

# I-81 VIADUCT PROJECT

## CHAPTER 2

### PROJECT SETTING

This chapter presents a description of the setting in which the Project is located, including a summary of the surrounding natural and built environments.

#### 2.1 INTRODUCTION

The Interstate 81 (I-81) Viaduct Project (the “Project”) involves segments of I-81, Interstate 690 (I-690), Interstate 481 (I-481), and related highway interchanges and local streets in Onondaga County, New York (see **Figure 2-1**). This chapter provides an overview of the natural and built environments in the Project Area as well as the roadway features of I-81, I-690, I-481, and other key streets in the Project Area.

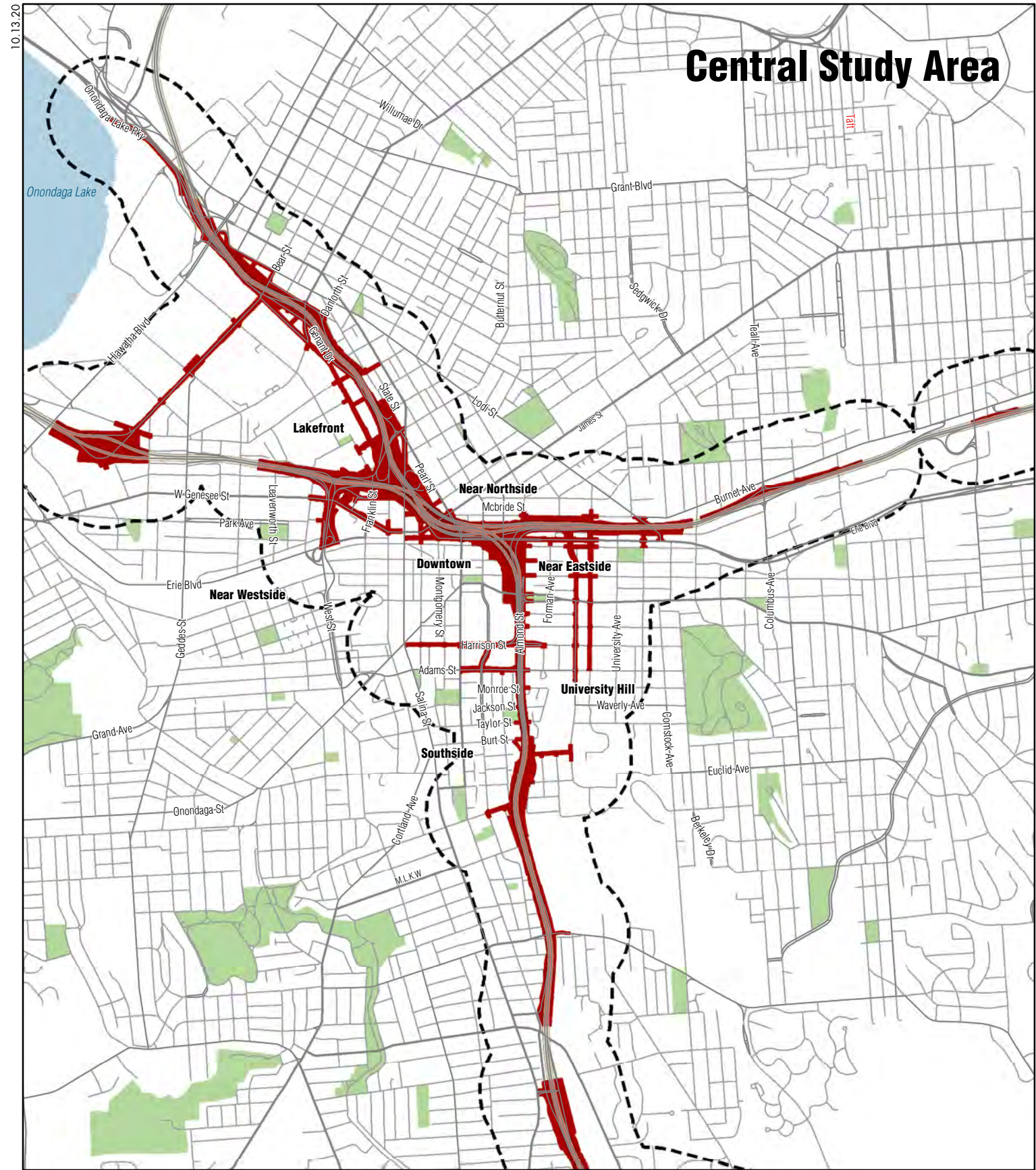
I-81 is part of a roadway network in and around Syracuse that includes connections with Interstate 90 (I-90; New York State Thruway), I-690, New York State (NYS) Route 370 (Onondaga Lake Parkway), I-481, and local roads. As the predominant north-south transportation route, I-81 serves regional commuters, travelers, and commercial vehicles. It provides access to Syracuse’s Downtown (the central business district); University Hill, the education and medical center of the city, which includes Syracuse University and State University of New York (SUNY) College of Environmental Sciences and Forestry, as well as SUNY Upstate Medical University and other medical institutions; and many other neighborhoods.

#### 2.2 NATURAL ENVIRONMENT

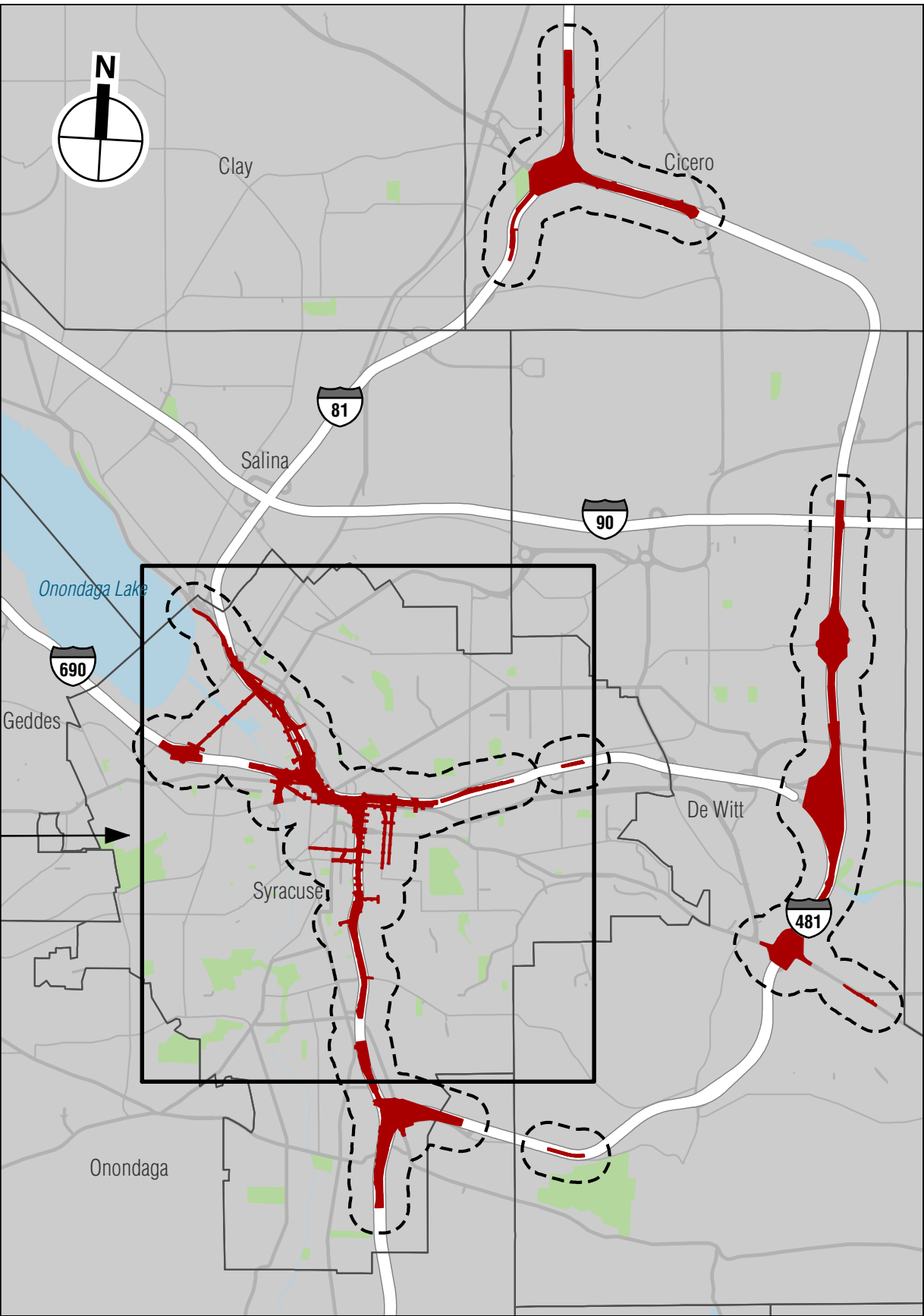
The I-81 Viaduct Project is located entirely within Onondaga County. Onondaga County is a 793.5-square-mile area in central New York State (“Central New York”). The county is bounded by Oswego County to the north, Madison County to the east, Cortland County to the south, and Cayuga County to the west.

Onondaga County straddles two physiographic regions, the Erie-Ontario Plain in the north and the Allegheny Plateau in the south. These are separated by the east/west-trending Onondaga Limestone Escarpment south of the City of Syracuse. The Erie-Ontario Plain is characterized by low-lying lake plains interspersed with low hills and ridges, and the Allegheny Plateau is characterized by rolling hills with rock cuts and areas of steep terrain.

The I-81 Viaduct Project occurs within the Onondaga Lake Watershed, part of the larger Oswego River Basin, which drains all but the westernmost portion of the Finger Lakes Region. Onondaga Lake is fed by several streams including Onondaga Creek, Geddes Brook, and Nine Mile Creek. The lake outlets into the Seneca River, which flows north and west and joins with the Oneida River to form the Oswego River. The Oswego River flows into Lake Ontario, which drains into the St. Lawrence River. Areas south of the Onondaga Limestone Escarpment are part of the Susquehanna watershed and drain southward toward the Susquehanna River.



**Project Limits**  
**Study Area (1/4-Mile Boundary)**



**Project Limits**  
**Study Area (1/4-Mile Boundary)**

A unique feature of Onondaga County is a brine-filled aquifer, which is the source of the salt springs that fueled the early economy of Syracuse. The brine is up to six times as salty as seawater. The United States Geological Survey (USGS) has demonstrated that the brine found within the aquifer derives from local halite (i.e., rock salt) beds located within the Syracuse Shale Formation south of the City of Syracuse.

Onondaga Lake lies about one-half mile west of I-81 and is the largest water body in Onondaga County. The lake stretches northwesterly from the Lakefront neighborhood in the City of Syracuse to Onondaga Lake County Park in the Town of Van Buren. It is about 4.6 miles long and 1.0 mile at its widest point. The lake is fed primarily by Nine Mile Creek, Onondaga Creek, and Ley Creek.

As described in **Section 6-4-8, General Ecology and Wildlife Resources**, seven ecological communities have been identified in the Project Area. The largest ecological community is classified as a “terrestrial cultural” ecological community. Terrestrial cultural ecological communities are those that are “either created and maintained by human activities or are modified by human influence to such a degree that the physical conformation of the substrate, or the biological composition of the resident community, is substantially different from the character of the substrate or community as it existed prior to human influence” (Edinger et al. 2014). Other communities present within the area are smaller and include successional southern hardwoods, successional old field, successional shrubland, floodplain forest (including forested wetlands), freshwater wetlands, and open surface water. In general, the ecological communities are dominated by species that are non-native and invasive or native pioneer species of low ecological value.

Onondaga County has a humid continental climate and is known for the extensive levels of snowfall it receives. Syracuse routinely receives annual snow in excess of 100 inches.<sup>1</sup> The City averages about three to four inches of precipitation per month. Temperatures range from an average low of 17 degrees in January to an average high of 82 degrees in July.<sup>2</sup>

## 2.3 BUILT ENVIRONMENT

### 2.3.1 DEVELOPMENT HISTORY

Paleoindian groups were the first to colonize Central New York following the retreat of continental glaciers around 13,000 years ago. These nomadic people had limited permanent settlements in the area. As occurred in many areas in North America, indigenous populations settled into the landscape during the Archaic Period approximately 10,000 years ago when small groups of hunter-gatherers reduced their mobility and exploited the diverse resources available to them in deciduous/coniferous forests. Over time, several Native American tribes formed within Central New York and the Onondaga Nation settled in Onondaga County.

Large salt deposits in Onondaga County attracted French missionaries in 1654, which began the area’s European settlement.<sup>3</sup> Small settlements developed in Onondaga County through the early 1800s.

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<sup>1</sup> <http://www.tsforecast.com/seasonalsnowfall.html>. Accessed October 9, 2019.

<https://weather.com/storms/winter/news/syracuse-new-york-100-inches-of-snow-winter-2016-2017>. Accessed February 10, 2020.

<sup>2</sup> <http://www.usclimatedata.com/climate/syracuse/new-york/united-states/usny2737>. Accessed September 29, 2021.



Once the Erie Canal opened in 1825, the export of salt became an important trade for the area. The Villages of Syracuse and Salina were consolidated into the City of Syracuse in 1847, and salt remained the City's primary commodity through the Civil War. Its role in salt mining led to the distinction of Syracuse as the "Salt City."

In the late 1800s, salt production declined, but products such as automobiles and furniture became prominent industries for the area.<sup>3</sup> Syracuse retained an economy heavily focused on industrial production up until about the 1970s, but then many manufacturers left the area or closed. Today, the regional economy is focused in the health care, education, and service sectors (see **Section 6-3-2, Local and Regional Economies**).

The City's population grew rapidly until about 1930, but much of the rest of Onondaga County remained rural, with few residents. By 1950, the City had approximately 220,000 residents and Onondaga County had approximately 342,000 residents.<sup>4</sup> Since 1950, the City's population has declined, but the County population has increased. As of 2018, Onondaga County has 461,809 people, and the City of Syracuse has 142,749 people.<sup>5</sup>

The region's interstate highway system has been developed since 1950. I-81 was originally designed as part of New York State's development of a highway master plan, as a result of the 1944 Federal Highway Act, which provided funding for interstate highway construction. This plan included the highway's north-south alignment through Syracuse.<sup>6</sup> The construction of I-81 was complete by the end of the 1960s and resulted in the acquisition of residential and commercial properties as well as relocation of the residents within its alignment through the center of the City. At the same time, the east-west interstate highway, I-690, was also under construction and resulted in further displacement of residences and businesses. I-90 opened through Onondaga County in 1954. Segments of what is now I-481 became operational in 1965, and the highway was officially designated as I-481 in 1970.

### 2.3.2 KEY DESTINATIONS IN THE PROJECT AREA

The south interchange of I-81 and I-481 is located in the Valley neighborhood and south of the Brighton and Outer Comstock neighborhoods at the south end of Syracuse (see **Figure 2-2**). I-81 forms the border between the Outer Comstock and Brighton neighborhoods as it continues northward to Downtown Syracuse.<sup>7</sup> In this area, development west of the highway is generally low-density, single-family residential; Oakwood Cemetery is located to the east of the highway. The Dr. King Elementary School is located west of I-81 where it crosses Martin Luther King, Jr. East (MLK, Jr. East), which was formerly known as Castle Street. On the east side of I-81, the SUNY College of Environmental Science and Forestry and Syracuse University campuses are located immediately north of Oakwood Cemetery. The Syracuse University campus includes the Carrier Dome, which can

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<sup>3</sup> <http://www.u-s-history.com/pages/h2462.html>. Accessed August 17, 2016.

<sup>4</sup> <https://www.biggestuscities.com/city/syracuse-new-york>. Accessed August 18, 2016.  
<http://mapserver.lib.virginia.edu>. Accessed August 18, 2016.

<sup>5</sup> U.S. Bureau of the Census, Annual Estimates of the Resident Population for Incorporated Places: July 1, 2018. Accessed November 22, 2019.

<sup>6</sup> New York State Department of Transportation (NYSDOT). <https://www.dot.ny.gov/i81opportunities/history>. Accessed August 2, 2017.

<sup>7</sup> A more detailed description of the neighborhoods and subareas is provided in Chapter 6-2.



Key Destinations in the Project Area  
Figure 2-2

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accommodate about 33,000 spectators for basketball games and nearly 50,000 spectators for football games. The Carrier Dome also hosts concerts and special events throughout the year.

North of the New York, Susquehanna and Western Railway tracks near Renwick Avenue, the density of development increases, and the alignment of I-81 is between the Southside and University Hill neighborhoods. The Southside neighborhood is primarily a residential area with publicly subsidized housing developments. Pioneer Homes was constructed between 1938 and 1940 and was one of the first Federally funded housing projects in New York State.<sup>8</sup> Pioneer Homes is located on both the west and east sides of I-81, between East Adams Street and East Taylor Street. Wilson Park, which includes a pool, splashpad, basketball courts, a playground, and a community center, is located between Taylor, Jackson, and Almond Streets.

Toomey Abbott Tower, a high-rise complex for senior citizens, is located east of I-81 at Burt Street. The Syracuse Veterans Administration (VA) Hospital and Syracuse University campus are east of Toomey Abbott Tower. A section of Pioneer Homes is located between Taylor and Monroe Streets. Immediately east and north of Pioneer Homes is the campus of SUNY Upstate Medical University and Crouse Hospital. SUNY Upstate Medical University also has several parking garages and lots north of Adams Street and east of I-81, as well as medical facilities on the west side of I-81 north of Adams Street.

Adams Street is the northern extent of the Southside neighborhood, and it is the southern edge of the Downtown neighborhood in Syracuse. Many of the City's civic and commercial centers are located in Downtown, including City Hall and the Onondaga County Supreme Court House, the Oncenter and War Memorial Arena (civic and convention center), the Everson Museum of Art, and government and commercial office buildings. Along I-81, there are high-rise residential towers, surface parking lots, and low-density commercial buildings. The Erie Canal Museum is located at the north end of Downtown near the I-81 and I-690 interchange.

I-81 forms the eastern edge of Downtown. East of I-81, the University Hill neighborhood continues north of the campuses of Syracuse University and SUNY Upstate Medical University. The University Hill neighborhood has a number of apartment buildings marketed toward students, several of which were recently constructed, and several more are planned. It also has medical office buildings (both affiliated and not affiliated with the area's hospitals), hotels, retail stores, and restaurants. Near I-81 is the Hutchins Psychiatric Center complex and the Syracuse Central School District administrative offices. Forman Park, a city park established in 1839, is located at East Genesee Street, immediately east of I-81. The Connective Corridor, a designated bicycle and pedestrian path, follows East Genesee Street beneath I-81 on its route from West Street to University Avenue.

North of Genesee Street and east of I-81 is the Near Eastside neighborhood, which is occupied by many surface parking lots and some commercial, institutional, and residential development. Several blocks in this area are slated for redevelopment. I-690 forms the northern extent of the Near Eastside neighborhood.

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<sup>8</sup> National Park Service (NPS). 2004. Multiple Property Documentation Form: Public Housing in the United States, 1933-1949.

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I-81 turns westward where it meets I-690, and the two highways are located one on top of the other. The I-81 and I-690 viaducts serve as the northern boundary of Downtown. Beneath the highways is surface parking used primarily by Downtown office workers.

Near North Salina Street, I-81 curves northward, on an alignment between the Lakefront/Franklin Square and Northside neighborhoods.<sup>9</sup> Franklin Square, a former industrial area, has been redeveloped into a residential community with converted loft buildings, condominiums, and apartments. The Inner Harbor development, under way in the Lakefront neighborhood, is planned to include 500 residential units, 50,000 square feet of retail space, two hotels, banquet facilities, and possibly 100,000 square feet of office space. Destiny USA is a 2.4 million-square-foot retail and entertainment complex located at the northwest edge of the Lakefront, where I-81 exits the Project Area.

Northside is a mixed-use neighborhood. North State Street is a commercial corridor with several historic buildings. St. Joseph's Hospital occupies several blocks east of North State Street. Commercial uses are generally located along I-81 and I-690 in this area, and the neighborhood becomes more residential farther away from the highways.

I-690, an east-west highway through the Project Area, is located between the Downtown and Lakefront neighborhoods. I-690 enters the Project Area from the west, and then follows a route between the Near Eastside and Northside neighborhoods. Generally, the blocks on either side of I-690 in this area contain low-density commercial uses and parking lots. I-690 crosses Crouse Avenue and Irving Avenue east of Downtown. These north-south arterials between Northside and University Hill currently do not have access from I-690. Crouse Avenue is lined with local businesses, industrial buildings, and residential dwellings. North of I-690 is a residential community with mixed-use neighborhoods. Commercial buildings are closer to I-690; residential developments are south of Madison Street. Crouse Avenue turns into Crouse Drive as it enters Syracuse University south of University Place. Irving Avenue begins south of East Fayette Street with no direct access to I-690. It is occupied by surface parking lots, local businesses, and residential units. There are several student housing centers, and farther south along Irving Avenue are the Upstate Medical University Hospital, Crouse Hospital, Syracuse VA Medical Hospital, and the Carrier Dome.

I-481 intersects I-81 in the Valley neighborhood in the southern part of the City of Syracuse. It travels through the Towns of Onondaga, DeWitt, Cicero, and Clay before meeting I-81 again in the Village of North Syracuse. Between its south interchange with I-81 and Interchange 1 (Brighton Avenue), I-481 passes light commercial uses, rock quarries, and the Onondaga County Resource Recovery Agency trash to energy facility. Between Interchanges 1 and 2, the area adjacent to the highway is mostly undeveloped except for a mobile home court and a trucking company. Closer to Jamesville Road (Interchange 2), there are subdivisions of single-family homes west of I-481 and rock quarries to the east. The Butternut Creek Golf Course abuts the west side of I-481 north of Jamesville Road, while single-family homes are located to the east. More dense suburban development occurs near Interchange 3 (NY 5/NY 92), including several subdivisions of single-family homes, ShoppingTown Mall, and retail and institutional uses along East Genesee Street.

Near the I-481 and I-690 interchange (Interchange 4) are a number of trucking companies and other low-density commercial uses. I-481 then spans the CSX mainline railroad tracks on 2,100-foot-long

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<sup>9</sup> The Northside neighborhoods include Washington Square, Prospect Hill, Hawley-Green, and Lincoln Hill.

dual bridges. North of the tracks, there are office parks, light commercial uses, and industrial buildings west of the highway, and forested areas to its east. This pattern of development continues to NY 298 (Interchange 7).

From Interchange 7 to Northern Boulevard (Interchange 8), there is limited development on either side of I-481. Near the Northern Boulevard interchange, there are some light industrial buildings and trucking companies. Between the Northern Boulevard interchange and the I-81 north interchange, both sides of the highway are bordered by subdivisions of single-family homes.

### 2.3.3 TRANSPORTATION CORRIDOR

I-81 is a north-south, primary interstate highway extending 850 miles from Tennessee to the Canadian border. In and near the City of Syracuse, I-81 connects with I-481, an auxiliary interstate route that bypasses the city to its east; I-90 (New York State Thruway), a primary east-west interstate that crosses New York State from Erie, Pennsylvania to Stockbridge, Massachusetts; and I-690, an auxiliary route that begins at I-481 and travels northwesterly through Downtown Syracuse and along the southern shore of Onondaga Lake to I-90.

I-81 provides two to three lanes in the northbound and southbound directions through the Project Area. Three lanes in each direction are provided from Colvin Street to Burt Street. North of Burt Street, the highway provides two mainline lanes to State Street/Pearl Street in the northbound direction and to Butternut Street in the southbound direction. There are multiple entrance and exit lanes in this area. The highway continues as three lanes in each direction north of Butternut Street and beyond Hiawatha Boulevard. Including the south and north interchanges with I-481, I-81 has 15 interchanges in the Project Area (see **Table 2-1** and **Figure 2-2**).

I-690 is an east-west interstate highway extending almost 14 miles from I-90 in the Town of Van Buren west of the Project Area to I-481 in the Town of DeWitt. In the Project Area, I-690 provides three lanes in each direction between Hiawatha Boulevard West and Leavenworth Avenue and two lanes in each direction from Leavenworth Avenue to State Street. However, between Leavenworth Avenue and West Street, there are two additional lanes in each direction that accommodate the convergence and divergence of the West Street ramps. East of State Street, the ramps from I-81 merge onto I-690, and I-690 continues as three lanes in each direction through the remainder of the Project Area. I-690 has four interchanges within the Project Area (see **Table 2-1** and **Figure 2-2**).

I-481 is an auxiliary route, bypassing the City of Syracuse to the east. From south to north, it begins at its interchange with I-81 in the Valley neighborhood (City of Syracuse) and follows a northeasterly alignment to New York State Routes 5/92 (Interchange 3) in the Town of DeWitt. It becomes a north-south roadway to East Taft Road in North Syracuse where it turns northwesterly to meet I-81 and NYS Route 481 in North Syracuse. Much of I-481 is two lanes in each direction, with deceleration and acceleration lanes at the interchanges. The highway provides three northbound lanes from just north of NYS Routes 5/92 to I-690, and three southbound lanes from I-690 to about Andrews Road. I-481 has inside and outside shoulders in both directions of travel. Including its interchanges with I-81, I-481 has 10 interchanges, which include connections to I-690 and I-90 (see **Table 2-1** and **Figure 2-2**).

The Downtown Syracuse street network generally consists of a grid of east-west and north-south streets. Some major arterials servicing this part of the City include Erie Boulevard/West Genesee Street (NY 5), East Genesee Street (NY 92), State Street (US 11), James Street (NY 290), Harrison



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Street, Adams Street, and West Street. The street pattern becomes more irregular outside of Downtown, with minor roadways generally feeding arterials that lead either to Downtown or outward from the City (i.e., NYS 370 [Onondaga Lake Parkway], Old Liverpool Road, NY 298 [Court Street], and NY 5 [Genesee Turnpike]).

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Table 2-1  
Highway Interchanges in the Project Area

INTERSTATE 81 (FROM SOUTH TO NORTH)				
Interchange Name (Number)	Northbound Exit	Northbound Entrance	Southbound Exit	Southbound Entrance
I-481 (16A)	✓	✓	✓	✓
South State Street/South Salina Street/Brighton Avenue (17)	✓	✓ <sup>10</sup>	✓	✓
Harrison Street/Adams Street (18)	✓	✓	✓	✓
Eastbound I-690	✓	✓	✓	✓
Westbound I-690	✓			✓
Clinton Street / Salina Street (19)		✓	✓	
Franklin Street / West Street (20)		✓	✓	
Spencer Street / Catawba Street (21)			✓	✓
NY 298 / Court Street (22)	✓	✓		
NY 298 / Bear Street (to I-690 West) (22)			✓	✓
Hiawatha Boulevard (23A)			✓	
Destiny USA Drive (23B)			✓	
NY 370 (Park Street) / Hiawatha Boulevard (23)	✓			
Old Liverpool Road – Liverpool (24A)	✓			✓
NY370 (Onondaga Creek Parkway) (24B)	✓			✓
The portion of I-81 between Interchanges 24A and 29S/29N is outside the Project Area.				
I-481 (29S/29N)	✓	✓	✓	✓
INTERSTATE 690 (FROM WEST TO EAST)				
Interchange Name (Number)	Eastbound Exit	Eastbound Entrance	Westbound Exit	Westbound Entrance
Hiawatha Boulevard – Destiny USA (8)	✓			✓
NY 298 (Bear Street) to I-81 north – Watertown (9)	✓			✓
North Geddes Street (10) <sup>11</sup>		✓	✓	
West Street (11)	✓	✓	✓	✓
West Genesee Street (NY 5) - Downtown Syracuse (12)	✓	✓		
I-81		✓	✓	
Townsend Street – Downtown Syracuse (13)		✓	✓	
INTERSTATE 481 (FROM SOUTH TO NORTH)				
Interchange Name (Number)	Northbound Exit	Northbound Entrance	Southbound Exit	Southbound Entrance
I-81		✓	✓	
Brighton Avenue (1)	✓	✓		
Jamesville Road (2)	✓	✓	✓	✓
NY5 / NY92 – DeWitt, Fayetteville (3)	✓	✓	✓	✓
I-690 (4)	✓	✓	✓	✓
Kirkville Road (5)	✓	✓	✓	✓
I-90 (New York State Thruway) (6)	✓	✓	✓	✓
NY 298 – Bridgeport (7)	✓	✓	✓	✓
Northern Boulevard (8)	✓	✓	✓	✓
I-81	✓	✓	✓	✓