Urban Design Typology Analysis

A background report prepared for Richmond 300: A Guide for Growth

October 30th, 2017

VCU
Center for Urban and Regional Analysis
L. Douglas Wilder School of Government and Public Affairs

95% Complete Draft

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Urban Design Defined

Urban Design is the process of creating the public realm through the artful arrangement of buildings and site elements as cities grow and change. The public realm includes publicly-owned streets and rights of way, pathways, parks, plazas, publicly-accessible open spaces, and public and civic buildings. Successful urban designs create meaningful spaces that foster positive social interaction, cultural advancement, and civic identity. Furthermore, good urban design can: enhance a city's image, increases property values, tourism, decrease crime, enhance safety, and foster social equity and environmental, cultural, and economic sustainability.

Richmond's Urban Design

In 1607 Christopher Newport sailed up the James River from Jamestown to discover a link to the West and was interrupted by the falls adjacent to what is now know as downtown Richmond. The first map of the city was laid out in 1737 by William Byrd (see Figure 1). The southwest corner of the map is where East 17th St. and Cary St. are today. The streets and blocks ran parallel to the James River. This geometry remains today in the neighborhood called Shockoe Bottom. This grid pattern has highly influenced the design of the city for 280 years, only being modified to accommodate the turns of the river (see Figure 4).
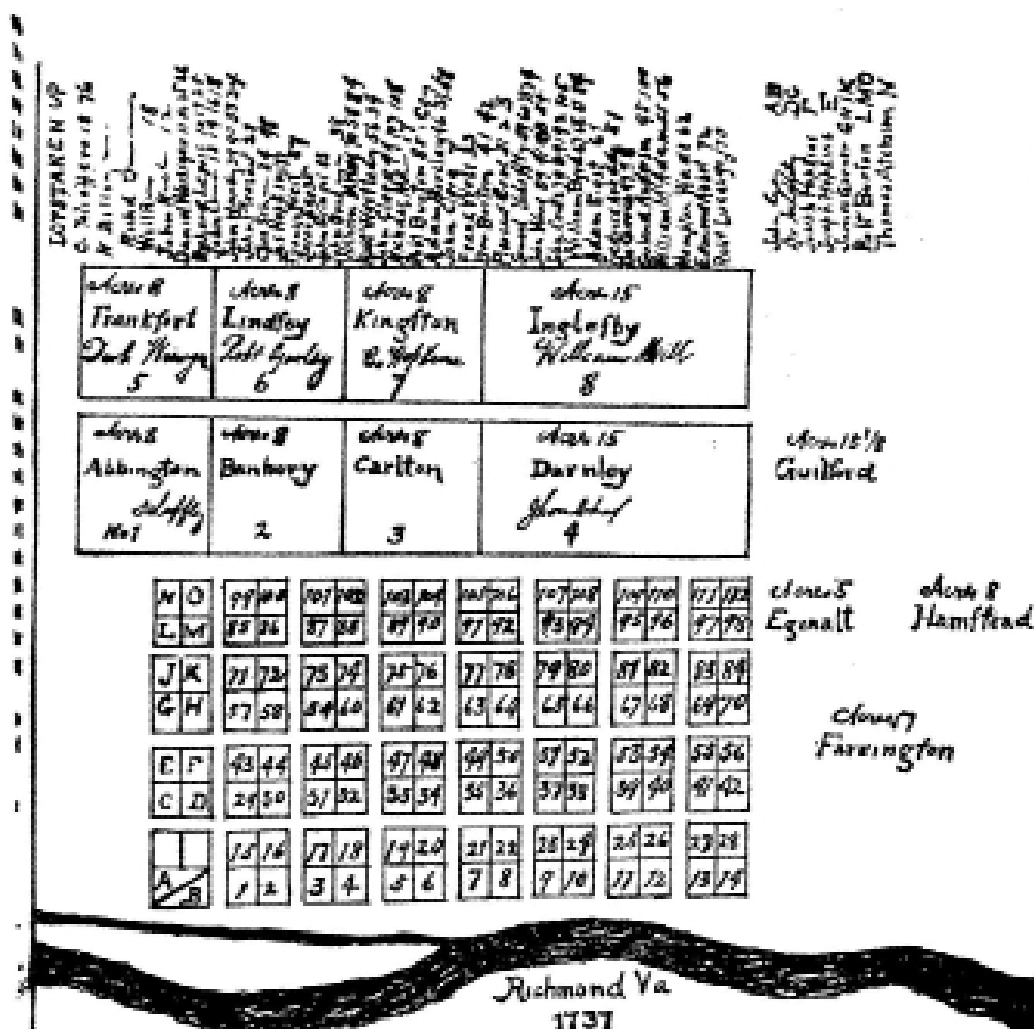

Figure 1. Map of Richmond 1737. Source: Library of Virginia

In 1785, the State Capitol was built (see Figure 3). It was designed by Thomas Jefferson. His design inspiration was from an ancient Roman temple in Nimes, France, called the Maison Carree. The State Capitol was the world's first neoclassical temple. The new architecture soon became the city's central landmark and focal point until tall buildings in the financial district obscured it in the 20th century.
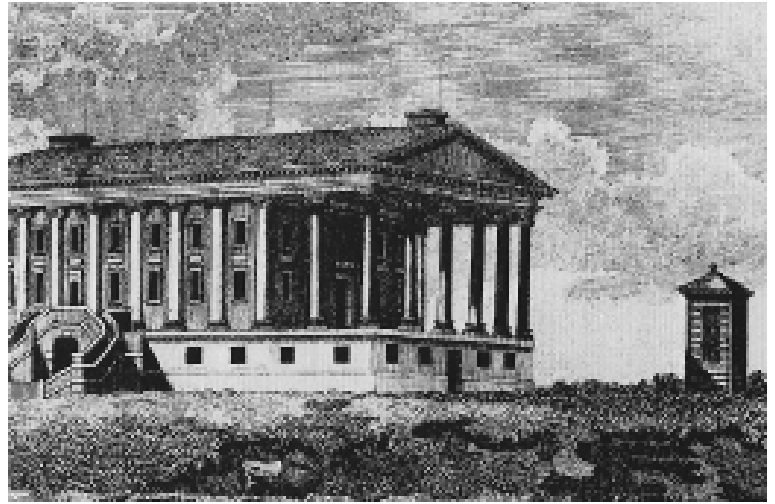
By the 1830s, Richmond was a thriving city (see Figure 2). As shown in Figure 4, the Capitol was surrounded by residential structures and evenly dispersed churches. The James River and Kanahwa Canal were commercial and industrial trade hubs that linked western Virginia to the Atlantic Ocean. This waterway snaked through the industrial heart

Figure 3. Virginia State Capitol.
Source: Ward, Harry, Richmond: An Illustrated History

Figure 2. Richmond circa 1830
Source: Library of Virginia

of the city. By 1865, the mills and factories along Richmond's waterways contributed to an industry that ranked Richmond 13th in the nation in terms of industrial output.

The world's first trolley system opened in Richmond in 1888. Many of the trolley lines extended several miles from downtown, allowing the opportunity for new development to occur in suburban areas (see Figure 5). By the 1920s, this comprehensive system allowed for nearly anyone to easily walk to the trolley from various origins and destinations in the city. Many neighborhoods were built after the construction of the streetcar, including the Fan and Museum District to the west, Ginter Park and Barton Heights to the north, Church Hill to the east and Woodland Heights to the south. Today, the most compact neighborhoods in the city follow the path of the trolley system. The streetcar system was closed in 1949 but its legacy remains. It can be seen most distinctly in the city's historic commercial corridors where buildings were built close to the street and to each other, have publicly accessible uses on the ground floor, uses and large windows and doors that face the right of way.

During the 20th century, the city annexed much territory beyond the reach of the trolley system, expanding the land area more than three times. Public transit gave way to private automobiles. At the city's edges, new buildings were built further apart than in the historic core, making public interaction in space more difficult. This phenomenon also took place in historic areas where large numbers of buildings were destroyed to make way for highways and parking lots.
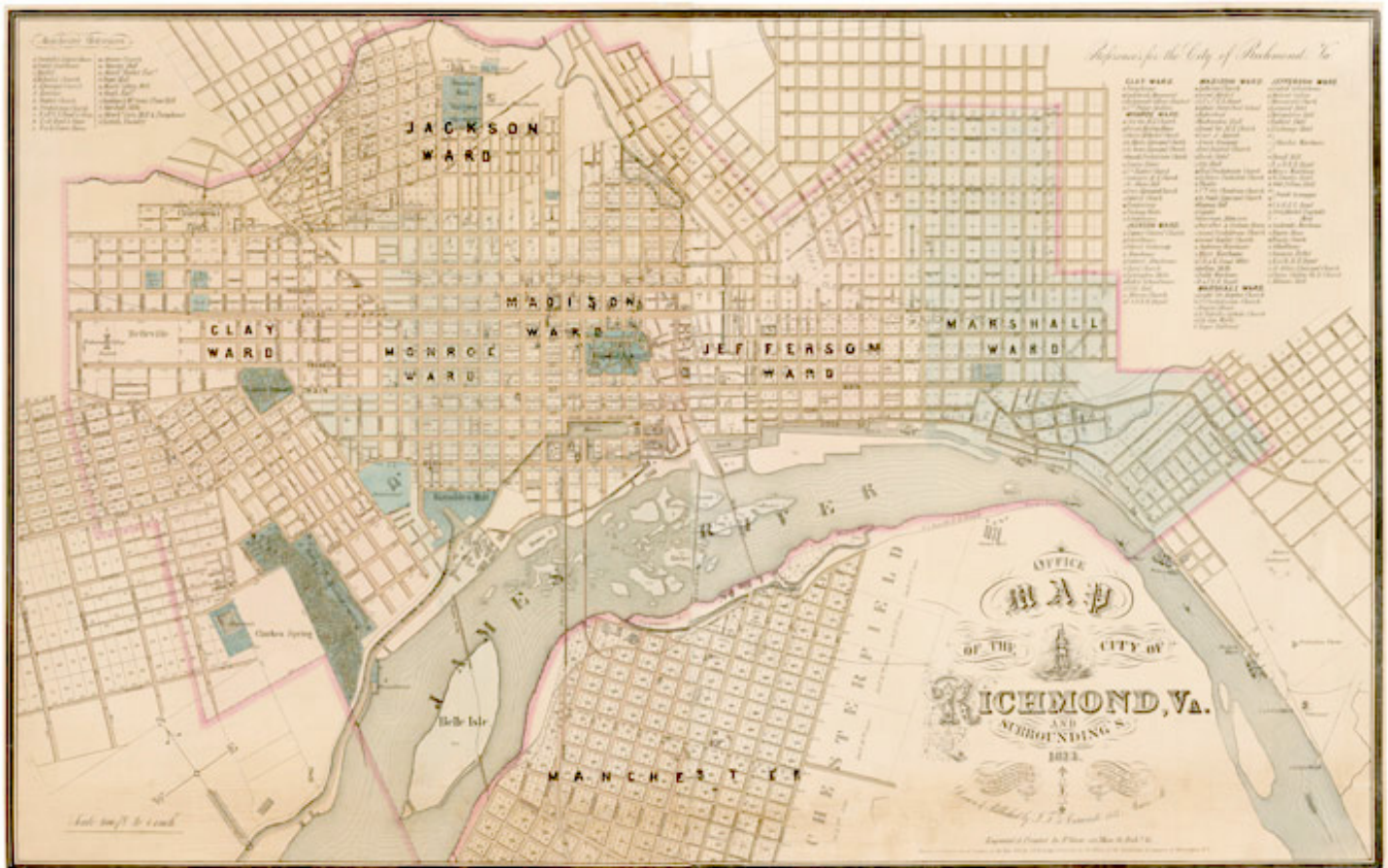

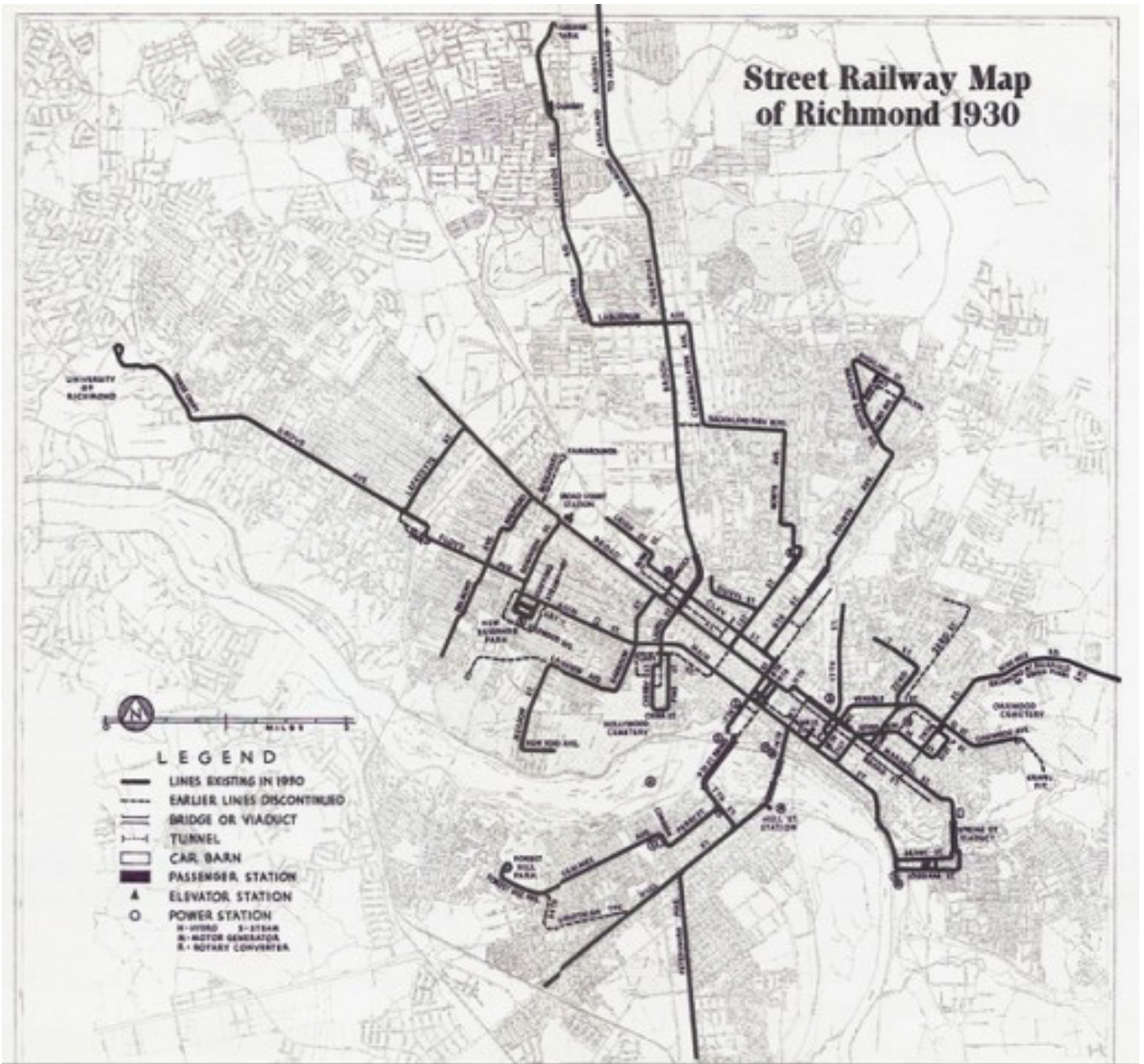Figure 4: Richmond Plan 1873
Source: Library of Virginia

Figure 5. Richmond Trolley Map 1930.
Source: Virginia Library

Since 2010 the city has had a rebirth with population increases. Since 2000, hundreds of old structures have been rehabilitated and re-occupied. In addition, many new buildings have been developed on vacant sites, filling in the gaps in the historic fabric in the city (see Figures 6a and 6b). This infill development has created more defined spaces for people to interact, enhancing the image of neighborhoods, and increasing property values. Most of the new buildings have been built in the central areas of the city, including the campus of Virginia Commonwealth University, Shockoe Bottom, and Manchester. Many vacant sites still need to be filled, particularly along suburban corridors and Monroe Ward, but the city is firmly headed in the right direction to enhance its urban design.

Figure Ground (North), City of Richmond, 2017

Map shows structures of the City of Richmond in black.
Space is represented by white. Notice the predominate
graining of the structures in the east/west axis of the city,
reinforcing the historic evolution of the city. Secondary
lines run north/south, radiating out from the center.
The strongest regular and compact patterns can be
found in the downtown, fan, museum and church hill
neighborhoods. These areas also have some of the
highest, per square foot, land values in the city.
The public realm is weakest in areas where structures
are dispersed and lack coherent patterns.
These are primarily found at the City's periphery.
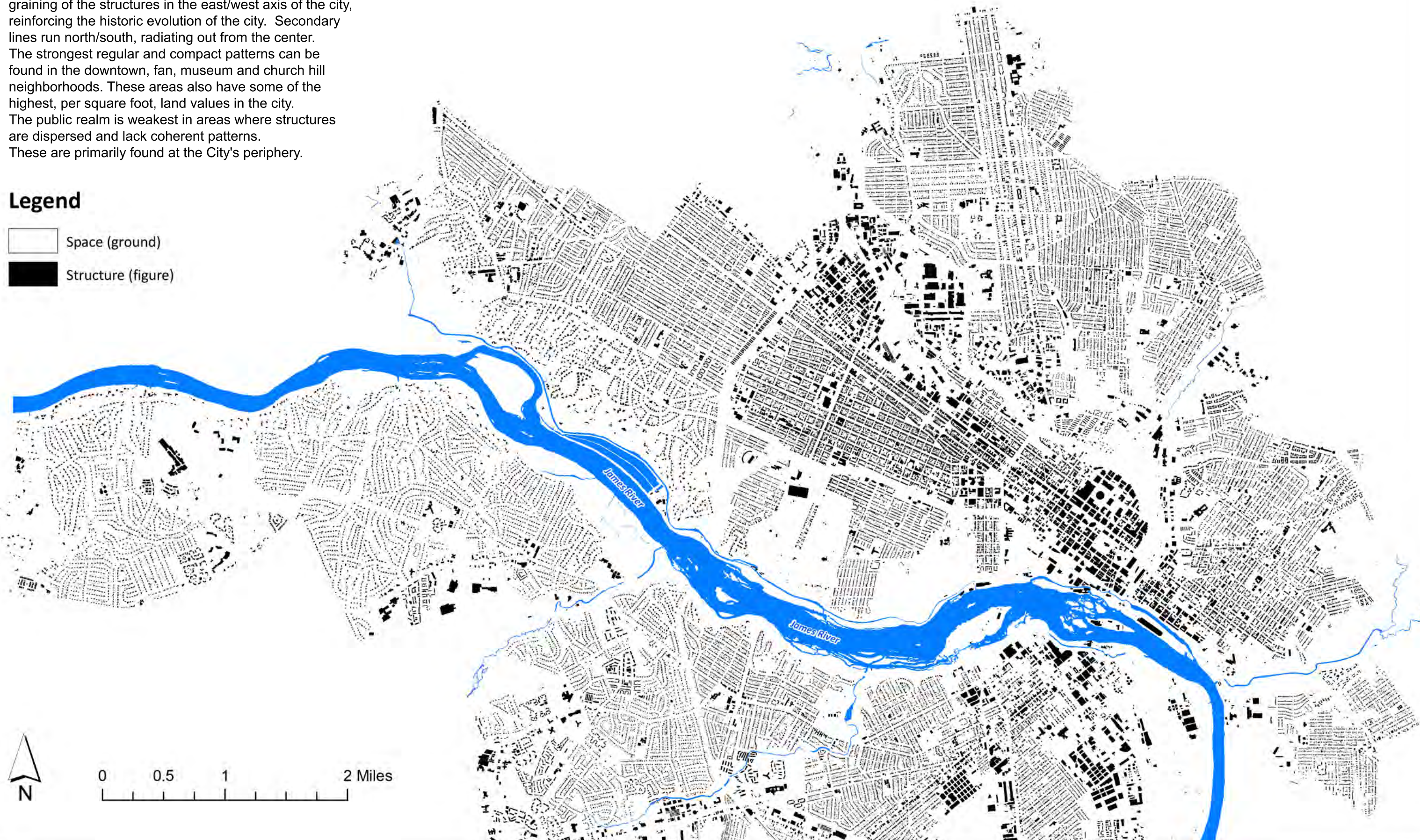
Legend

Space (ground)

Structure (figure)

James River

James River

0   0.5   1   2 Miles

N

Figure Ground (South), City of Richmond, 2017

Map shows structures of the City of Richmond in black, note that structures become more dispersed as they move out from the center. One notable exeption is the large industrial structures alongside Jefferson Davis Highway, and the James River, South from downtown.

Legend

☐ Space (ground)

■ Structure (figure)

James River

0   0.5   1   2 Miles

N
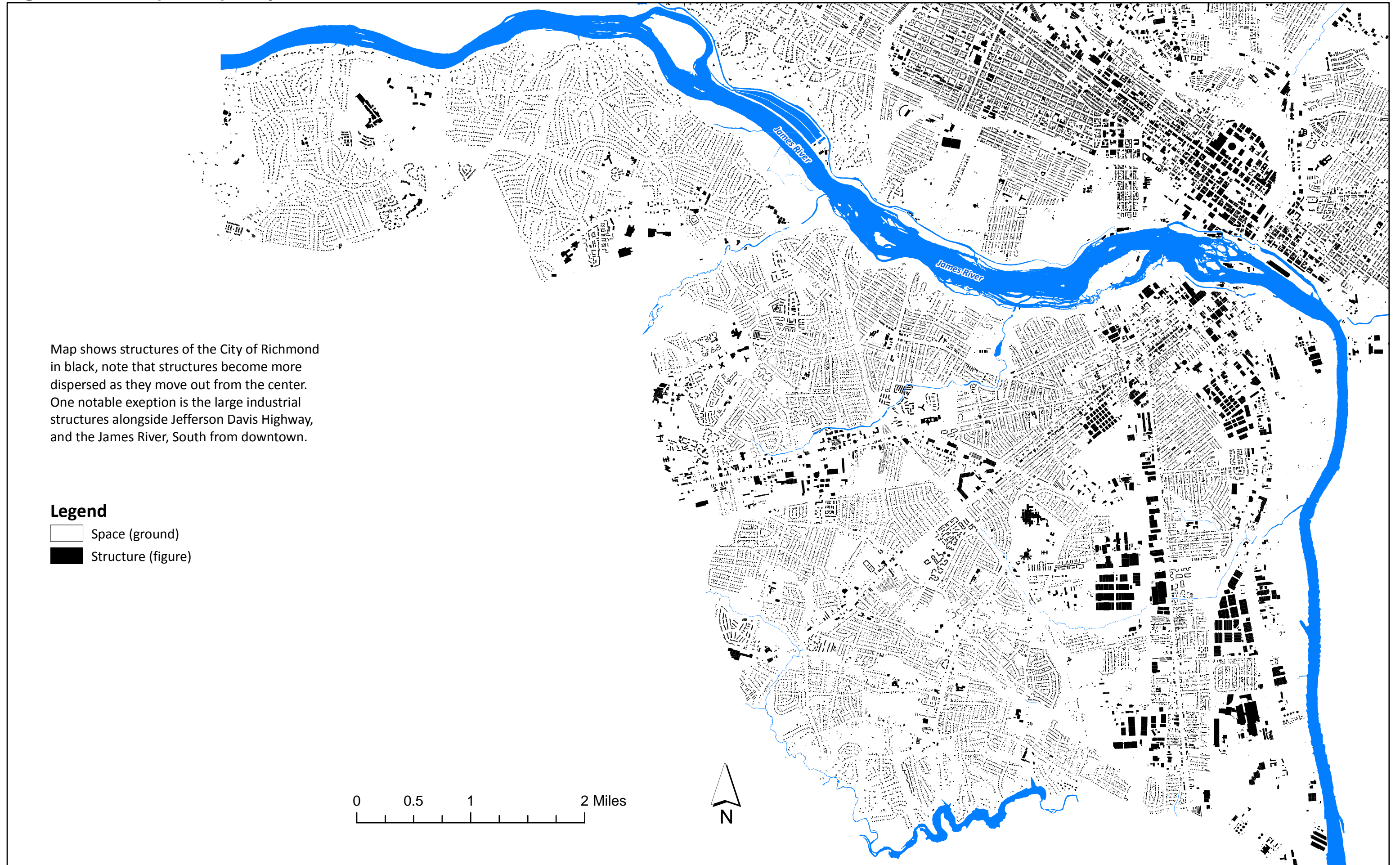
Urban Design Typology Map (North), City of Richmond, 2017

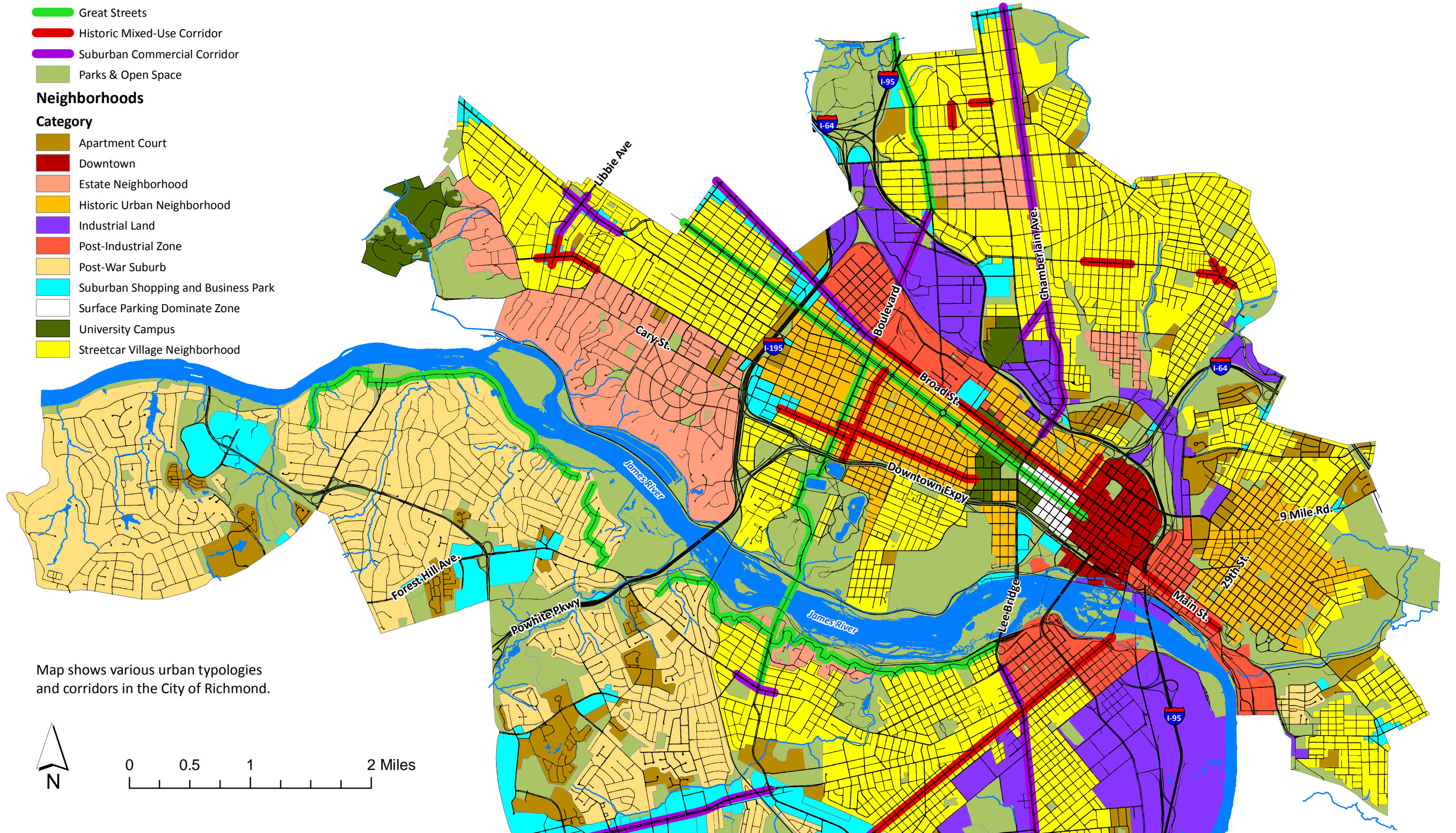**Legend**

Corridors

Category

- 🟢 Great Streets
- 🔴 Historic Mixed-Use Corridor
- 🟣 Suburban Commercial Corridor
- 🟩 Parks & Open Space

Neighborhoods

Category

- Apartment Court
- Downtown
- Estate Neighborhood
- Historic Urban Neighborhood
- Industrial Land
- Post-Industrial Zone
- Post-War Suburb
- Suburban Shopping and Business Park
- Surface Parking Dominate Zone
- University Campus
- Streetcar Village Neighborhood

Map shows various urban typologies and corridors in the City of Richmond.

N

0   0.5   1   2 Miles

Urban Design Typology Map (South), City of Richmond, 2017

Legend

Corridors

Category

- ▬▬ Great Streets
- ▬▬ Historic Mixed-Use Corridor
- ▬▬ Suburban Commercial Corridor
- ▬ Parks

Neighborhoods

Category

- ▬ Apartment Court
- ▬ Downtown
- ▬ Estate Neighborhood
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- ▬ Streetcar Village Neighborhood

Map shows various urban typologies and corridors in the City of Richmond.
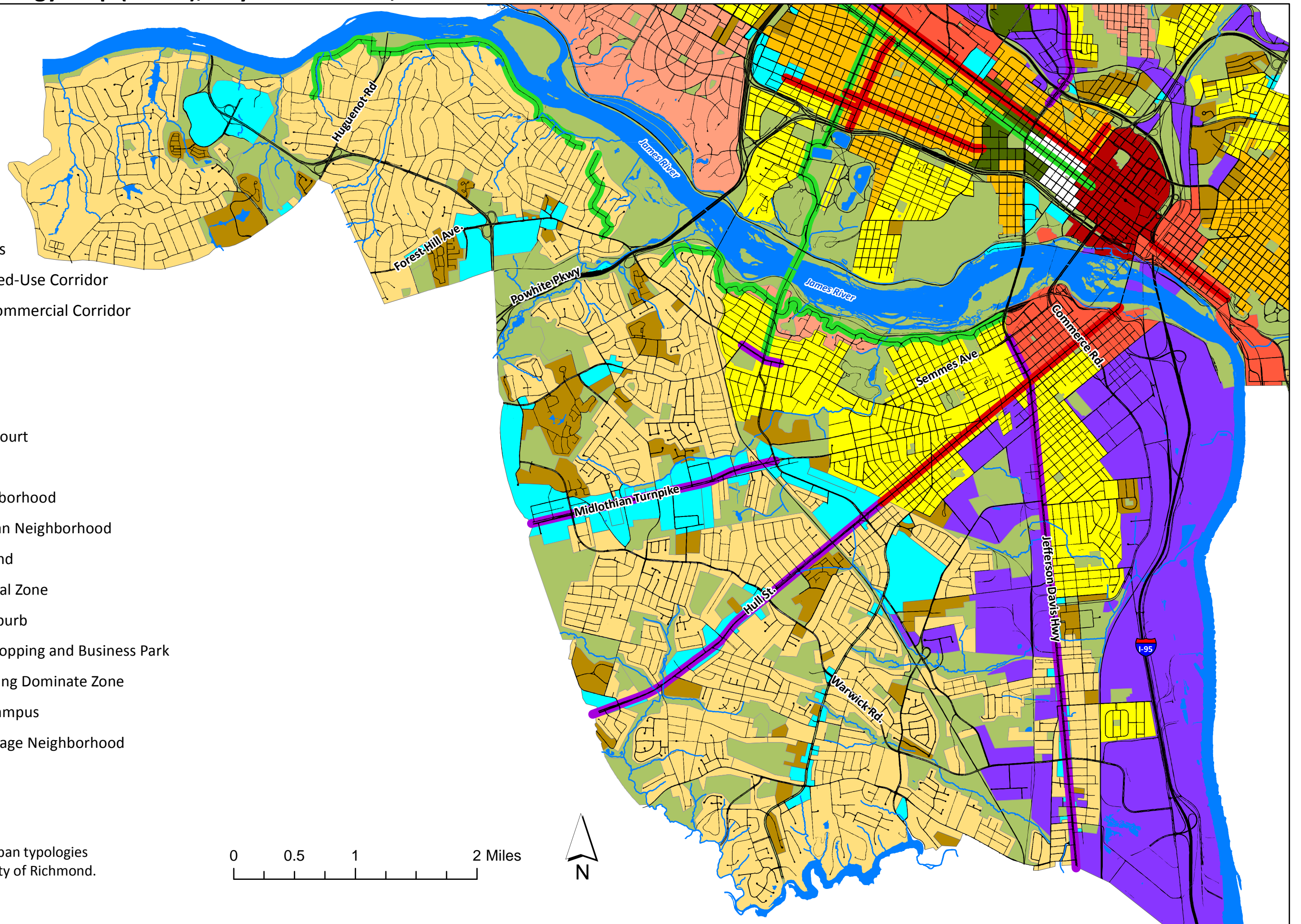
0   0.5   1   2 Miles

N

Huguenot Rd.

Forest Hill Ave.

Powhite Pkwy.

James River

James River

Semmes Ave.

Commerce Rd.

Midlothian Turnpike

Hull St.

Warwick Rd.

Jefferson Davis Hwy.

I-95

This section is an analysis of urban design typologies based on various relationships between buildings and public spaces in the City of Richmond. The following pages illustrate this work.

Inherent in the analysis is an evaluation of places. Good urban design can be defined as the artful arrangement of buildings and public spaces to set the stage for positive public engagement and interaction (see Figure 8). At the neighborhood level, good urban design fosters spatial forms that create interconnected open networks. Well-designed cities foster social exchange of information, goods and services and access to all functions of the city (Jan Gehl, Life between Buildings: Using Public Space. 2006). Well-designed neighborhoods and corridors become attractive in the marketplace and therefore can support a host of values in cities, including increased quality of life, tax revenue, enhanced image, and economic sustainability.

Figure 8: Downtown Mall in Charlottesville, Virginia
source: downtowncharlottesville.net

Glossary & Definitions:

- Public realm   - Public realm includes all exterior places, linkages and built form elements that are physically and/or visually accessible regardless of ownership. It is defined as any publicly owned streets, right of ways, parks, publicly accessible open spaces, and any public and civic buildings and facilities. The public realm is vital if we are to be successful in creating environments that people want to live and work in.[1][2]

- Setback   - The distance from the property line in which building is prohibited.

- Enclosure   - The ratio of height to width. Good sense of enclosure means that the height of the buildings (or mature trees) is in proportion to the width of the intervening public space. The actual ratio depends on the type of street or open space being designed for. [3]

- Landscape   - All the visible features of an area of countryside, land or street, often considered in terms of their aesthetic appeal.

- Right-of-way   - The legal right to pass along a specific route through grounds or property belonging to another.

[1] arc-online.co.uk/public-realm/what-is-public-realm
[2] upc.gov.ae/prdm/public-realm-definition.asp
[3] chrishaile.com/2012/01/a-myth-of-urban-design-the-sense-of-enclosure-theory/

Figure 9: Ground level perspective of Downtown

Primary Defining Characteristics:

This section of the city is built at the center of the metro area adjacent to the State Capitol. The district is dominated by tall commercial structures accommodating mostly office uses with some ground floor retail. Some buildings have recently been converted to residential units. However, the area is mostly financial offices, state offices, the Medical College of Virginia and Virginia Biotechnology Research Park. This area is the most compact in the city with many well-defined public spaces.

- Tall buildings 3-20 stories and above
- Wide variations in heights
- Zero setback
- Mix of old and new structures
- Strong sense of enclosure on the street
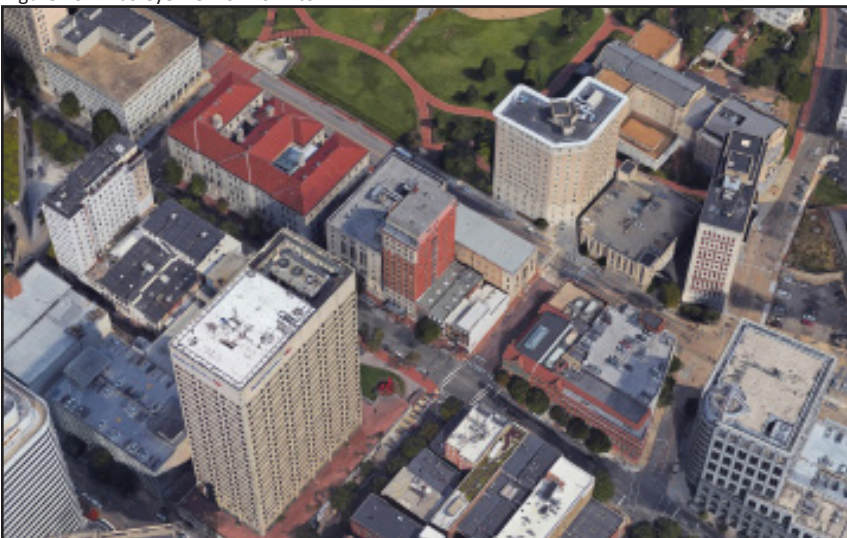
Figure 10: Birds-eye view of Downtown
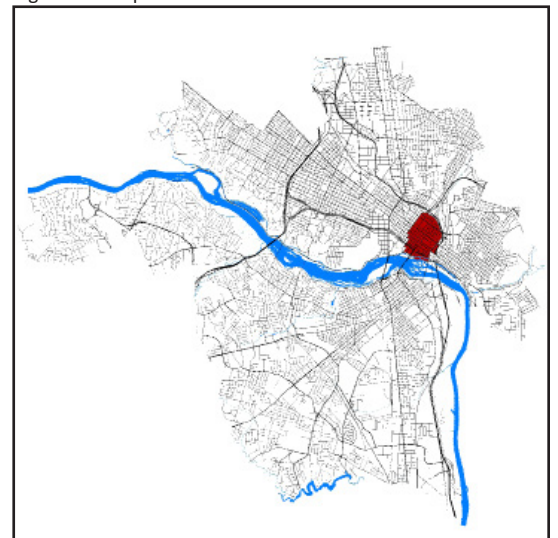

Figure 11: Map of Downtown

Figure 12: Ground level perspective of Surface Parking Dominate Zone

Primary Defining Characteristics:

- Vacant lots
- Gridded street network
- Scattered building sites
- Few street trees or on-site vegetation

This area is located in the historic Monroe Ward neighborhood in downtown. This once vibrant residential and commercial neighborhood has been mostly demolished with notable exceptions, such as the Jefferson Hotel and VCU's Snead Hall. The vacant areas contain surface parking lots devoid of plantings, creating a mostly bleak landscape. This part of the city is prime for redevelopment to fill the many gaps in the historic fabric and improve public realm.

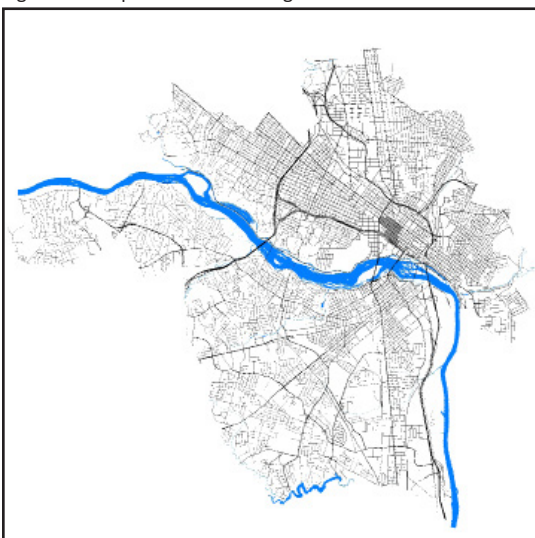Figure 13: Map of Surface Parking Dominate Zone

Figure 14: Birds-eye view of Surface Parking Dominate Zone

Figure 15: Ground level perspective of Industrial Land

Primary Defining Characteristics:

Industrial lands are mainly located in areas accessible to the various rail lines and highways in the city. The largest concentration is on Southside adjacent to the James River. The landscape is dominated by large lots, asphalt, and low-slung buildings with few windows or doors.

- Wide setbacks
- Little sense of enclosure on the street
- Large surface parking areas
- Very large buildings
- Generally 1-3 stories
- Detached
- Sidewalks

Figure 16: Birds-eye view of Industrial Land
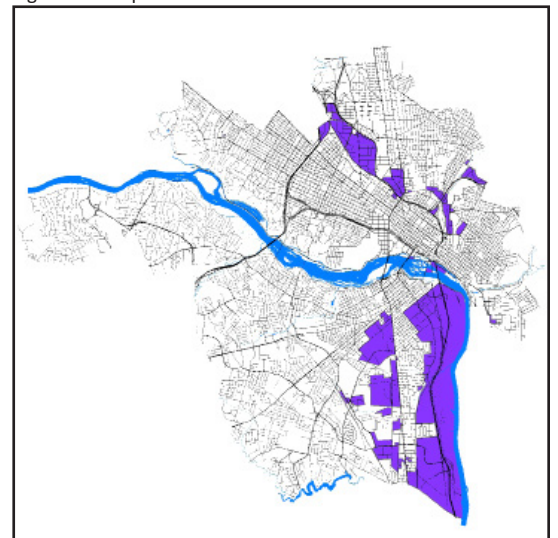

Figure 17: Map of Industrial Land

Figure 18: Ground level perspective of Post-industrial Neighborhood

Primary Defining Characteristics:

- Mix of new and historic industrial structures
- Many vacant lots
- Varying building heights, generally 1 - 10 stories
- Zero to shallow setbacks
- Strong sense of enclosure on street when buildings are present

These sections of the city were born from a strong industrial past that has diminished as industrial technology has transformed. Once-vibrant businesses have either relocated to more suburban locations, have left the region or county, or have ceased to exist. Many of the historic structure remain and have been converted primarily into residential uses. This new investment has attracted new structures to be built. The public realm is coming to life in these areas as these new uses, with a new kind of employment or residential class, emerges.
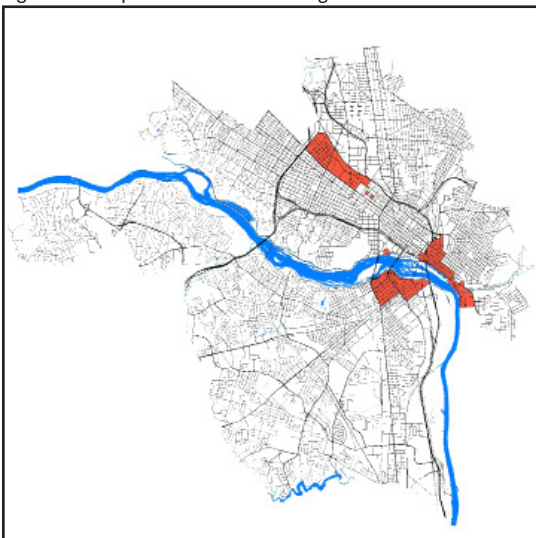
Figure 19: Map of Post-industrial Neighborhood

Figure 20: Birds-eye view of Post-industrial Neighborhood

Figure 21: Ground level perspective of Historic Urban Neighborhood

Primary Defining Characteristics:

These neighborhoods were primarily built between 1880 and 1930 adjacent to downtown following the tracks of the trolley system as the city expanded into the streetcar suburbs. The neighborhoods today are the most compact residential areas in the city and have a strong public realm.

- Attached and narrowly detached buildings
- Porches in front
- Generally 2-3 stories, with taller buildings on major corridors and at corners
- Gridded network of streets
- Shallow setbacks
- Primarily residential
- Strong sense of enclosure on the street

Figure 22: Birds-eye view of Historic Urban Neighborhood

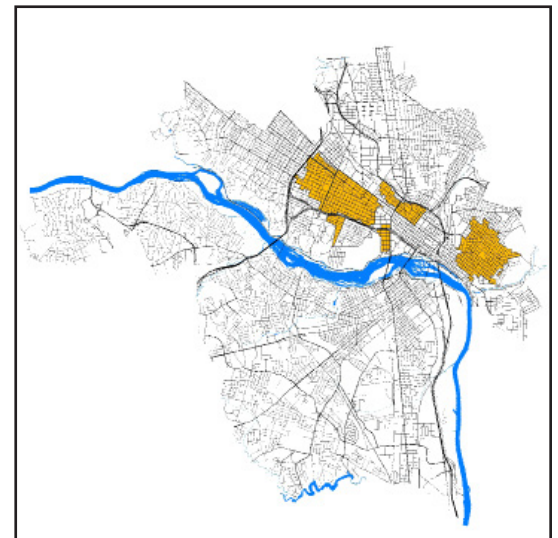Figure 23: Map of Historic Urban Neighborhood

Figure 24: Ground level perspective of Streetcar Village Neighborhood

Primary Defining Characteristics:

- Detached buildings
- Ample setbacks
- Sidewalks
- Interconnected street network
- Generally 1-2 stories
- Primarily residential
- Sense of enclosure on the street with the presence of street trees

These neighborhoods were primarily built between 1910 and 1950. They are located adjacent to the historic urban neighborhoods and originally had access to the historic trolley system. Their interconnected streets, sidewalks, street trees and small lots create a charming atmosphere.
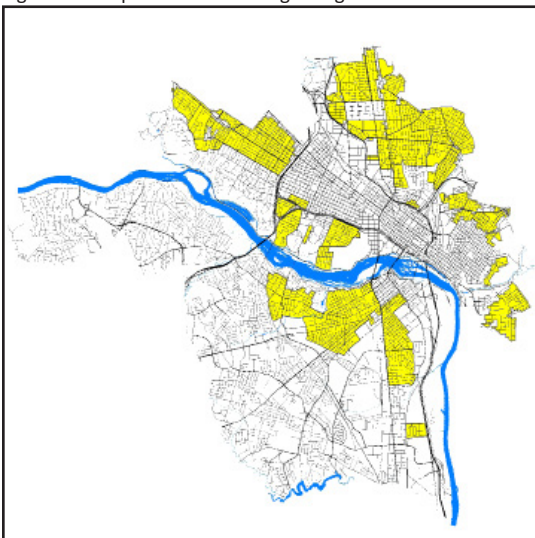
Figure 25: Map of Streetcar Village Neighborhood

Figure 26: Birds-eye view of Streetcar Village Neighborhood

Figure 27: Ground level perspective of Post-war Suburbs

Primary Defining Characteristics:

These neighborhoods were built after WWII in areas beyond the Streetcar Villages. Many were first developed in the surrounding counties built to rural standards. They were subsequently annexed by the city. Most of these low-density neighborhoods are completely car dependent. The public realm is weak in these areas, as the arrangement of buildings do not effectively create public space.

- Detached buildings
- Little sense of enclosure on the street
- Ample setbacks
- Off- street parking, mostly front loaded garages
- No sidewalks
- Ditches for drainage
- Disconnected street network

Figure 28: Birds-eye view of Post-war Suburbs
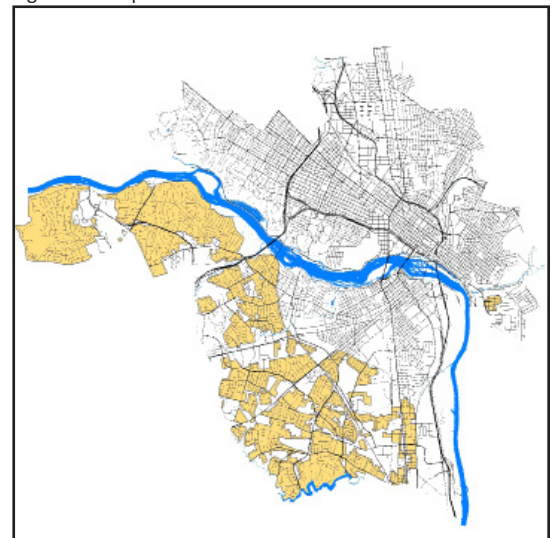

Figure 29: Map of Post-war Suburbs

Figure 30: Ground level perspective of Estate Neighborhood

Primary Defining Characteristics:

- Mix of interconnected streets
- Detached buildings
- Ample setbacks
- Sidewalks
- Generally 2-3 stories
- Primarily residential
- Sense of enclosure on the street with the presence of street trees

These areas were built between 1900 and 1950. They are located adjacent to the historic urban neighborhoods. Most lots were built to accommodate the automobile with rear alleys, garages and carports. The atmosphere is similar to the Streetcar Village except the houses and lots are larger.

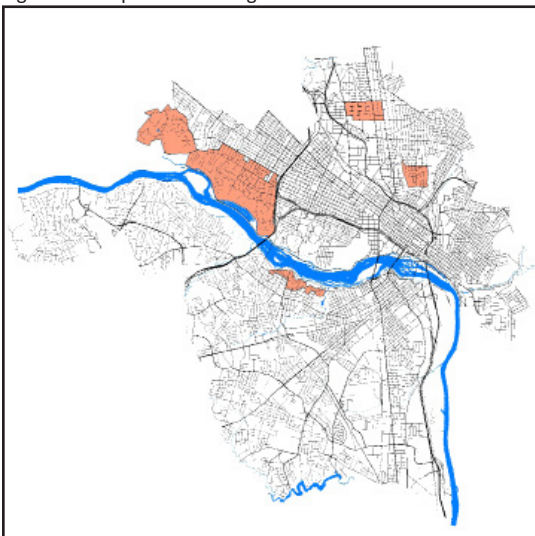Figure 31: Map of Estate Neighborhood

Figure 32: Birds-eye view of Estate Neighborhood

Figure 33: Ground level perspective of Apartment Court

Primary Defining Characteristics:

Apartment Courts are primary located in suburban areas of the city built mostly after WWII. These buildings are mostly stand-alone projects that create their own private campuses due to their inward-looking structure. Rarely do these complexes contribute to, or engage, the public realm.

- Irregular layout
- Generally 1 - 3 stories
- Wide setbacks from the public right-of-way
- Private gardens and courtyards

Figure 34: Birds-eye view of Apartment Court
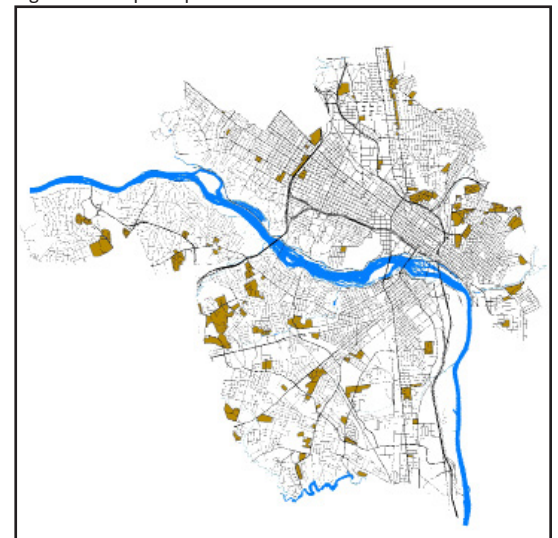

Figure 35: Map of Apartment Court

Figure 36: Ground level perspective of Suburban Shopping and Business Park

Primary Defining Characteristics:

- Detached buildings
- Very wide setbacks
- Large parking lots
- Generally 1-2 stories
- Primarily commercial
- No sense of enclosure on the street

Suburban shopping centers and office parks define these areas of the city. Automobile parking lots dominate building sites. Many lots feature huge signs. The public realm along the right-of-way is nearly non-existent.

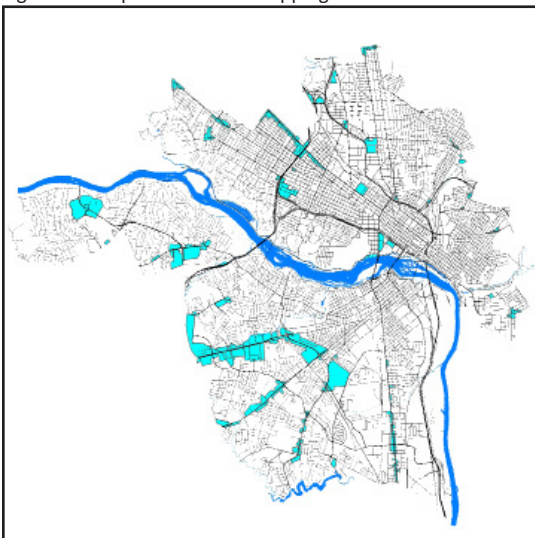Figure 37: Map of Suburban Shopping and Business Park

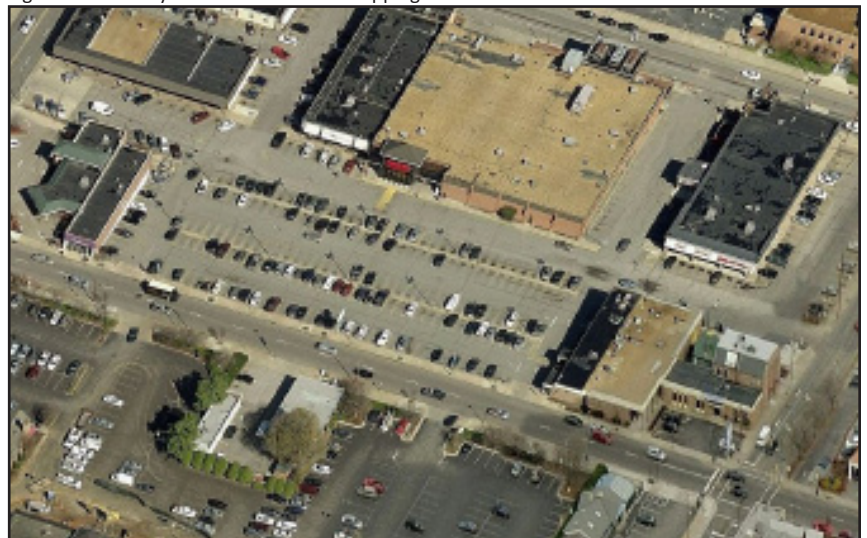Figure 38: Birds-eye view of Suburban Shopping and Business Park

Figure 39: Ground level perspective of University Campus

Primary Defining Characteristics:

The campuses of Virginia Commonwealth University, Virginia Union University, Union Presbyterian Seminary and University of Richmond create these four zones in the city. Here there is a mix of urban - and suburban-style buildings with interior courtyards and open spaces. The buzz of campus activity spills over into the public realm, enlivening the city.

- Generally 1 - 6 stories
- Mix of setbacks from zero to over 100 feet
- City street network embraces geometry of schools
- Street trees define streets

Figure 40: Birds-eye view of University Campus
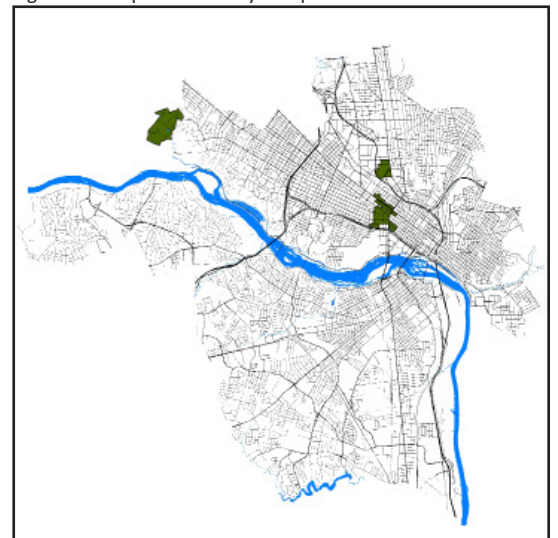

Figure 41: Map of University Campus

Urban Typologies

Figure 42: Ground level perspective of Parks & Open Space

Primary Defining Characteristics:

- Open spaces filled with plantings including trees, shrubs, and ground cover
- Many feature fountains, ponds and lakes

The city features a variety of open spaces, including small quarter-acre playgrounds in the Fan, large passive parks such as Byrd Park and Bryant Park and the wild James River Park system. Another strong element are the green spaces behind the houses. All are public gathering points for the city and region.

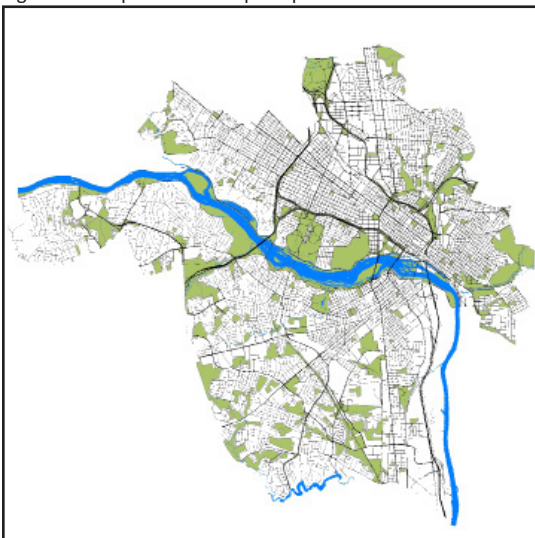Figure 43: Map of Parks & Open Space

Figure 44: Birds-eye view of Parks & Open Space

Figure 45: Ground level perspective of Great Streets

Primary Defining Characteristics:

Great streets in the city include Monument Avenue, the Boulevard and Riverside Drive. The public realm is very strong along these corridors because of the careful interweaving of site elements (either natural or built) and buildings directly face the street.

- Strong corridor identity created by distinctive site elements in the streetscape (for example, river, monuments, or boulevard of trees)
- Attached, narrowly detached, and detached buildings
- Often porches in front
- Generally 2-3 stories
- Primarily residential

Figure 46: Birds-eye view of Great Streets

Figure 47: Map of Great Streets
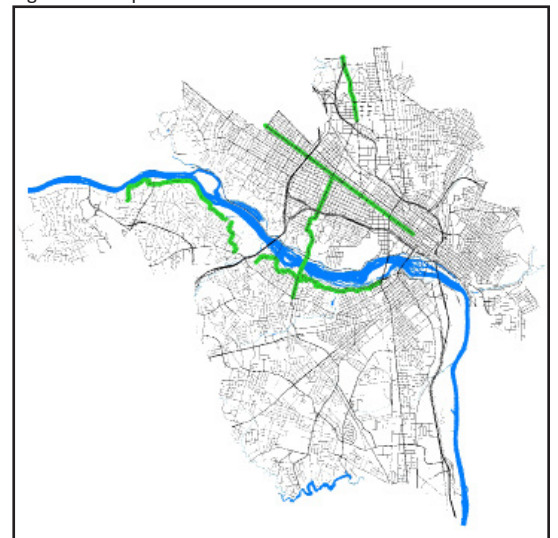
Urban Typologies

Figure 48: Ground level perspective of Historic Mixed-use Corridor

Primary Defining Characteristics:

- Strong sense of enclosure on the street
- Strong linear corridor with perpendicular interconnected streets
- Attached and detached buildings
- Primary no setbacks
- Sidewalks
- Generally 2-6 stories
- Mix of residential and commercial

These leading roads emerge out of downtown, following many of the primary trolley routes in the city. Today these corridors feature historic and new structures sitting side-by-side that containing retail, residential, office, and commercial uses. Most of the historic mixed-use corridors have ground floor commercial uses.

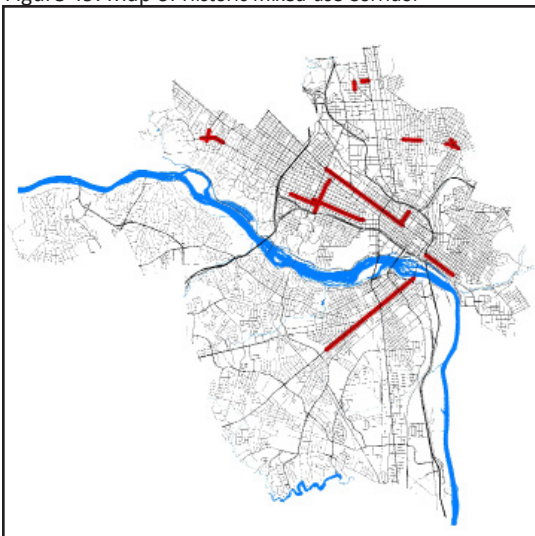Figure 49: Map of Historic Mixed-use Corridor

Figure 50: Birds-eye view of Historic Mixed-use Corridor

Figure 51: Ground level perspective of Suburban Commercial Corridor

Primary Defining Characteristics:

These corridors are the leading roads in the suburbs that feature post-war retail and commercial buildings, and huge signs. This is an auto-dominated landscape mostly unfriendly to pedestrians and bicyclists.

- Wide setbacks
- Little sense of enclosure on the street
- Large surface parking areas
- Large auto-oriented signage
- Generally 1-3 stories
- Detached

Figure 52: Birds-eye view of Suburban Commercial Corridor

Figure 53: Map of Suburban Commercial Corridor