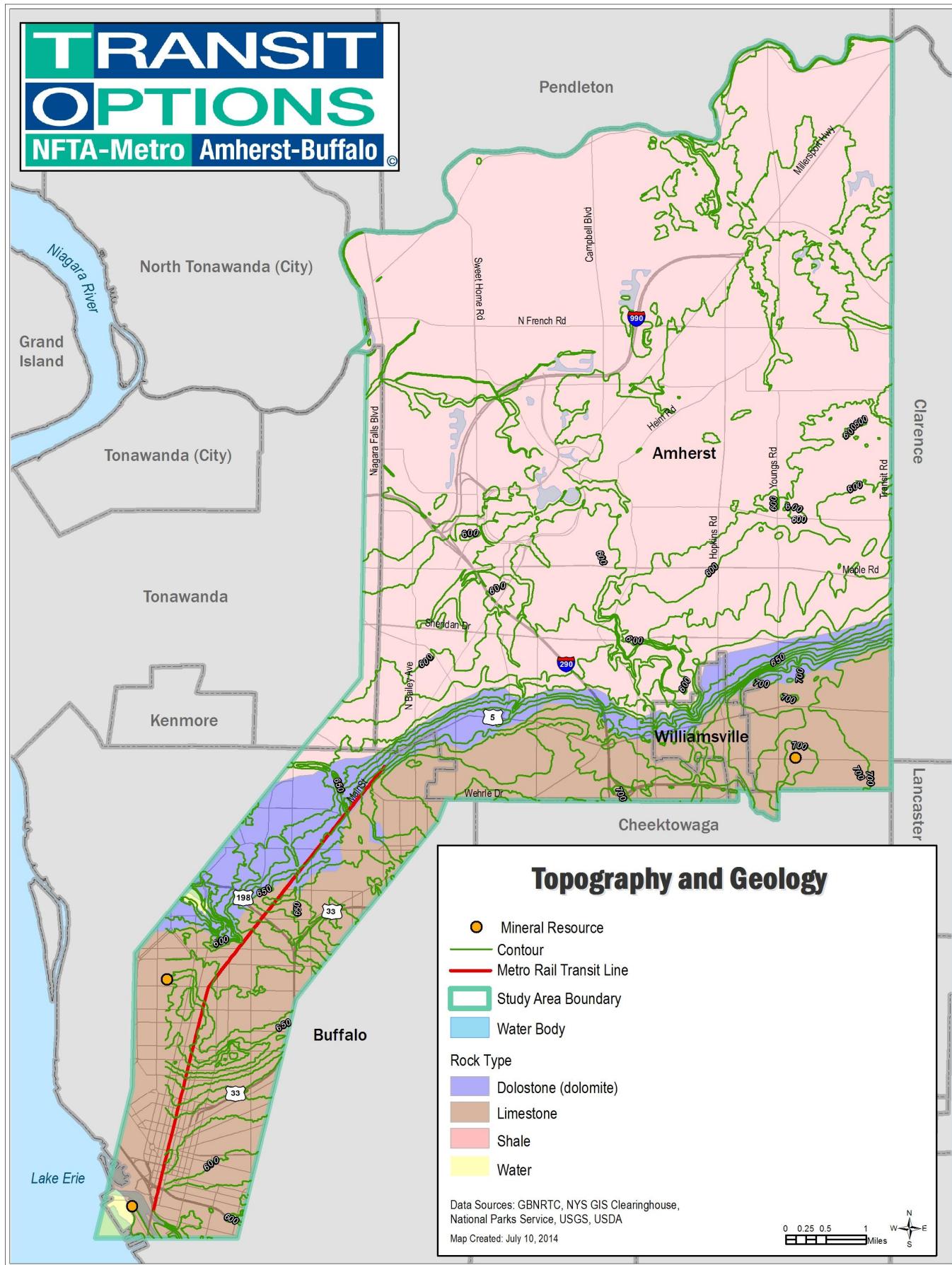
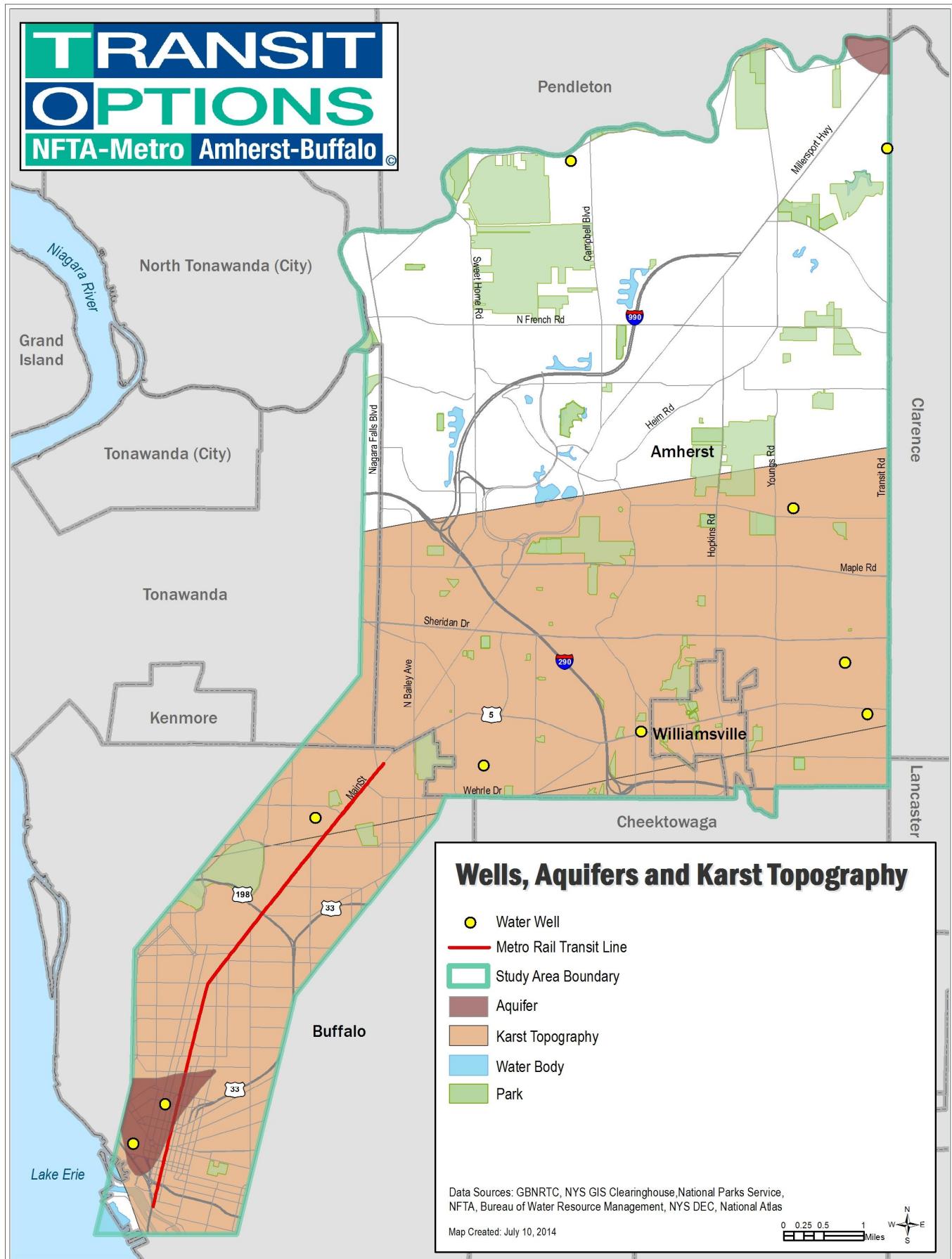


Figure 21 Study Area Wells, Aquifers, and Karst Topography



There are no faults within the study area. There is a pop-up structure and a topographic linear feature to the southeast of the study area on the boundary between Clarence and Lancaster (Wehrle Quarry). There is also a topographic linear feature south of the study area on the boundary between Buffalo and West Seneca.

There are no previous significant earthquakes on record in the study area^{xlvii}. The entire study area is within the 2-3% acceleration due to gravity range due to seismic activity,⁸ which is a relatively low probability of seismic hazard^{xlviii}. With regard to landslide susceptibility and occurrence, the entire study area is in a region of moderate susceptibility to land sliding and low incidence^{xlix,9}.

2.8.4 Agricultural Lands

Agricultural lands are defined in districts by New York State Department of Agriculture and Markets¹⁰ and by soil type by the USDA Natural Resources Conservation Services (NRCS)¹¹. New York State Agricultural District 17 is located within the study area in northern Amherstⁱⁱ. Agricultural District 14 is located in adjacent Clarence. NRCS defines prime agricultural lands by soil type regardless of existing land use¹¹. District 17 along with prime farmland soils only for land areas not classified as 'developed'¹² by the 2006 National Land Cover Dataset (NLCD) are mapped in Figure 19ⁱⁱⁱ.

Agricultural District 17 is comprised of 1,432 acres in northern Amherst. In the study area, agricultural lands are classified by NRCS as 'prime farmland,' 'prime farmland if drained,' and 'farmland of statewide importance.' In Table 16 farmland soils are listed by type for the study area as a whole as well as for only the portion of the study area considered 'undeveloped' by the NLCD.

Table 16 Study Area Farmland Soils

Farmland Soil Classification	Study Area	Non-Developed Land/Open Space within Study Area
Prime Farmland Soil (acres)	4,204	2,539
Prime Farmland Soil if Drained (acres)	13,254	7,991
Farmland of Statewide Importance (acres)	7,763	5,486
Not Prime Farmland Soil (acres)	17,974	5,470
Total	43,195	21,486

2.8.5 Air Quality

Air quality refers to the level of pollutants in the atmosphere. Existing conditions for air quality are based on understanding the attainment status for criteria pollutants established by the US Environmental Protection Agency (EPA). The attainment status refers to whether or not a geographic area is within the allowable limits for certain air pollutants. Based on information from the EPA Green Book, neither Erie nor Niagara County is within an 8-hour ozone nonattainment area^{liv}. Thus, the GBNRTC region is in attainment for the 2008 ozone standard^{iv}.

⁸ 10% probability of exceedance in 50 years based on information produced at the national scale.

⁹ As reported by the USGS on a national scale.

¹⁰ NYS Department of Agriculture and Markets defines the purpose of the agricultural districting program as follows: "...to encourage the continued use of farmland for agricultural production. The Program is based on a combination of landowner incentives and protections, all of which are designed to forestall the conversion of farmland to non-agricultural uses."

¹¹ USDA NRCS defines 'prime farmland' as follows: "...land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses."

¹² Except 'Developed, Open Space'; this is included.

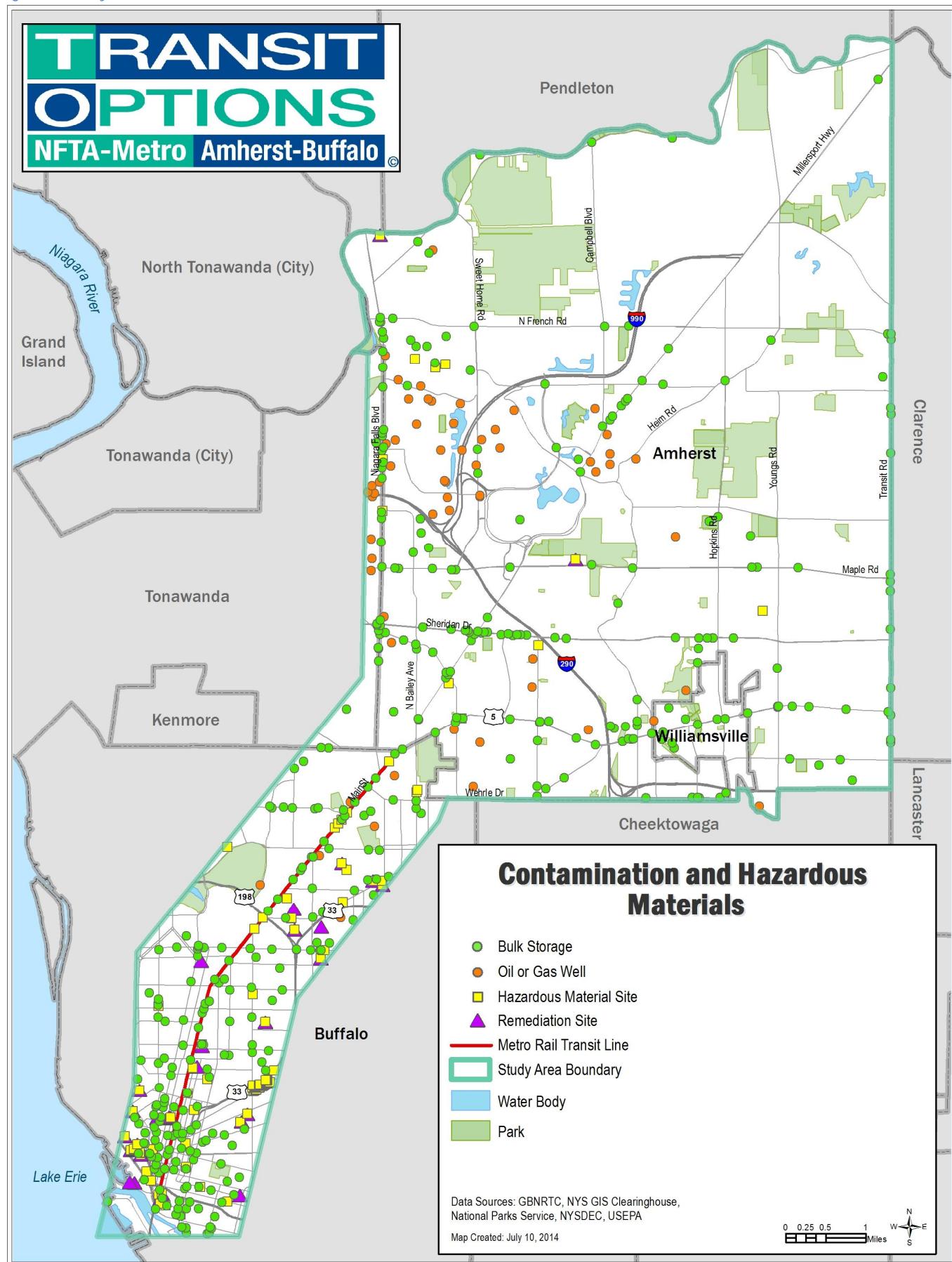
2.8.6 Contamination/Hazardous Waste

Hazardous wastes and contaminated materials are substances that are dangerous or potentially harmful to public health or to the environment. Hazardous waste and contaminated materials sites are properties that have been impacted by such substances in the soil, soil gas, or groundwater. This section includes information on the location of hazardous materials sites including brownfields, Resource Conservation and Recovery Act (RCRA) hazardous waste; gas wells and dry holes; bulk petroleum and chemical storage facilities; and environmental remediation sites.

In the study area the majority of the gas wells are for gas development. There are no oil bulk storage facilities. Bulk petroleum facilities are generally concentrated along the principal arterial roadways in the study area. Hazardous waste sites are more prevalent in Buffalo within the study area and gas wells are primarily in Amherst and Tonawanda in the study area.

Environmental remediation sites are those currently included in one of the remedial programs overseen by the New York State Department of Environmental Conservation/Division of Environmental Remediation. Existing remediation sites are generally found in the downtown Buffalo portion of the study corridor. Figure 22 is a map of study area contamination and hazardous materials sites.

Figure 22 Study Area Contamination and Hazardous Materials Sites



3.0 FUTURE CONDITIONS

Future conditions are discussed in the context of regional plans, municipal and development plans, projected population and employment, and the regional long-range transportation plan. GBNRTC forecasts future conditions through their long-range planning efforts (the 2035 Long-Range Transportation Plan update and the related 2040 Metropolitan Transportation Plan Update as well as their new long-range plan initiative BuffaloNiagara2050) and the shorter range Transportation Improvement Program (TIP). The City of Buffalo, the Town of Amherst, and the Town of Tonawanda also have comprehensive and/or master plans of development. The Town of Tonawanda is currently in the process of updating their comprehensive plan. The City of Buffalo is also currently updating the zoning ordinance and the Town of Amherst has initiated a review of their zoning code, both discussed in this section as well.

3.1 Future Land Use and Development

Future land use, major development, and regional and municipal plans are presented in this section along with future zoning. Major development and municipal plans are presented in this section for each community in the study area as they relate to future conditions. Previously completed plans are described in more detail in a prior chapter (Task 2).

3.1.1 Greater Buffalo/Niagara Region

The GBNRTC 2035 Long-Range Transportation Plan update was adopted in 2010 and the BuffaloNiagara2050 plan is underway, but not before the 2035 plan expires. GBNRTC has an intermediate 2040 plan that bridges the gap between the two metropolitan transportation plans. The 2040 Metropolitan Transportation Plan Update integrated the One Region Forward goals and objectives that guide the development of the plan, updated demographic and employment projections, and updated significant planning studies and projects that could impact future transportation investment beyond the 2035 plan^{lvi}. The regional vision is guided by the following principles:

- Promote smart growth through transportation investment in priority development areas and areas with existing infrastructure.
- Foster regional economic competitiveness through targeted transportation investment.
- Create an environmentally healthy, resilient region.
- Promote safe, equitable regional service for all residents^{lvii}.

To that end, GBNRTC set forth targeted objectives along with more specific performance measures and goals to create a framework for improvements to the transportation network in the years to come. The focus areas for the goals and objectives are: prioritized preservation, economic development, mobility and accessibility, land use and transportation connection, and environment and climate change. Within the Framework for Regional Growth, still utilized by the region as a coordinated approach to growth and development, the region is divided into developed areas, developing areas, and rural areas^{lviii}. Most of the study area is within the developed area of the region, slated for reinvestment and mixed use development. The northern section of Amherst in the study area is within the developing area of the region, slated for a balance of conservation and balanced development. Throughout the region, regional centers, growth centers and corridors, and rural centers are identified to promote appropriate reinvestment, redevelopment, conservation, adaptive reuse and infill development. Within the study area, downtown Buffalo is identified as the major regional center with smaller regional centers in the UB North and ECC North areas. Growth corridors are identified in the study area along Main Street and the Millersport/I990 corridors^{lix}.

BuffaloNiagara2050 is the region's next metropolitan transportation plan^{lx}. The goal of the new plan is to:

...take a bold, fresh approach to solving present and future challenges and focus on ways to create a more efficient, greener, smarter, and sustainable transportation system for ourselves and future generations.

3.1.2 Buffalo

Comprehensive plans are meant to shape future development patterns. Buffalo's comprehensive plan, Queen City in the 21st Century, was adopted 2006 and provides a plan of development for the City to 2030^{lxii}. The planning process included formulating future development scenarios: trend, urban revitalization, corridor/activity center, and integrated regional center. The urban revitalization scenario focused on physical rehabilitation of neighborhoods and housing, while the corridor/activity center focused on attracting large-scale employment growth. The integrated regional center scenario is a balance of these two scenarios, and it became the preferred scenario and basis for the plan.

The community's vision for Buffalo is that Buffalo will be:

...respected for its regional leadership; diverse, modern economy and transportation infrastructure; educated and skilled work force, fully employed; inclusive community life and harmonious social relations; comfortable and safe neighborhoods; and a unique natural, cultural, and built heritage that has been lovingly preserved, restored and enhanced.

To that end, with regard to transportation and regional mobility and accessibility and the community's three guiding principles – sustainability, smart growth, and fix the basics, build on assets – these are some of the 27 development priorities and planning policies itemized in the comprehensive plan, and are vital to achieving all of the economic goals laid out in the plan:

- Implement key transportation projects
- Public transit
- Implement the Downtown Plan (described below)

With regard to land use, the City's land use concept for 2030 includes some of the following key changes:

- Expansion of the Downtown to include inner ring neighborhoods, as already defined in The Queen City Hub plan;
- Changing land uses Downtown to implement key investment initiatives, including infill housing and mixed use;
- Redevelopment of the three Strategic Investment Corridors: Waterfront/ Tonawanda, Main Street/ Downtown, and the South Park/ East Side Rail;
- Changes in land use for some former industrial sites (brownfields) as their redevelopment provides for a broader diversity of uses including new industrial, commercial, open space and mixed uses;
- Changes in use to accommodate the regional transportation plan, particularly in transit corridors^{lxiii}.

The City of Buffalo is also updating its zoning ordinance via the Buffalo Green Code, with an anticipated submission to the Common Council in December 2014^{lxiv}. The Green Code includes a land use plan^{lxv}. The Buffalo Green Code

... is a historic revision of Buffalo's land use and zoning policies that will promote investment, facilitate job creation, and improve the urban environment. The work to create a healthy, sustainable, and prosperous community is already underway, spurred by countless residents in neighborhoods across the city. The Green Code is designed to support and build upon these efforts^{lxvi}.

The first step in the development of the Green Code is the development of a land use plan that will guide Buffalo's development over the next 20 years. The principles behind the plan include the following:

- Reinforce downtown as a regional hub
- Support the emerging knowledge economy
- Grow employment centers
- Increase retail activity
- Optimize access and circulation

- Reinforce walkable neighborhoods
- Improve transportation options
- Enhance natural resources
- Reinvigorate public health
- Preserve natural, cultural and historic resources^{lxvi}

Downtown Buffalo Development

In general, the Buffalo metropolitan region is undergoing an economic transformation, and Downtown Buffalo has over \$5 billion of projects completed, under construction or planned, including projects at the Erie Canal Harbor and BNMC and the Buffalo Billions Initiative. Figure 23 contains a map and information on these downtown Buffalo development projects as of March 2014^{lxvii}.

The Canalside Land Use Improvement Project is the next phase of development for the Erie Canal Harbor area in Buffalo. Located on approximately 20 acres of land, the proposed development amounts to about 750,000 square feet of space for entertainment, hotel, office, retail, residential, restaurant, and other uses.

The following three major projects are currently under construction:

- HARBORCenter is located on a 2-acre site across from First Niagara Center. The project comprises two hockey rinks, a hockey training center, a 200-room hotel, restaurant and retail, and 845 parking spaces
- The Tishman Building at Main and Court adjacent to the Lafayette Square Metro Rail Station is being redeveloped into a hotel and residential units
- The Delaware North Company Headquarters and Hotel at Delaware and Chippewa will be a mixed use development

Additional planning efforts continue regarding potential additional development along the waterfront and Outer Harbor area. The ownership of this area has been transferred to NYS from NFTA. Part of the area will be a state park and the Erie Canal Harbor Development Corporation is developing a plan for the area^{lxviii}.

Figure 23 Downtown Buffalo Development Projects

Downtown Buffalo Development Projects by status

There has been a significant upswing in downtown Buffalo's redevelopment. The map points have been scaled based on each project's investment amount and the colors represent status: Under Construction, Proposed or Completed. This map paints a vivid picture of the resurgence the city is undergoing. More maps available at: www.buffaloniacore.org/maps



University at Buffalo/Buffalo Niagara Medical Campus

The new master plan for BNMC estimates that at build-out the campus will have 17,500 employees. Major projects currently under construction are the Women and Children's Hospital, new facilities for the Roswell Park Cancer Institute, and the Conventus medical office building. Also under construction nearby is a new UB Educational Opportunity Center. Also at BNMC, UB recently unveiled design for its new medical School of Medicine and Biomedical Sciences which will be built surrounding and encompassing NFTA Metro's Allen Medical Station. Construction is underway and is expected to be completed in 2016. Several new residential projects are also occurring near BNMC and along Main Street.

The *UB 2020^{lxix}* plan calls for further expanding the UB Downtown Campus, largely by relocating the five health sciences schools to this campus. The total amount of space for the campus would increase to over four million gross square feet, and the total number of students, faculty, and staff would increase exponentially to about 14,000. For the South Campus, the *UB 2020* plan proposes "reinvention of UB South Campus as a new interdisciplinary professional education campus." The total building space will decrease slightly, and the combined student, faculty, and staff population will remain about the same.

Overall, the *UB 2020* plan proposes 7 million square feet of new building space, which would generate an estimated 10,000 new students and 6,700 faculty and staff. As noted already, the plan calls for substantial growth of the Downtown Campus, which would generate new travel demand between the three campuses.

A cornerstone of the plan is for each campus to have its own distinct identity while becoming better connected with each other and the community that surrounds them. Further the plan embraces Transit-Supportive Development (TSD) as a way to achieve sustainable expansion that minimizes traffic and environmental impacts. It includes a

UNDER CONSTRUCTION					
Key	Project	Est. Year of Completion	Use	Investment	
1	UHS School of Medicine & Biomedical Sciences	2015	Medical/Med. R&D	\$187,000,000	
2	HABITACENTER	2015	Tourism/Hospitality	\$182,000,000	
3	Covantas	2015	Medical/Med. R&D	\$180,000,000	
4	Delaware North Co. HQ & Hotel	2015	Mixed Use	\$180,000,000	
5	Steyer City	2015	Mixed Use	\$180,000,000	
6	Larkin Park & Commerce	2015	Mixed Use	\$180,000,000	
7	Central Park Global Science Center	2015	Medical/Med. R&D	\$175,000,000	
8	Defense Building Redevelopment	2014	Mixed Use	\$161,000,000	
9	400 Seneca St.	2015	Mixed Use	\$155,000,000	
10	Catholic Health HQ	2014	Office	\$152,694,23	
11	One Canalside	2014	Mixed Use	\$150,000,000	
12	CongressBank	2014	Mixed Use	\$141,085,000	
13	Elmwood Apartments	2014	Office	\$140,000,000	
14	Perry Choice	2014	Mixed Use	\$140,000,000	
15	The HUB	2014	Retail/Hotel	\$135,000,000	
16	Haze Building	2014	Mixed Use	\$130,000,000	
17	The Pecking Mill	2014	Retail/Residential	\$127,000,000	
18	Roanoke Building	2014	Mixed Use	\$120,000,000	
19	East Canal Park	2014	Mixed Use	\$115,000,000	
20	200 Main	2014	Mixed Use	\$110,000,000	
21	Brown Building	2014	Mixed Use	\$100,000,000	
	TOTAL:			\$1,146,981,130	

PROPOSED PROJECTS					
Key	Project	Est. Year of Completion	Use	Investment	
22	Children's Hospital of Buffalo	2016	Medical/Med. R&D	\$220,000,000	
23	The Carlo	2015	Mixed Use	\$175,000,000	
24	Trico Factory	2015	Mixed Use	\$160,000,000	
25	Albion Apartments	2015	Mixed Use	\$150,000,000	
26	EO Court	2015	Office	\$140,000,000	
27	Currie Building	2015	Tourism/Hospitality	\$130,000,000	
28	OW Miller Liver Stable	2015	Mixed Use	\$120,000,000	
29	Mill Race Concourse	2015	Office	\$100,000,000	
30	Larkin Loft	2015	Retail/Residential	\$80,000,000	
31	Highline Lofts	2015	Office	\$80,000,000	
32	Regions & Mamm Children's Museum	2015	Tourism/Hospitality	\$80,000,000	
33	Coverage Lofts	2015	Retail/Residential	\$60,000,000	
34	400 Delaware Ave.	2015	Retail/Residential	\$55,000,000	
35	105 Ellicott St.	2015	Office	\$54,000,000	
36	Turner-Davis Building	2015	Mixed Use	\$50,000,000	
37	Servis Apartments	2015	Retail/Residential	\$50,000,000	
38	Brashears Theatre	2015	Mixed Use	\$50,000,000	
	TOTAL:			\$175,000,000	

COMPLETED PROJECTS - CONTINUED					
Key	Project	Year of Completion	Use	Investment	
60	Electric Tower	2009	Office	\$82,000,000	
61	BNAC Innovation Center	2010	Office	\$82,000,000	
62	MZ Office	2007	Office	\$81,000,000	
63	AMBI Warehouse Lots	2010	Residential	\$81,000,000	
64	West Building (Apartment)	2007	Residential	\$81,000,000	
65	Colgate-Cap Lotte & Offices	2009	Mixed Use	\$81,000,000	
66	Allen Medical Co. HQ	2008	Office	\$80,000,000	
67	Project Annex	2008	Residential	\$80,000,000	
68	Attorney Fed/Rights One Erie	2008	Other	\$80,000,000	
69	BNAC Cleveland St/Lake Incubator	2007	Medical/Med. R&D	\$80,000,000	
70	GlobeLife	2008	Mixed Use	\$78,000,000	
71	Warehouse Lot	2009	Residential	\$77,000,000	
72	100 Main Street Stage	2010	Residential	\$76,000,000	
73	The Antler	2010	Residential	\$75,000,000	
74	Health Sciences Charter School	2011	Other	\$75,000,000	
75	WHY Medical Arts	2012	Medical/Med. R&D	\$75,000,000	
76	101 South	2011	Mixed Use	\$75,000,000	
77	Groveside Building	2014	Residential	\$74,200,000	
78	100 Main Street	2009	Residential	\$73,000,000	
79	West Elm	2009	Mixed Use	\$72,000,000	
80	Project Integrated Site Garage House	2009	Tourism/Hospitality	\$72,000,000	
81	Albertson Lot	2008	Residential	\$72,000,000	
82	Lotus @ Elks Terminal (Phase II)	2010	Residential	\$72,000,000	
83	West Huron Lot	2010	Residential	\$72,000,000	
84	101 Main St.	2010	Mixed Use	\$71,000,000	
85	100 Main St.	2010	Mixed Use	\$70,000,000	
86	101 Main St.	2009	Mixed Use	\$68,000,000	
87	101 Main St.	2009	Mixed Use	\$68,000,000	
88	101 Main St.	2009	Mixed Use	\$68,000,000	
89	101 Main St.	2009	Mixed Use	\$68,000,000	
90	101 Main St.	2009	Mixed Use	\$68,000,000	
91	101 Main St.	2009	Mixed Use	\$68,000,000	
92	101 Main St.	2009	Mixed Use	\$68,000,000	
93	101 Main St.	2009	Mixed Use	\$68,000,000	
94	Wausaua Townhouse	2010	Residential	\$67,000,000	
95	Ironworks Music Club	2010	Tourism/Hospitality	\$67,000,000	
	TOTAL:			\$1,549,000,000	

BUFFALO BILLION INITIATIVES					
Project	Status	Year	Jobs	Investment	
Buffalo High-Tech Manufacturing Innovation Hub at Riverfront	In Progress	IP	850	\$1,510,000,000	Acknowledges that the Buffalo Niagara Enterprise has invested \$1 billion in the Buffalo, NY economy to create jobs for the current population while laying a foundation of sustainable economic opportunity for future generations.
Buffalo Medical Innovation and Commercialization Hub	In Progress	IP	200	\$1,500,000,000	A - a clinical research and development center that includes AMRI & PendoCure.
Buffalo Medical Innovation and Commercialization Hub - CTGS	In Progress	IP	800	\$50,000,000	B - collaborative generic R&D facility located in CTGS (committed to 300 job-segments).
Buffalo Niagara Advanced Manufacturing Initiative	In Progress	IP	100	\$50,000,000	C - manufacturing facility for high-value products.
Buffalo IT Resurgence and Commerce Initiative Hub	In Progress	IP	500	\$50,000,000	D - information technology training and R&D development hub (has committed \$50M just to the project).
					\$1,600,000,000

GRAND TOTAL FOR ALL PROJECTS **\$5,092,276,760**

While all reasonable precautions have been taken in publishing this map, the Buffalo Niagara Enterprise assumes no responsibility for any errors or omissions. The map is provided "as is" and is not to be construed as a formal survey. It is the user's responsibility to verify the information contained in the map. The map is not to be used for legal purposes. It is the user's responsibility to consult with a professional surveyor if any discrepancies are found.

A - A clinical research and development center that includes AMRI & PendoCure.

B - Collaborative generic R&D facility located in CTGS (committed to 300 job-segments).

C - manufacturing facility for high-value products.

D - information technology training and R&D development hub (has committed \$50M just to the project).

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comprehensive transportation strategy that aims to reduce dependency on cars for travel to and around the campuses, minimizing impacts on local traffic and parking.

The development potential and prospects for UB received further enhancement in June 2013 when the Governor announced "START-UP NY," (SUNY Tax-Free Areas to Revitalize and Transform Upstate NY) an initiative aimed to transform SUNY campuses and university communities across upstate NY into tax-free communities that attract start-ups, venture capital, new business, and investments from across the world and new employment opportunities. START-UP NY aims to generate economic growth and make upstate New York competitive nationally by eliminating all taxes – including business, corporate, sales, property and income taxes for owners and employees – for companies that partner with a college or university to further their academic mission.

3.1.3 Amherst

Meanwhile, Amherst also continues to grow. The University Place mixed use development was opened to the public in November of 2013. Exclusive of UB North, the Amherst portion of the study area currently has several projects in the development pipeline including Stratford Apartments (residential), Alexander Estates (Phase II - residential), and Sheridan Commons (medical). The Town has both the Amherst Industrial Development Agency and the Amherst Development Corporation to "promote economic diversity, quality employment opportunities and to broaden the tax base of the Town of Amherst in order to reduce the tax burden on homeowners, while helping to maintain and enhance a high quality living environment^{lxx}."

Amherst has additional opportunities for more commercial development, including infill of vacant properties and parcels. One major proposed project is Muir Woods, which would generate about 700,000 square feet of office space, along with a small housing component. Some existing office / business parks have undeveloped parcels. CrossPoint Business Park has about 65 acres available for development, and Bryant Woods has three vacant parcels. In addition, some retail centers have vacant buildings or available space. For example, the former BonTon department store at the Northtown Shopping Center has about 100,000 square feet of available space, slated to be the site of a Whole Foods development.

The town adopted its current Comprehensive Plan in 2007 and it was amended in 2011^{lxxi}. The plan proposes several mixed-use Activity Centers, including a University-Related Center, Special Use Centers, Highway/Intersection Centers, and Urban/Village Centers. The University-Related Center is located on one large, undeveloped property on the east side of Millersport Highway across from the UB North campus. Larger in scale than the other center types, this center is intended to provide for employment, housing, and other uses serving both the University community and private businesses and residents. It also would include open space and recreational trails. Examples of potential uses include student / faculty housing; technology, research, and development functions; business development incubators; life-long and community outreach education programs; conference facilities; arts and athletic venues; and hotels and other commercial uses typically found in a community center serving both the University and the Town.

The comprehensive plan recommends that the town actively engage the University in planning for the appropriate development of this property. This planning would include shifting some present and planned activities from the campus academic core to off-campus, mixed-use edges where businesses and the community can benefit from the presence of the University.

Furthermore, the comprehensive plan includes this proposed center as part of a larger "Focal Planning Area" for which it presents conceptual development plans (other focal planning areas include Northwest Amherst and Eggertsville). In addition to the proposed "University Village" east of Millersport Highway, the concept plan for the focal planning area includes the following elements:

- Encourage re-use or redevelopment of properties in the Maple Road/North Forest Road commercial center and other locations along Maple Road and Millersport Highway.

- Build programmatic connections between UB, Sweet Home High School, and other institutional, governmental, and business resources
- Research-oriented facilities related to the University should continue to expand along Sweet Home Road in proximity to the Baird Research Park.
- The Sweet Home Road corridor should be the focus of major off-campus university-related activities. Higher density residential uses should dominate the portion of this corridor between Skimmersville and Chestnut Ridge Roads. North of this residential area, a mix of office and higher density residential uses should extend to the I-990 interchange exclusively on the west side of Sweet Home Road. This pattern should be punctuated by a small commercial node centered on a Skimmersville Road Extension.

Special Use Centers include the John James Audubon Parkway Municipal Complex. The municipal facilities located on the east side of the John James Audubon Parkway are designated as a special use center in recognition of their established function as a center of community activity. Future policy for this center should be directed toward increasing the integration of uses (e.g., shared use facilities) and improving accessibility and connections to surrounding land uses and to the Town as a whole, including a linkage to the open space and greenways network.

Highway/intersection Centers are community commercial centers intended to serve retail and office needs in the central part of the Town. Among these centers is Millersport Highway/North French Road: This intersection is largely undeveloped and abuts the CrossPoint Business Park, an emerging center of employment. Designation of this mixed-use center is intended to capture the demand for commercial uses along North French Road. Locating uses typical of community commercial centers here will provide opportunities for both residents of the surrounding area and persons working in the business park to shop and work. The predominantly undeveloped character of the area provides the opportunity to establish a visually attractive, pedestrian-friendly center with connections to adjacent land uses.

The plan also designates several Urban/Village Centers including Main Street/Bailey Avenue/University Plaza, which extends west from Niagara Falls Boulevard along Kenmore Avenue and Main Street to Bailey Avenue across from the UB South Campus. The center is anchored by the University Plaza, which has recently been renovated. Location of moderately sized uses typical of a community commercial center should occur within the plaza. The remainder of the center features shallow lots located along Main Street, Kenmore Avenue and Bailey Avenue. These areas should feature traditional scale commercial uses that are consistent with and complement the surrounding residential areas. Given the transfer of undergraduate programs and student housing to the North Campus, shifting demographics in adjacent residential areas, and competition from newer, larger retail centers, opportunities should be sought to reinforce the area's attractiveness as a neighborhood and campus-oriented center. The programmed reconstruction of Main Street and the UB's University Community Initiative has the potential to improve streetscape character and stimulate investment in the center and surrounding neighborhoods. The Eggertsville Action Plan provides regulatory and urban design recommendations for this center.

The Main Street/Eggert Road center is located at the first major intersection on Main Street in Amherst, east of the City of Buffalo. This area currently functions as a traditional commercial center with a mix of uses such as small-scale commercial, institutional, mixed residential, and office uses. Future policy for this center should be directed toward maintaining its viability through regulatory changes and visual improvements to protect its character and encourage appropriate new investment. This character should be reinforced through pedestrian-oriented streetscape improvements and encouragement of compatible mixed-use and commercial uses typical of a traditional commercial center. Several recommendations are provided in the Eggertsville Action Plan. Also, both the Main Street/Bailey Avenue/University Plaza and Main Street/Eggert Road Centers are located in the Eggertsville Focal Planning Area.

UB North Campus

The *UB 2020* plan calls for some new building and a substantial physical transformation of the UB North Campus. Proposed building would increase the gross space from 6.6 to 9.8 million square feet.^{lxvii} The *UB 2020* plan has an objective of housing a significant portion of the student population on the North campus. This effort is reflected in new

housing developments at the periphery of the traditional campus core adjacent to the academic spine and sports stadiums. Recognizing the need for additional commercial services for the students, the University is also undertaking a redevelopment initiative concentrated on Lee Road on campus to provide a new bookstore, restaurants, and retail uses. Thus, the once-insular campus is slowly extending to its edges, which provides the opportunity for more interaction and shared services with the Town of Amherst. This expansion is providing the potential for the development of student housing not accommodated on-campus and student-related retail/personal services in close proximity to the campus.^{lxviii}

3.1.4 Tonawanda

The Town of Tonawanda adopted its current Comprehensive Plan in 2005 and is in the process of completing a 2014 update^{lxix}. The plan's Vision includes the following elements relative to the Niagara Falls Boulevard corridor:

- Cooperative planning efforts with Amherst for Niagara Falls Boulevard improvements will improve the attractiveness and functionality of the corridor.
- Niagara Falls Boulevard will continue to be a major commercial destination supporting both Tonawanda and Amherst, with "big box" style retailers on the Amherst side, and smaller, supporting retail and commercial uses on the Town of Tonawanda side. Congestion and traffic problems will be addressed through access management techniques, particularly in the center section (between Sheridan Drive and I-290). Aesthetics will be improved with more landscaping and stronger design standards. The impacts of possible deepening of business lots will be investigated to evaluate the relative merits to residences and businesses.
- Plans will recognize that the character of Niagara Falls Boulevard is not uniform but can be divided into four segments:
 - South of Sheridan Drive: mixed use, with pockets of low density retail. Focus should be on aesthetic standards, traffic calming and linking commercial uses with adjacent neighborhoods.
 - Sheridan Drive to I-290: primarily commercial. Access management improvements are most needed in this section. More creative approaches to site design, including expansion from the rear of properties along Niagara Falls Boulevard should be explored over the long run.
 - I-290 north to Ellicott Creek Road: primarily commercial, with some residential and mixed use. Access management improvements also important in this segment, with efforts to tie convenience retail to neighborhood better.
 - North of Ellicott Creek Road: mixed use, including park. Improvements to bikeways and improving pedestrian facilities are needed.

The plan's recommendations included the following:

- Institute access management requirements along major roadways including Sheridan Drive, Niagara Falls Boulevard, Delaware Avenue, Kenmore Avenue and possibly Military Road.
- Institute traffic system management improvements (TSM) to address congestion
- Create commercial corridor overlay districts
- Zoning overlay districts along the major corridors could provide landscaping, design, signage, and access management standards for new development and redevelopment.

The recommendations also noted that the Town is studying Niagara Falls Boulevard and access management issues jointly with Amherst. Amherst, as part of its Eggertsville Action Plan, studied the Niagara Falls Boulevard and identified several issues, including inconsistent land uses, high traffic volumes, a decrease in pedestrian compatibility, and a lack of a clear character. It recommended that Amherst prepare a new "Office District" zoning classification, along with appropriate design and streetscaping standards, to apply to the corridor between Longmeadow Road and Eggert Road. It also recommended that the two towns consider jointly establishing a compatible zoning treatment, including design guidelines and access management techniques, for the corridor.

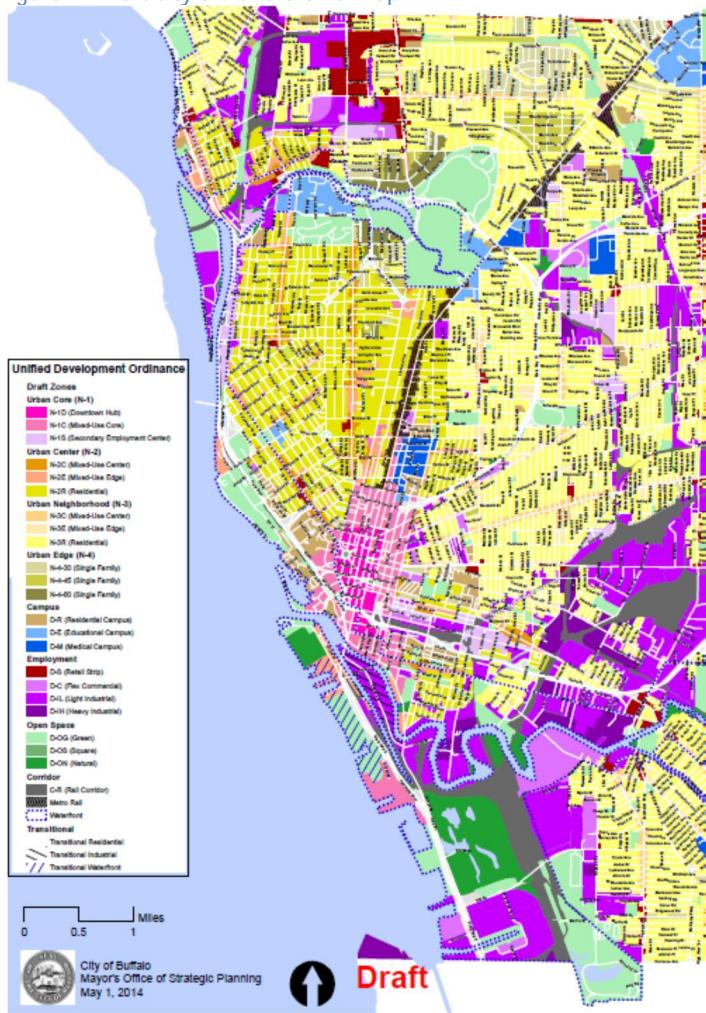
3.2 Zoning Update

Zoning ordinances are designed to protect a community by defining a set of rules for land use planning that ensure that complementary uses (as opposed to conflicting uses) are developed on adjacent parcels of land. Zoning ordinances also provide shape to development patterns. Each municipality has its own zoning ordinance. At the time of the study, the City of Buffalo is currently updating its zoning ordinance. Areas of encouraged growth and redevelopment in Amherst and Tonawanda were discussed in the previous section on future development. Note that the Town of Amherst has also recently initiated a review of its zoning code.

3.2.1 Buffalo

The City of Buffalo is currently in the process of updating its zoning ordinance (Unified Development Ordinance – UDO), called the Buffalo Green Code. The Green Code is a “place-based development strategy” that builds on the City of Buffalo’s comprehensive plan (Queen City in the 21st Century)^{lxv}. The Green Code zones are built around three place types: neighborhoods, districts, and corridors. Neighborhoods are generally mixed use, districts are generally more single use areas, and corridors are linear networks that connect neighborhoods and districts. The UDO “implements the community’s vision for the development of the city.”^{lxvi} A map of the UDO is provided in Figure 24. Within the study area in Buffalo, the new zones are primarily urban core and center, mixed use, and campus, with smaller areas of urban neighborhood and employment and the Metro Rail corridor zone overlaying the rest. Closest to the Amherst boundary within the study area, the zones are more urban edge. These zones generally encourage integrated, mixed use development that foster urban intensity and transit oriented development^{lxvii}.

Figure 24 Draft City of Buffalo UDO Map



3.3 Projected Population and Employment

The GBNRTC generates data on population and employment, and it develops projections of population and employment for forecast years through 2035.

The regional population, as well as that for Erie County and the City of Buffalo, decreased from 2000 through 2010, while Amherst experienced population growth during that period. From 2010-2035, the projections show increasing population across the board (see Table 17). The growth rates for the region and Buffalo are forecasted to be even greater than in Amherst.

Table 17 Population Forecasts to 2035

Population	Year 2000	Year 2010	Year 2035	Change 2010-2035	
				#	%
Region	1,170,111	1,135,509	1,294,370	158,861	14.0%
Erie County	950,265	919,040	1,048,440	129,400	14.1%
Buffalo	292,648	261,444	310,706	49,262	18.8%
Amherst	116,510	122,366	137,756	15,390	12.6%
Tonawanda	78,155	73,567	78,501	4,934	6.7%

Source: 2000, 2010 from US Census Bureau counts, 2035 from GBNRTC Forecasts by TAZ

Based on GBNRTC forecasts, population is projected to be 251,142 in the study area in 2035¹³, an increase of 9.8% from 2010-2035, which is lower than both the Buffalo and Amherst total municipal rates but higher than the Tonawanda municipal rate. Table 18 is a map of projected 2035 population density for the study area.

The overall regional employment increased somewhat in the period 2000-2010, but with substantial variation; Buffalo had only a 0.4% increase, while Amherst had a 4.9% increase. The variations were even more extreme between 1990 and 2000. See Table 18 for detailed numbers. From 2010 to 2035, employment in Buffalo is projected to grow by 1,937 or 1% while employment in Amherst is projected to grow by 9,316 or 9.4%.

Table 18 Employment Forecasts to 2035

Employment	Year 2000	Year 2010	Year 2035	Change 2010-2035	
				#	%
Region	650,819	666,153	700,900	34,747	5.2%
Erie County	555,556	565,669	587,350	21,681	3.8%
Buffalo	191,851	192,620	194,557	1,937	1.0%
Amherst	94,393	99,039	108,355	9,316	9.4%
Tonawanda	38,528	38,967	40,055	1,088	2.8%

Source: GBNRTC Forecasts

For the study area, employment is projected to be 226,712 in 2035, an increase of 7% over 2010 employment. Maps of projected population and employment density are presented in Figure 25 and Figure 26.

¹³ In order to determine the population statistics within the study area only, which does not always include whole TAZs, the statistics were normalized based on the percentage of the zone located within the study area.

Figure 25 Study Area 2035 Population Density by TAZ

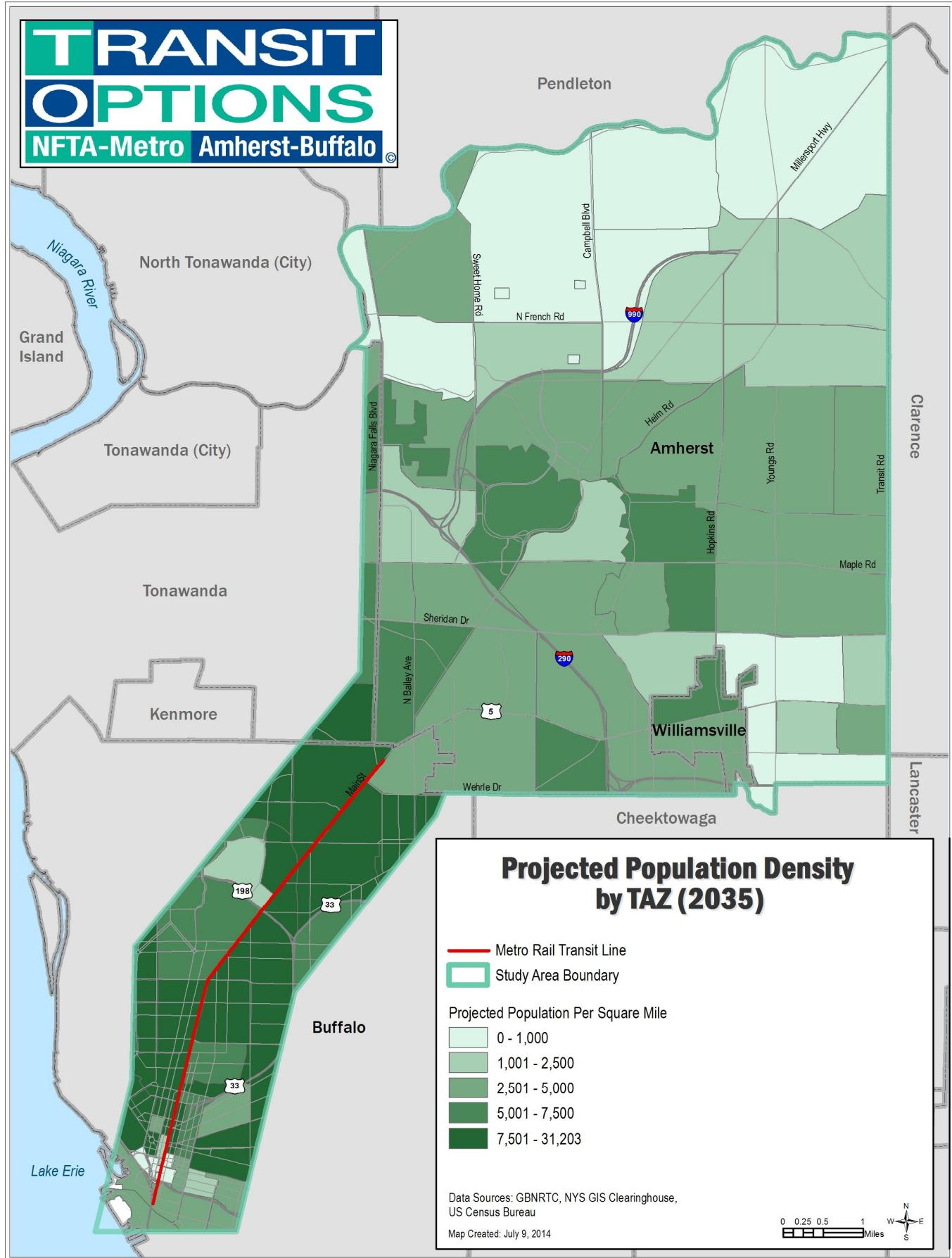
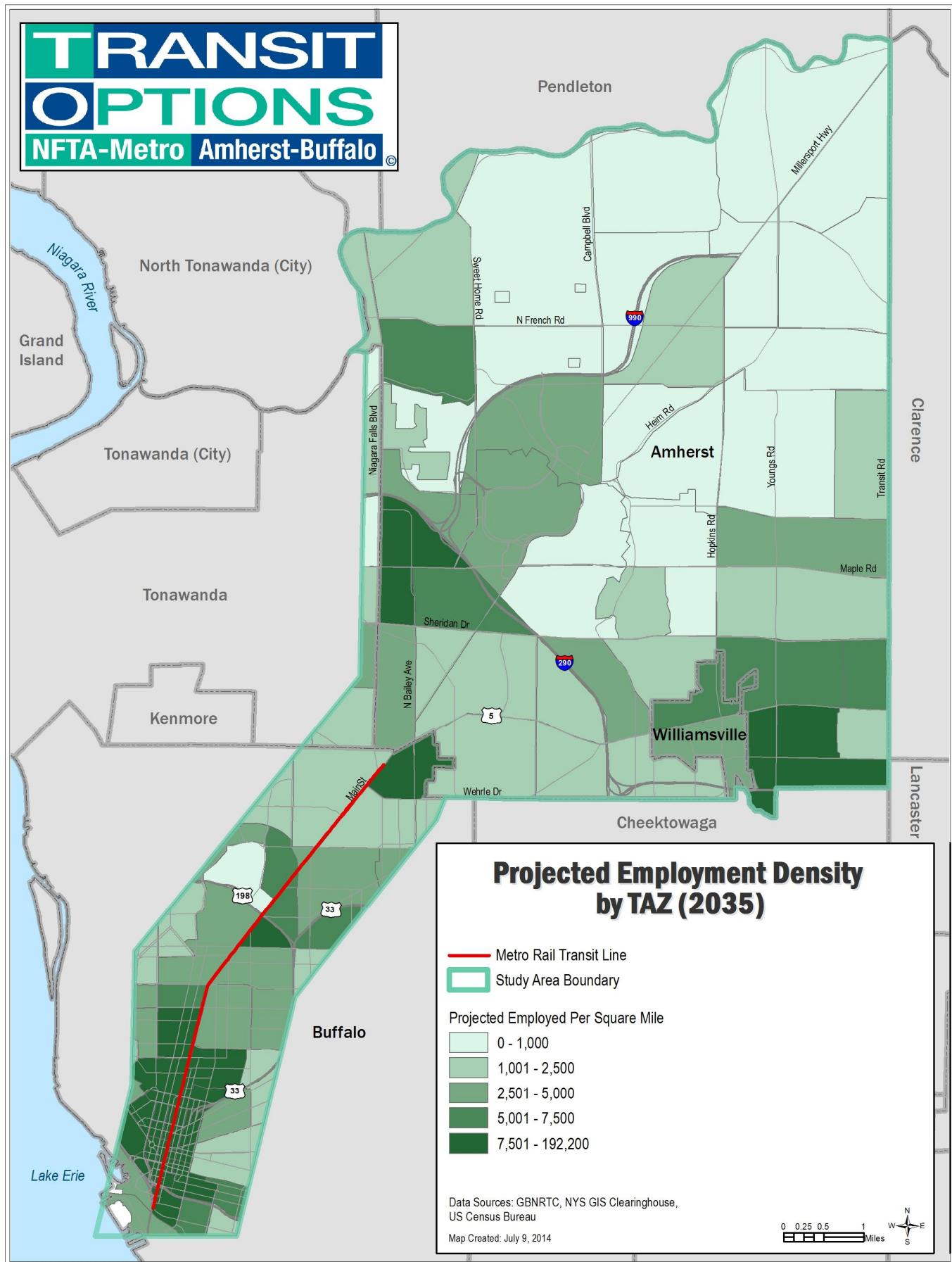


Figure 26 Study Area 2035 Employment Density by TAZ



3.4 Future Transportation Network

Regional long-range transportation plans, transportation improvement plans, and transit plans provide the insight into what the transportation network will look like in the future.

3.4.1 Roads

Future road work and future work sites from the 2014-2018 GBNRTC Transportation Improvement Program (TIP) are presented in Figure 27^{lxxviii}. In the City of Buffalo portion of the study area, roadway improvements include pedestrian improvements for the Safe Routes to School Program, paving projects, new highway construction for Phase 3 of the BNMC project, highway reconstruction on the Scajaquada Corridor, highway widening on Main Street, and an environmental assessment, highway reconstruction, and a new park and ride facility for Buffalo Harbor Bridge and Inner Harbor Transportation Infrastructure Facility project.

In Amherst and Williamsville pedestrian improvements for the Safe Routes to School Program are in the TIP as well as paving projects, toll barrier relocation on I-90, and Erie Community College traffic sign improvements. Other projects in the TIP include highway widening on East Robinson Road/North French Road and highway reconstruction on Sweet Home Road west of the UB North Campus. There is also a project for the Amherst to Lockport Canalway Trail. In Tonawanda, there is a Rails to Trails project in the TIP.

Other opportunities to improve the transportation system are also funded through the federal Transportation Enhancement Program, now called the Transportation Alternatives Program under MAP-21, which includes improvements under Safe Routes to School, pedestrian and bicycle facilities, historic preservation, environmental mitigation, and other infrastructure improvements. At the time of the study, the list of approved projects for the next round of improvements had not been released^{lxxix}.

3.4.2 Public Transit

Transit improvements in the 2014-2018 TIP include this study, Metro Rail track and station rehabilitation and improvements, Metro Rail and Bus fare collection replacement, bus replacement, bus facility rehabilitation and improvements, communication system upgrade, preventative maintenance, and senior and disabled mobility enhancement^{lxxx}. NFTA's planned capital improvements:

...continue to address the system's fundamental long-term need to maintain infrastructure and facilities. Additionally, asset categories brought into a state of good repair by previous capital investments will be protected through normal replacement investments. In doing so, the NFTA will continue to improve safety, security, reliability and convenience. Building on these successes and taking advantage of recent technological advances in the industry, the NFTA capital program will focus on a large scale capital investment in a next generation fare collection system and equipment. The program will also improve Light Rail Rapid Transit (LRRT) surface track, foundation and fasteners as investments continue in Downtown Buffalo around the LRRT as well as bus and light rail facility rehabilitation. The program also continues the NFTA investment in the next generation of bus vehicles^{lxxxi}.

Within the TIP, transit improvements are also linked to the goal of improving the region's economic competitiveness.

3.4.3 Pedestrian and Bicycle Facilities

The GBNRTC 2008 Bicycle and Pedestrian Plan identifies the following as major goals for the region:

1. Provide an integrated bicycle and pedestrian network
2. Complete Streets to accommodate all users

3. Provide convenient and secure long-term and short-term bicycle parking
4. Provide a seamless and convenient interface with transit
5. Educate bicyclists, motorists, and the general public about bicycling and walking safety
6. Market the health benefits of walking and bicycling
7. Improve law enforcement and detailed crash analysis^{lxxxii}

The City of Buffalo is completing a bicycle master plan with an anticipated completion date of spring 2016^{lxxxiii}.

3.4.4 Rail/Freight

Within the 2014-2018 TIP, promoting the efficiency and reliability of truck and rail freight movements within and throughout the region is one of the goals under the categories of improving the region's economic competitiveness^{lxxxiv}. While roadway and transit improvements generally also translate into improvements in freight movements, there are no specific freight projects in the TIP. In 2010, GBNRTC conducted an Urban Area Freight Study, which examined future freight movement in the region^{lxxxv}. The study recommended a list of operational and infrastructure projects as well as policy and marketing initiatives. Projects that the study team felt would most strongly benefit the region were listed as high priority and are listed below:

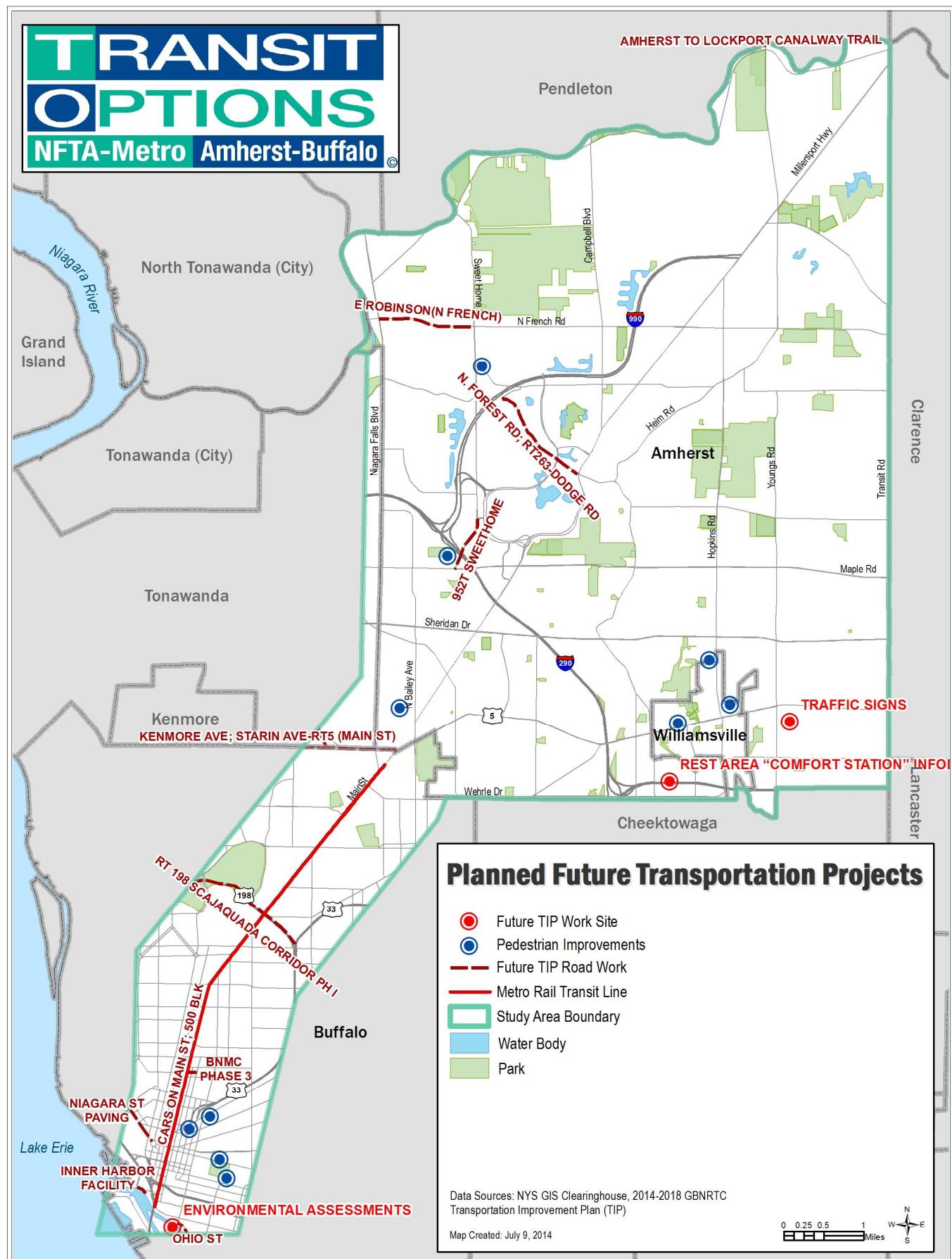
- Buffalo Logistics Complex (highway/rail)
- Portage Bridge Replacement (rail)
- G&W Connection from NS to Buffalo Line to BPRR Line (rail)
- Falls Road Bridge over Erie Canal Rehabilitation (rail)
- Peace Bridge Expansion (highway)
- New York Route 63 Bypass (highway)^{lxxxvi}

The 2009 New York State Rail Plan also recommends a list of high priority projects that would benefit freight movement in the region:

- Falls Road Bridge over Erie Canal Rehabilitation
- Erie County BSOR track/facility rehabilitation/upgrade
- Erie County SB track/yard rehabilitation/upgrade^{lxxxvii}

From the GBNRTC Urban Area Freight Study, truck traffic is forecasted to increase by 111% from 2004 to 2035 with the highest percent increase in international overhead in the Buffalo-Niagara Region. Local truck traffic within Erie and Niagara Counties is forecast to increase by 89% from 2004 to 2035. Rail volumes in the region are projected to increase by 97% from 2004 to 2035^{lxxxviii}.

Figure 27 Planned Transportation Improvement Projects



3.4.5 Future Congestion

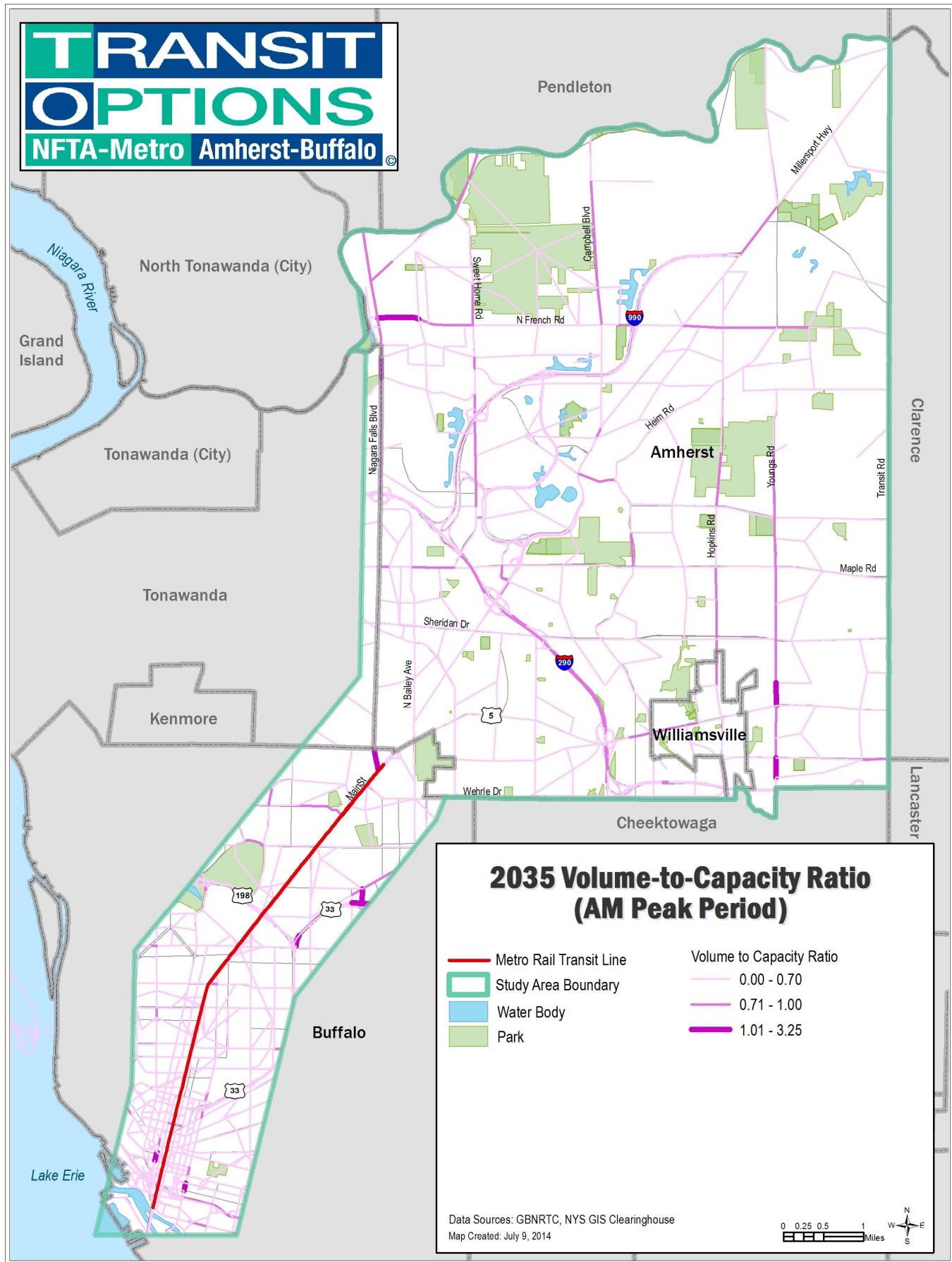
The GBNRTC compiles traffic volumes and assesses roadway congestion through its Congestion Management System (CMS) and forecasts future conditions. Using highway network information from GBNRTC, traffic and congestion metrics were modeled to 2035. The results of this modeling effort are presented in Table 19 for the morning peak period of travel. The metrics are broken down by volume-to-capacity (V/C) ratios for vehicle miles traveled (VMT) and vehicle hours traveled (VHT). V/C ratios are used to generally define congestion levels. V/C ratios greater than 1.0 correspond to severe congestion, V/C ratios between 0.70 and 1.0 refer to heavy congestion, and V/C ratios less than 0.70 correspond to moderate, low, or no congestion as the values lower. As can be seen in the table, VMT and VHT growth in the region in the severe congestion category is projected to be significant. Overall, VMT growth is projected at 27% and VHT growth in the region is projected at 53% in the region over the period 2008-2035.

Table 19 Morning Peak Period Volume-to-Capacity Ratio, Vehicle Miles Traveled and Vehicle Hours Traveled 2008/2035

V/C Ratio	VMT			VHT		
	2008	2035	VMT Growth	2008	2035	VHT Growth
Under 0.70	3,377,843	3,792,832	12%	91,976	121,322	32%
0.70 - 1.0	336,716	854,308	154%	11,399	31,432	176%
1.0 +	10,757	98,461	815%	700	6,342	806%
Total	3,725,316	4,745,600	27%	104,075	159,096	53%

The map in Figure 28 presents the projected 2035 V/C ratio by link in the study area for the morning peak period.

Figure 28 2035 Volume-to-Capacity Ratios during the Morning Peak Period



4.0 APPENDIX

Additional information not included in the main text for existing conditions is provided in following sections.

4.1 Land Use Generalizations

Detailed land use category assignments:

Property Description (from City/Towns)	Generalized Land Use Class
Unclassified	Unclassified
>1use sm bld	Mixed Use
1 Family Res	Low Density Residential
1 use sm bld	Commercial
2 Family Res	Medium Density Residential
3 Family Res	Medium Density Residential
Abandoned ag	Agriculture
Aged – home	Institutional
Air transport	Transportation
Animal welfr	Institutional
Apartment	High Density Residential
Athletic fld	Parks and Recreation
Att row bldg	Light Industrial
Auditorium	Parks and Recreation
Auto body	Light Industrial
Auto carwash	Light Industrial
Auto dealer	Commercial
Bank	Commercial
Bank complex	Commercial
Bar	Commercial
Benevolent	Institutional
Billboard	Commercial
BowIng alley	Commercial
Branch bank	Commercial
Cable tv	Utilities
Ceiling rr	Transportation
Cemetery	Institutional
Cold storage	Light Industrial
College/univ	Education
Com vac w/imp	Vacant
Community Ser	Institutional
Converted Res	Mixed Use
Correctional	Institutional
Country club	Parks and Recreation
County park	Parks and Recreation
Culture bldg	Institutional
Det row bldg	Light Industrial
Diner/lunch	Commercial
Education	Education
Educatn fac	Education
Elec-Gas Facil	Utilities
Property Description (from City/Towns)	Generalized Land Use Class

Elec-Substation	Utilities
Elec Dist Out	Utilities
Elec Trans Imp	Utilities
Estate	Agriculture
Fast food	Commercial
Field crops	Agriculture
Flood contrl	Utilities
Funeral home	Institutional
Gas Meas Sta	Utilities
Gas station	Commercial
Gas Trans Impr	Utilities
Golf course	Parks and Recreation
Government	Government
Govt bldgs	Government
Govt pk lot	Transportation
Greenhouse	Agriculture
Health bldg	Institutional
Health care	Institutional
Health spa	Institutional
Highway gar	Transportation
Hospital	Institutional
Hotel	Commercial
Indian resrv	Government
Indoor rink	Parks and Recreation
Indoor sport	Parks and Recreation
Indoor swim	Parks and Recreation
Inn/lodge	Commercial
Junkyard	Heavy Industrial
Kennel / vet	Institutional
Landfill	Heavy Industrial
Large retail	Commercial
Legit theatr	Commercial
Library	Institutional
Lumber yd/ml	Heavy Industrial
Man car wash	Light Industrial
Manufacture	Heavy Industrial
Marina	Transportation
Media studio	Utilities
Military	Government
Mini-mart	Commercial
MiniWhseSelfSto	Light Industrial
Motel	Commercial
Motr veh srv	Commercial
Movie theatr	Commercial
Mtor veh srv	Commercial
Mult-use bld	Mixed Use
Multiple res	Medium Density Residential
Municpl park	Parks and Recreation
Nbh shop ctr	Commercial
Night club	Commercial
Property Description (from City/Towns)	Generalized Land Use Class
Non-cable tv	Utilities

Non-ciel. Rr	Transportation
Nursery	Agriculture
Office bldg.	Office
Orphanage	Institutional
Outdoor rink	Parks and Recreation
Outdr sport	Parks and Recreation
Outdr swim	Parks and Recreation
Park	Parks and Recreation
Parking gar	Transportation
Parking lot	Transportation
Playground	Parks and Recreation
Police/fire	Government
Prof. bldg.	Office
Pub Util Vac	Vacant
Radio	Utilities
Rec facility	Parks and Recreation
Reg shop ctr	Commercial
Religious	Institutional
Res vac land	Vacant
Res w/Comuse	Mixed Use
Restaurant	Commercial
Road/str/hwy	Transportation
Rural res	Low Density Residential
Rural vac<10	Open Space
Rural vac>10	Open Space
Rural vacant	Open Space
Sand&gravel	Heavy Industrial
School	Education
Seasonal res	Low Density Residential
Self carwash	Light Industrial
Sewage	Utilities
Sm park gar	Transportation
Snack bar	Commercial
Social org.	Institutional
Spec. school	Education
Stadium	Parks and Recreation
Supermarket	Commercial
Telecom. eq.	Utilities
Telephone	Utilities
Transportatn	Transportation
Truck termnl	Transportation
Underwtr Ind	Heavy Industrial
Urban renewl	Urban Renewal
Vac w/imprv	Vacant
Vacant comm.	Vacant
Vacant indus	Vacant
Vacant rural	Open Space
Warehouse	Light Industrial
Waste displs	Utilities
Property Description (from City/Towns)	Generalized Land Use Class
Water supply	Utilities
Water Treat	Utilities

Welfare	Institutional
Wetlands	Wetlands
Ymca or ywca	Parks and Recreation

4.2 Zoning District Generalizations

Detailed zoning district generalizations:

Generalized Zoning District	Buffalo	Tonawanda	Amherst
Low Density Residential	R1, R2	A	R-R, R-1, R-2, TR-3, CR-3A, R-3
Medium Density Residential	R3	B	R-4, MFR-4A, MFR-5
High Density Residential	R4, R5	M-F	MFR-6, MFR-7, MHR-8
General Business District	C2, C3	C, WB	GB, OB
Neighborhood Business District	C1	C-1	NB
Industrial District	M1, M2, M3	G-1, WID	RD, ST, GI
Mixed Use District	RR, TS	W-MU	NCD, PDD, TND, TNB, LW, GB-TNB, OB-TNB, MS-TNB, CF-TNB, NB-TNB
Retail/Commercial District	CM	RHC	SC, MS, CS
Special District	SD, DO, EB, KB, AD	P-S, RO	PRD
Suburban Agriculture			SA
Institutional	II	school-park, cemetery	CF, NCD-SUNYUB
Village of Williamsville			X
Unclassified/In Dispute	X		X

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^v Buffaloplace.com

^{vi} United States Census Bureau

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