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Amtrak Staples Mill Station: Strategic Vision Plan 2023

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AMTRAK STAPLES MILL STATION: STRATEGIC VISION PLAN 2023

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CLIENT: VIRGINIA PASSENGER RAIL AUTHORITY

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This report was submitted to fulfill the requirements for the Master of Urban and Regional Planning at the L. Douglas Wilder School of Government and Public Affairs in Virginia Commonwealth University.

In partnership with the Virginia Passenger Rail Authority (VPRA) to envision facility enhancements to a future station concept at Amtrak Staples Mill (RVR), for executive team at VPRA, including DJ Stadler Chief Executive Officer and Michael McLaughlin Chief Operating Officer of VPRA, for Jeremy Latimer, AICP - Director of Operations, and Haley Glynn - Marketing Manager.

With support from Dr. Niraj Verma, the capstone section coordinator

With guidance, from Prof. James C Smither, the faculty project sponsor

With support and insight from Jeremy Latimer, AICP – VPRA Director of Rail Services

With support and insight from Haley Glynn, Marketing Manger

The goal of this plan is to provide a practical foundation for design concepts for the station Amtrak Staples Mill (RVR) with an accompanying development project on the site, replacing the current parking lots to enhance a new station facility to create a desirable, livable, walkable, and enjoyable destination.

NOTE: This plan is part of an academic exercise. While this plan seeks to provide a vision for possible improvements, it is not an officially adopted, planned, or future project of any stakeholder mentioned in this document.

EXECUTIVE SUMMARY

Amtrak Staples Mill Station (RVR), located off Staples Mill Road in Henrico, Virginia, is currently the busiest intercity rail station in the Commonwealth of Virginia. This station is in desperate need of improvement. While the demand for Amtrak's intercity rail service continues to grow, the station remains a bottleneck in both ridership capacity, boarding times, and boarding/deboarding ease of access. The station is situated within the rapidly transforming Staples Mill Corridor, comprised of now low-density commercial and industrial uses, but is targeted for redevelopment and densification. The demand for rail travel is apparent, and the densification of Staples Mill Corridor is underway with developments like Libbie Mill. The context suggests the need to elevate the station. This plan calls for replacing the current station with a new facility. The design proposed here incorporates civic art as architecture and delivers multiple non-transportation primary uses in addition to rail-related enhancements. Drawing on examples of stations like Union Station Washington, D.C., the former Broad Street Station (Now the Science Museum of Virginia), and Main Street Station (Richmond), this plan will employ urban design, architectural concepts, and infrastructure improvements that promote the safety of rail travelers, transit access, multiuse development, fast and easy train boarding and serve as a community center.

This plan develops an aspirational vision for Amtrak Staples Mill Station such that it might be enhanced as a regional asset. Since its original construction, this station has lacked the amenities, facilities, and other public services typical for other significant projects. However, despite its current problems and ill-suited location, compared to the former Broad Street Station, the station and its immediate vicinity have nonetheless produced results. So much so that the Amtrak Staples Mill Station is the busiest in Virginia. And yet, user and rider feedback shows that much is needed on the station's grounds. This plan guides stakeholders connected to our region and the station to establish a strategic vision of the station and its vicinity. As such it elevates Amtrak Staples Mill Station to more than just a train station. Its position along RT 33, proximity to Richmond City proper, connections to bus transit, and potential for mixed-use redevelopment make the possibilities of the site almost endless.

Site visits were arranged to Amtrak Staples Mill, Union Station WAS, Main Street Station RVM, and the former Broad Street Station to observe the stations and to document and categorize the various useful features of each facility. These results were compared to what currently exists at Amtrak Staples Mill Station and informed design alternatives. The land use around these stations' vicinity was analyzed to provide examples of Transit-Oriented Development to inform future land uses at Amtrak Staples Mill Station. Station

facilities design alternatives were then developed using visual software. Specific railroad track and platform amenities were considered following the *Transforming Rail in Virginia (TRV)*[1] 40-year Capital Improvement Plan guidelines for long-term track and platform improvements. TRV specifically calls for at-level boarding platforms with the construction of new platforms on publicly owned tracks. This plan adds high-speed elements and future track improvement capability for flexible future passenger rail rolling stock. In summary, this plan takes both a micro-level and a macro-level view. At the micro-level, the plan guides the station facility, including specific features of rail infrastructure and multiuse such as retail, food, office, and public space. At the macro-level, the plan focuses on the land immediately surrounding the station and includes a high-level transit-oriented development strategy.

Implementation calls for a public-private partnership at the State and Local levels. To increase cooperation between state and local entities and to better pool resources, the plan recommends that an independent commission be established with equal representation of state agency representatives and residents of the Central Virginia region. Citizens should be selected based on population from within the Richmond Metro MSA with the proviso that there is at least one citizen member from each constituent county.

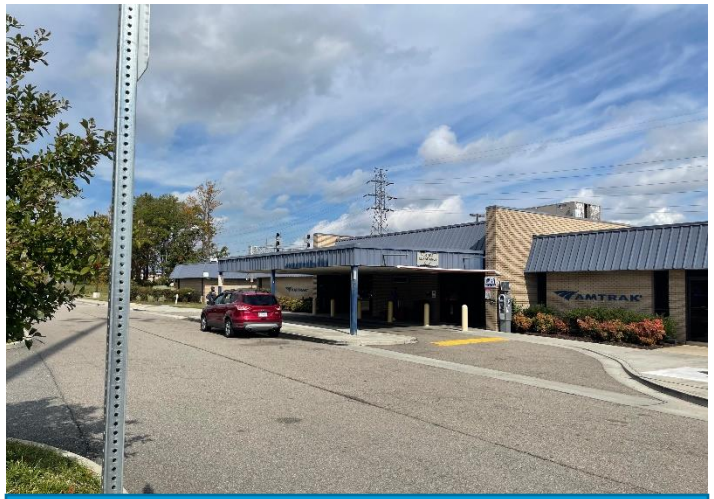
[1] VPRA and DRPT, "Transforming Rail in Virginia Factsheet."

INTRODUCTION

This proposal covers the theoretical basis for creating a new, comprehensive vision for the station's multiuse, modern, art and architectural design at Amtrak Staples Mill. The aim is to serve as an anchor for future visions of transit-oriented development on this site. This project aims to identify land use, station features, and cooperation strategies between stakeholders to build the framework for the practical future implementation of this plan.

Washington Union Station, D.C.

EXISTING CONDITIONS REPORT - SUMMARY



Amtrak Staples Mill Station Entrance

Northeast Regional 138 NB, Jul 12th

This report describes the built environment around the parcels that make up the Amtrak Station at Staples Mill. In so doing, it goes over the conditions of the natural environment and the built environment and how they relate to the needs of the site at Amtrak Staples Mill. The station's site sits centrally in Henrico County, Virginia, surrounded by several strip malls, parking lots, and fast-food drive-throughs. The natural environment in the immediate vicinity is flat with little change in elevation. The area is intermittently wooded with mature patches of forest. These natural features are intermixed with parking lots and sprawl. The dispersed development pattern runs throughout the commercial corridor, the central arterial road Staples Mill Road, state Route 33. Henrico County and PlanRVA describe this area as transitional pending Henrico County's reevaluation of the urban development along the corridor. The intensity of industry along RT 33 is greater than that of other locations in Richmond's West End. The intensity of commercial use along Route 33 is attributed to easy access to the national freight rail network.

This area is a intersection of various arterial roads, GRTC transit services, and long-distance and regional rail connections. The land uses around the site vary from residential to commercial to light industrial. There are also numerous vacancies in parcels adjacent to the station at Staples Mill. Several planning bodies have conducted studies and improved the site and surrounding area. Virginia Department of Transportation (VDOT) recently announced the near completion of a small areas plan anchored by Amtrak Staples Mill Station. Henrico County improved pedestrian amenities in the parking lot of the station. Finally, the region's Planning District Commission, PlanRVA, includes this area as a node in its concepts for expanding rapid transit along Route 33. Overall, the area has the potential to rise as a regional

anchor for social gathering, economic development, and enhancing culture, as well as serving as a rail gateway to the region.

HISTORICAL CONTEXT

A brief analysis of the history of the area surrounding the Amtrak Station at Staples Mill will provide a context for the plan. The station was constructed in 1975, the first station project by Amtrak in the Central Virginia region since the closing of Richmond Union Station at Broad St and Main St Station at Main St and 17th. At the time, Amtrak was on a mission to consolidate the assets that came into its possession after the nationalization of the passenger rail industry in 1971.

Main St Station, June 22, 1972

Broad Street Station, July 1967

The area's history is rich with freight rail economic development. The nearby neighborhood of Laurel, VA, is a designated historical district with ties to the Richmond Fredericksburg & Potomac Railroad (RF&P) as a depot stop for cargo. This area of Central Virginia is flat, has good access to rivers nearby, and was settled by Native Americans well before the first English colonists arrived at Jamestown in 1607. This area became more populated in the last 200 years, with pockets of density toward the south in Lakeside and north in Laurel.

OVERVIEW OF THE STUDY AREA

The area in question is similar to the soon to be published study area included in VDOT's 2022 Staples Mill Small Area Plan. This small area plan aims to analyze included land use, intended land use, vacant lots, and zoning to determine the best places for redevelopment. Ideally, the parcels that make up the station's parking lot and the station itself will be the extent of station redesign and possible future site redevelopment. This plan will provide a vision for a station redesign that will suit anticipated Transit-Oriented Development strategies along the RT 33 corridor.

Looking closely, the parcels that make up the station and its parking lot are separately located on the west side of the tracks, the station, and its parking lot total approximately 10.3 acres. Recent improvements on the site are limited to the parking lot pedestrian amenities and the expansion of parking spaces completed in 2018. The two parcel IDs 773-749-269 and 0772-750-9512, are the station and the parking lot parcels respectively.

The user/passenger features of the station include sidewalks, bike rack storage, self-service paid parking, a lobby with seating areas, public restrooms, ticket kiosks, staffed booths, a snack bar, and an outdoor patio. The boarding platform consists of a covered thruway that stops at the tracks, a track crossing, and multiple sheltered platforms. There are temporary parking spots, employee rest areas, temporary housing, and baggage utility equipment. It is important to note that aside from the parking lot pedestrian pathways and long-term parking lots, these are original furnishings from its original construction.

Silver Star 90, NB

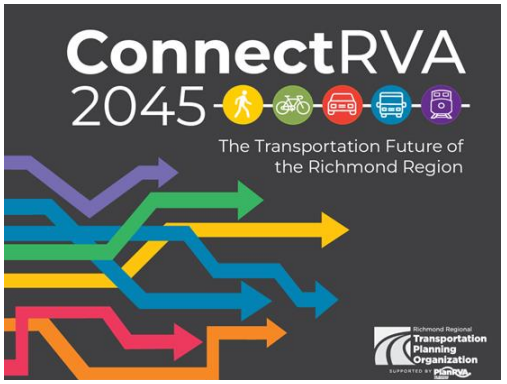
The ownership of the station and the parking lot are split between VPRA and Amtrak. Amtrak owns the land as well as the building on which the station sits. The adjacent parking lots not included in the station parcel are owned by VPRA. VPRA owns the passenger right-of-way on the tracks for passenger trains and station uses. CSX owns the actual tracks that the station uses. CSX and Amtrak operate regularly on the line.

RVR Site Photographs

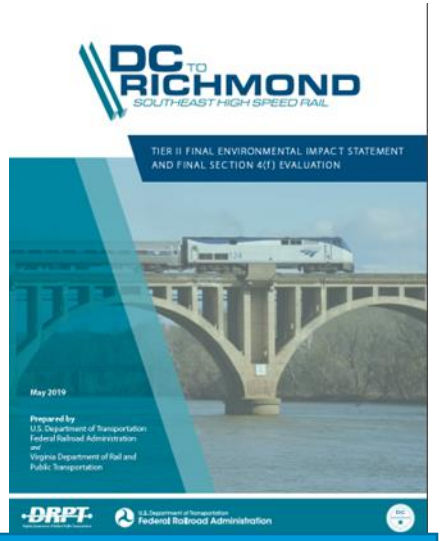
MAP REFERENCE OF STUDY AREA

LITERATURE REVIEW

Examining a solution for a planning "problem" is ambiguous, challenging, and sometimes overwhelming. What one planner considers a promising idea can often lead to unintended consequences if other perspectives are not considered. This can be a drawback of using the scientific method to solve social problems related to the built environment. The inspiration for critically evaluating our perspective when engaging in the scientific method was inspired by Edward J. Hacket,[2], who considered the paradoxes that can occur during research. Through an honest exploration of sources, the tensions emerge as defining areas of relevance. These are discourse elements and contributing factors to the framework for evaluating planning.



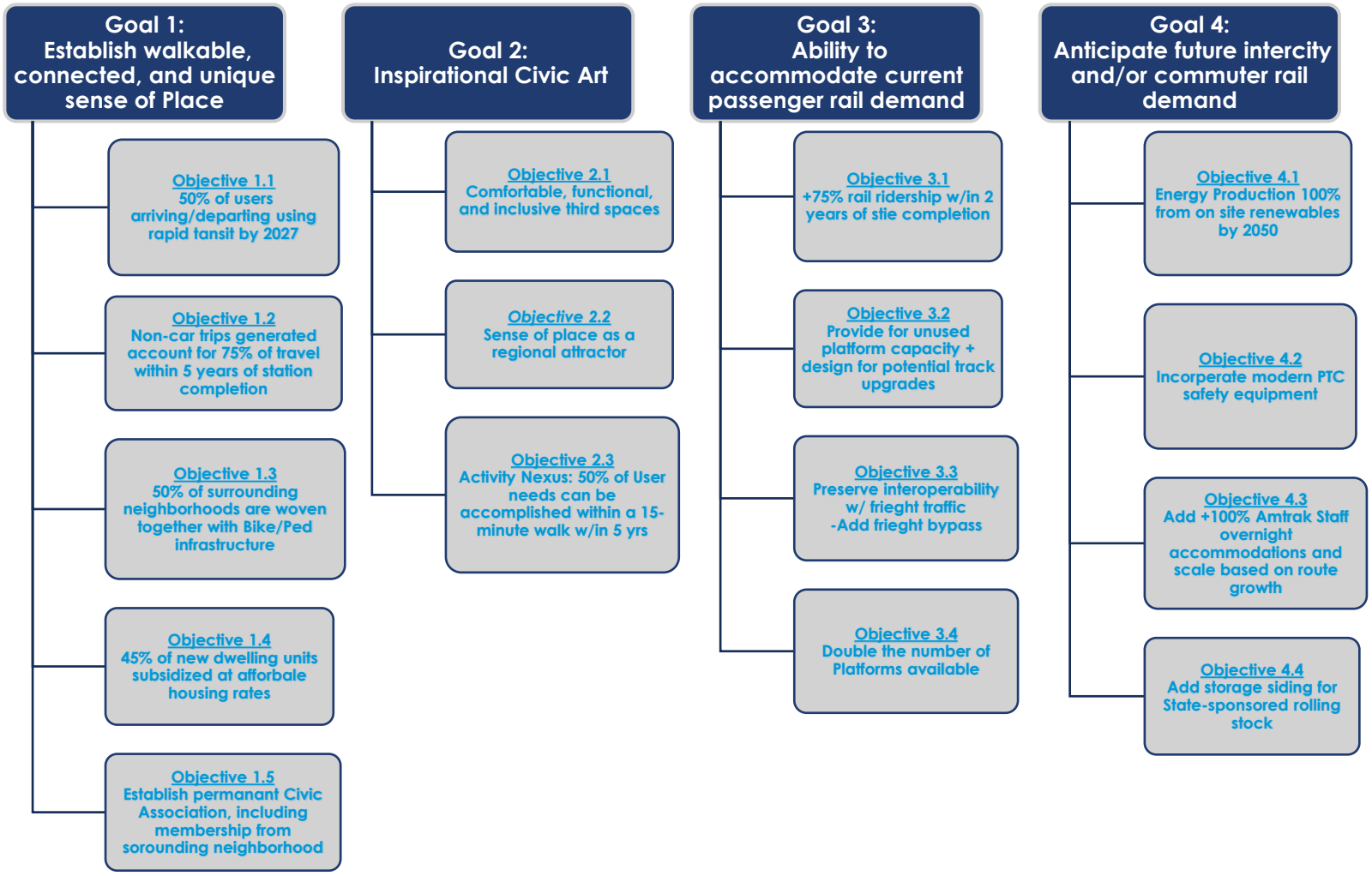
In evaluating literature for the plan to redesign the station at Amtrak Staples Mill and redevelop the site, the existing tensions are familiar to modern urban planning and economic development. Do we covet means or ends? How do we balance calculation with the ineffable? Looking at the existing conditions of Amtrak Staples Mill, located at 7519 Staples Mill Road in Henrico County, employing this theoretical framework in practice suggests the need to reimagine the station not only as a transitory space (a means) but as a destination (an end). Coupled with the perspective that this space has been neglected for much of its recent use, it is imperative to engage an entire group of stakeholders from local to state to federal to develop a vision that accomplishes multiple planning goals. The context is a national housing shortage, lack of access to transit, ADA compliance, infrastructure upgrade requirements for future passenger rail operations, and sustainable design that balances energy use and functionality. After evaluating sources in this redesign and redevelopment proposal of Amtrak Staples Mill, major themes or "tensions" as it pertains to this proposal are walkability, proximity, regionalism, accessibility, features of train stations, and comparison of social space and economic space, and their values.



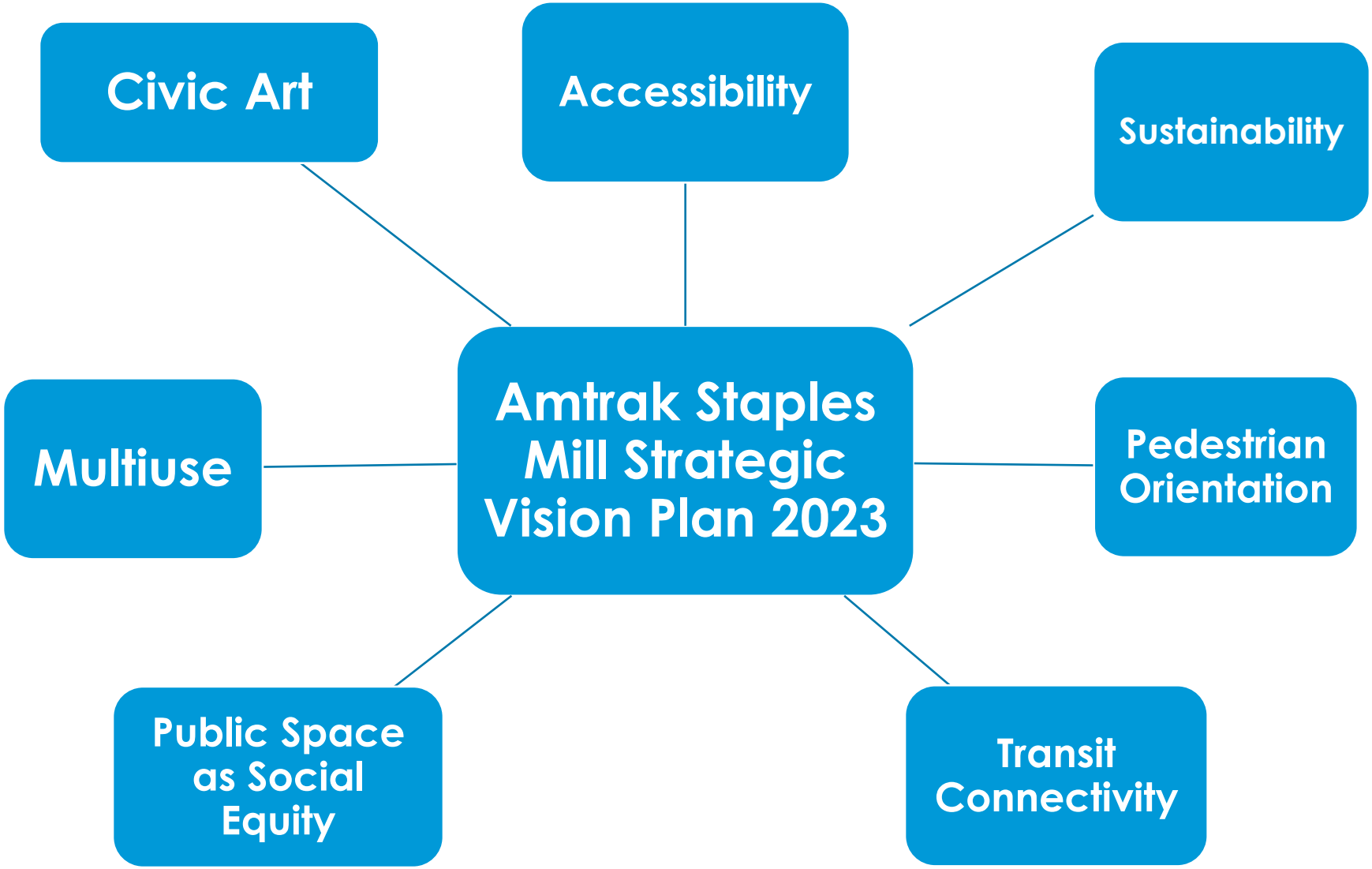
Highlighted: Existing plans guiding the Literature Review

[2] Edward J. Hackett, "Essential Tensions: Identity, Control, and Risk in Research," *Social Studies of Science* 35, no. 5 (2005): 787–826, http://www.jstor.org/stable/25046671.

STRATEGIC GOALS



PLAN VALUES

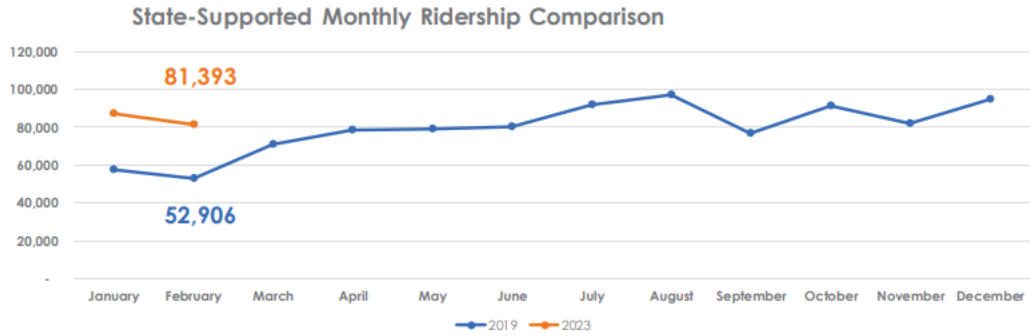

Civic Art
Accessibility
Sustainability
Multiuse
Amtrak Staples Mill Strategic Vision Plan 2023
Pedestrian Orientation
Public Space as Social Equity
Transit Connectivity

EXAMPLES OF EXISTING SUCCESS

RIDERSHIP STATS

The success of intercity rail investment on behalf of Amtrak by the Virginia Passenger Rail Authority (VPRA) can be quantified at Amtrak Staples Mil. VPRA, as part of its mission of improving passenger rail service in Virginia produces a monthly report that shows the number of passengers using Amtrak on each of Commonwealth's four service lines. This is an example of high-quality stewardship of public resources and allows for the demonstration of high demand. As of January 2023, Amtrak and VPRA reported the "*highest recorded January ridership for Virginia- Supported Service.*[3]" Included in the January 2023 Ridership Report published by VPRA is the listing of most popular stations, both On's and Off's, reporting that Amtrak Staples Mill (RVR) is the most popular station to either begin or end a rail journey. In addition, January 2023 saw a 52.2% increase in ridership since pre-pandemic 2019 reporting and with a year-over-year increase of 158.5%.

What these reports show is that demand for rail service in Virginia is capped at the supply of rail facilities. Replacement of Amtrak Staples Mill (RVR) with the elements described in this plan will increase the supply of intercity rail services, proving low risk for concerned stakeholders.



FOUNDATION FOR INTER-AGENCY SUCCESS

The most recent upgrade to facilities occurred in 2019, provided through collaboration with Henrico County, with retrofitting pedestrian pathways and accessibility necessities to sidewalks. Since then, VPRA has also purchased extra land adjacent to the existing parcel to expand long-term parking options for travelers. Success with elevating Amtrak Staples Mill Station relies on inter-agency cooperation, as VPRA and Henrico County demonstrated.

[3] Goodman, "Amtrak Virginia Monthly Ridership Reports."

STATION FEATURE MATRIX

EXISTING STATION EXAMPLES COMPARISON

The following table compares existing train stations as an example of desired features at Amtrak Staples Mill Station. Data were collected digitally and experientially: photography and videography.

	RVR[4]	RVM[5]	RGH[6]	NYP[7]	WAS[8]
At Level Boarding	✗	✗	✓	✓	✓
High Speed Track Capability	✗	✗	✗	✓	✓
Third Rail	✗	✗	✗	✓	✓
100% Covered Platforms	✗	✓	✓	✓	✓
Event Space	✗	✓	✓	✓	✓
Food Amenities	✓	✗	✓	✓	✓

[4] "Richmond, VA – Staples Mill Road Station (RVR) – Great American Stations."

[5] "Main Street Station - Richmond's Premier Event Venue."

[6] "Raleigh, NC – Union Station (RGH) – Great American Stations."

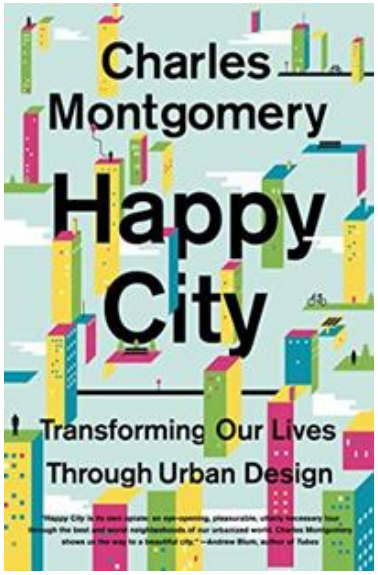
[7] Kimmelman, "Moynihan Train Hall."

[8] "Union Station."

Transit Connections					
Retail/Office Space					
Automobile Parking Amenities					

PEDESTRIAN ORIENTATION

One of the significant tensions in the discourse around train station design uncovered in this investigation is the ability to walk. Seen as a primary mode of mobility in train station facilities, the ability to walk underscores a primary function of space in train stations, space that is transitional[9]. Overall walkability as a feature is paramount in train station design. Looking at designs/architecture like the RF&P Terminal at Broad Street in Richmond, Virginia, we see that John Russel Pope employed large-scale place-based enhancements to a user's walking journey[10]. Drawing on traditionalism, Pope modeled the RFP Terminal, also known as the Richmond Union Station, after classical buildings such as the Pantheon in Rome and the Parthenon in Greece. By providing a grand entryway into an ample open space, Pope subconsciously instructed walking users they were welcomed into the space.



To acknowledge the importance of walkability is also to recognize the importance of connecting. This abstract concept may seem easy or weak, but it is the primary motivator for the spaces designed for train stations. The literature on walkability shows us the importance of creating walkways for pedestrians, in works like *The Smart Growth Manual, Happy City,* and *the Strongtown series.* Breaking down the features of the built environment for the user and their natural born primary mode of mobility and then designing spaces around that primary mode helps translate the value of people and their role in existing in space. For this investigation, it can be easy for this basic concept to be lost in the intra-modal connectivity nexus that train stations are.

[9] Feng Zhen, Xinyu Cao, and Jia Tang, "The Role of Access and Egress in Passenger Overall Satisfaction with High Speed Rail," *Transportation (Dordrecht)* 46, no. 6 (2018): 2137–50, https://doi.org/10.1007/s11116-018-9918-z.

[10] Steven. Bedford, *John Russell Pope : Architect of Empire*, *John Russell Pope : Architect of Empire* (New York: Rizzoli, 1998).

PROXIMITY

Transportation facilities discourse can often seem linear. The transitory nature of transit stops or longer-range facilities like train stations leads to the neglect of critical elements important for sustainability and related outcomes. For a successful transit stop success is typically measured in such metrics as fares for rides, total ridership, and the frequency of vehicles servicing the location. Although these are certainly important measures of performance, they leave out "measurements of proximity," by which these metrics are related to the destination[11]. For example, if a commuter railroad was to service Amtrak Staples Mill, and its route included a link to Main Street Station located at Main St and 17th St Richmond, VA, the data on uses will certainly be helpful. But the user would likely be more satisfied if their destination was within the business district of Richmond, Virginia.

Understanding measures of success more broadly and including perceptual input are crucial in promoting and creating a redesign of the space at Amtrak Staples Mill. Recently, Henrico County investigated using Transit Oriented Development Zoning in conjunction with VDOT's anticipated publishing of a Small Area plan anchored by the proposed redevelopment at Amtrak Staples Mill[12]. This shows that the idea of mixing uses proximate to transitional facilities like transit and rail stations are slowly being recognized. Proximity translates to access and increases use value through mixed-use development, economic output, and social space enhancements.

[11] Kailing Dong, "Analysis of Urban Rail Transit Station Planning Combining Simulated Annealing Algorithm," *Discrete Dynamics in Nature and Society* 2022 (2022): 1–8, https://doi.org/10.1155/2022/3941554.

[12] "Henrico - Staples Mill Road (Route 33) Small Area Plan - Projects | Virginia Department of Transportation," accessed August 11, 2022, https://www.virginiadot.org/projects/richmond/staples_mill_road_small_area_plan.asp.

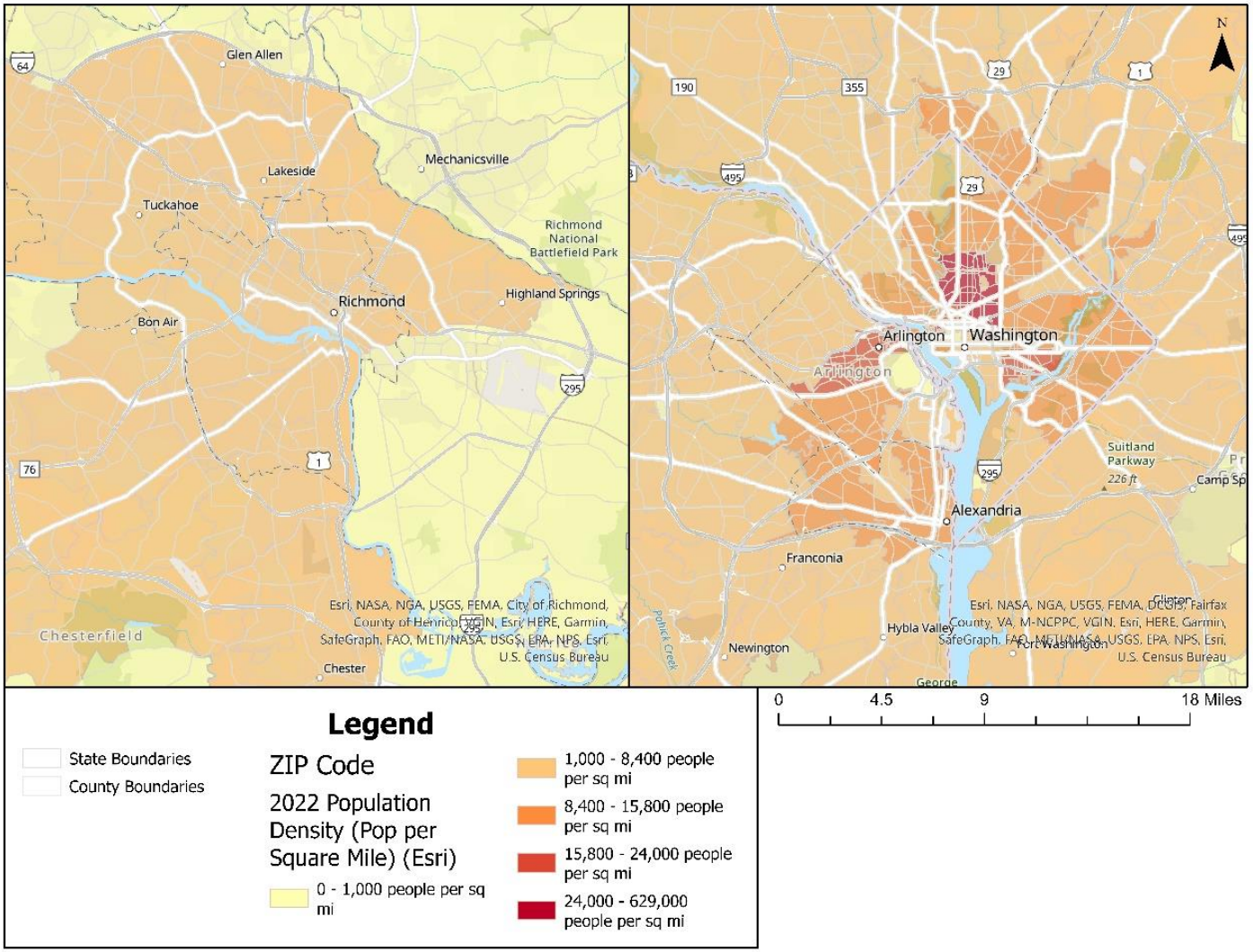
REGIONALISM

Investigating the literature surrounding spatial orientation and train station design shows that regionalism, the impact of dispersed development or sprawl, directly correlates with how train stations are thought of and developed. The concept of regionalism is very clearly defined in *the Regional City by Calthorpe and Fulton*. The regional city, operating through a patchwork of dispersed developmental patterns, is a network connected by often ill-equipped public transit networks and dominated by car culture. These networks transcend the physical built environment and apply to social networks, which are essential in mapping the intersections of community and the built environment.

Elements of regionalism permeate the discourse on rail transportation. In some ways, adequately funded, planned, and operated passenger rail operations coincide with the presence of regionalism. For example, lauded as an effective commuter rail system, NJ Transit operates its commuter rail division with multiple lines and multiple stops extending deep into its central and southern suburban enclaves. The Shore Line connects south to Brielle, NJ, and north to NYC. Consequently, many people can work in New York City and live in less dense suburbs in New Jersey[13]. In a sense, regional cities benefit or should benefit from the establishment of public transit systems. By contrast, Richmond, Virginia's regionalism handicaps its ability to move people around. The total population for the Richmond region is estimated to be about 1.7 million, and the region occupies a metropolitan area approximately the size of Washington, D.C.

[13] "System Maps | NJ TRANSIT | New Jersey Transit Corporation | New Jersey," accessed September 20, 2022, https://www.njtransit.com/accessibility/System-Map.

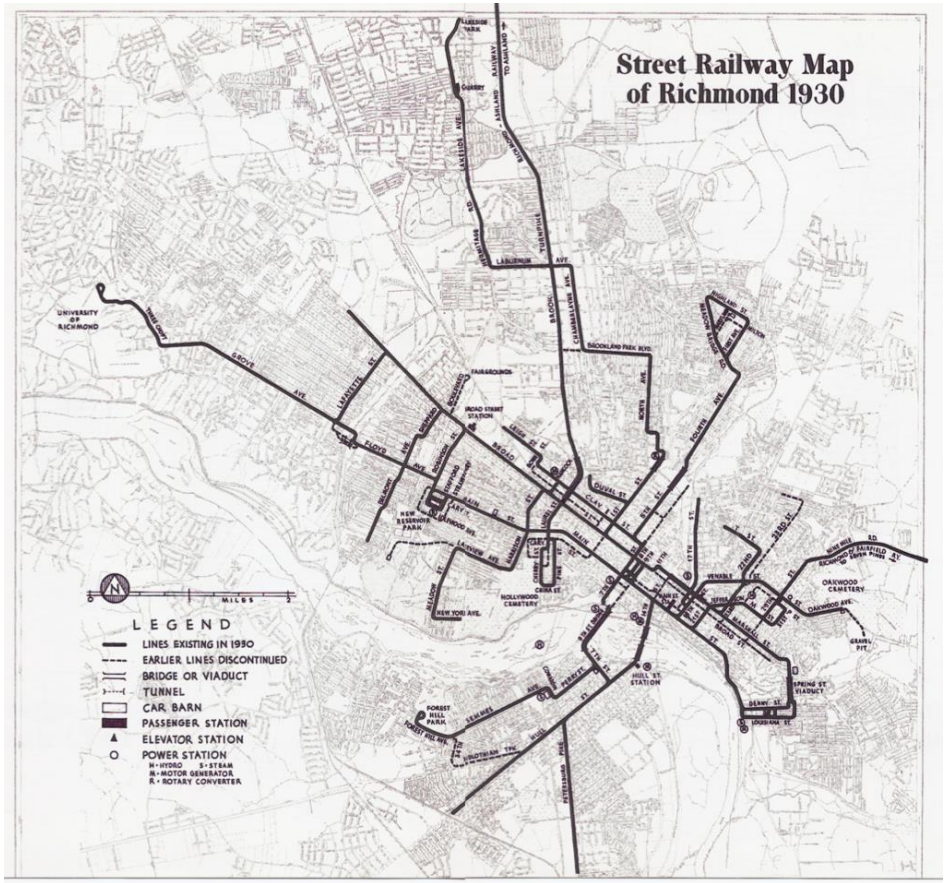
RVA TO DC POP DENSITY COMPARISON



Dispersal, regionalism, and transportation are not separate. Transportation correlates positively with land use. Land Use is also prominent in developing transportation systems for dispersed regional cities. Referring to *The Manual for Smart Growth*, coordinating how we zone land use is paramount to planning for transportation. The advent of previously mentioned TOD zoning, Transit Oriented Development, has been a tool to create density around transit stops to enhance commuters' ability to travel and to support other alternatives to commuting than using private automobiles. Thus, this positive correlation to the utilization of transit services in denser environments primes suburban areas for transit neglect, which is the paradox we find ourselves in Richmond, Virginia.[14]

Broad Street

Shockoe Bottom



Historical Examples of Transit Oriented Development in Richmond VA

FEATURES OF TRAIN STATIONS

CHART OF COMPARISON SPACES IN SOCIAL VALUE AND ECONOMIC VALUE

	Social Value	Economic Value
Boarding Platform	**Common gathering space, group anticipation, the value found in a shared function**	**Locus of service delivered, also services as facilitating new customers arriving/departing**
Entrance	**Potential to welcome users to the space, an opportunity for first impressions**	**Portal into controlled space, the potential for advertising**
Concourse	**Share space, opportunity to exist with other users in a non-exploitative way, services as a shared waiting space**	**Controlled area, space for economic activities like selling merchandise, tickets, food, or marketing**
Boarding Gates	Mimicking initial entrances invites users communally to begin their journey	Facilitates units of performance (riders) onto trains, controls capacity for transiting riders onto trains
Bathrooms	Promotes public health and sanitary space/hygiene, place of relief and human	Opportunity for users to relieve themselves, increases

	dignity, built-in privacy	morale and thus productivity
Sitting Areas	Users' purposes can vary, but each user's purpose is valid, place of relief and relaxation, comfort, roots individual users in the space	Amenity controlled by the facility can be oriented in a pro-marketing type of way, and comfort can be limited when necessary
Transit Stops	It provides a seamless connection to the excellent transportation services in the region and shows the value society places on being connected physically	Serves as a transition space for paying rides on adjacent transit services, can be controlled, also marketing
Parking Amenities	Accommodating different modes of transportation	Ability to scale to accommodate free and paying users. Many users are likely to pay longer term
Pedestrian Amenities: sidewalks, sidewalk covers, benches	Provides support for users who walk, showing the importance of multi-modal access	Design to be adjacent to commerce, like food and merchandise stalls. Can adjust access to prevent non-paying use
Ticket Kiosks	Increased access to last-minute users looking to book trips on the train	Portal to sell tickets, ability to scale to access more sales by users

Food Amenities	Satisfying hunger enhances human comfort, and meeting basic needs increases the utility of action[15]	Point of sale for food, provide multiple options for customer's tastes, sell alcohol, restaurant

[15] A. H Maslow, "A Theory of Human Motivation," *Psychological Review* 50, no. 4 (1943): 370–96, https://doi.org/10.1037/h0054346.

MULTIUSE

The crowning feature of any vibrant, vital, and versatile urban environment is the presence of multiuse buildings connected with varied purposes and with access to multi-modal transport. American planners are struggling to cope with nearly six decades of suburban dispersal and an uncoordinated transportation network strangling metropolitan areas. While the United States historically had a culture of strong mix-use development in its larger cities, the quaint small-town American Urbanism is inextricably linked with prosperity and freedom, which is missing from the built environment of Amtrak Staples Mill Station. This plan at Amtrak Staples Mill's primary goal is to provide the site with uniqueness, versatility, and destination quality through careful multiuse design.

While mixed-use development has existed in this county for centuries, its current form is unrecognizable. Barring the social stratification of the turn of the 20th century, urban development thrived during the United States' international industrial emergence, remarkable innovation, and increasing civil liberties. It can be argued that some of the most significant social progressions of the early 20th century, like women's suffrage, would not have occurred if a dispersed suburban form was in the majority. The proximate tight-knit social networks harbored an intangible quality of serendipity and innovation. [16]

This plan calls for a replacement of the current station. Referencing mixed-use concepts from urban planning theory, the replacement design for Amtrak Staples Mill Station will incorporate several primary uses in the facility. For example, there will be an emphasis on accessibility in the use of the station and in the design of boarding features. There will also be retail, dining, public space, public service space, rail infrastructure upgrades, an observation deck, and rentable event space.

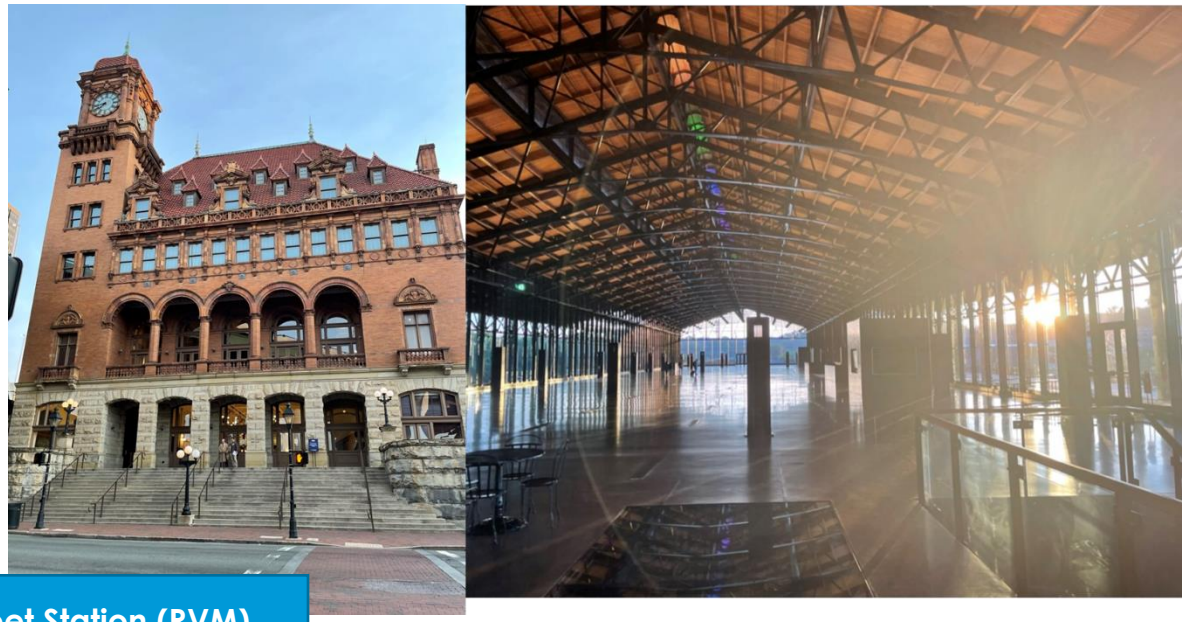
The theme of this design is to elevate the station to serve the functional needs of the traveling public and to elevate the station to more than one station. Amtrak Staples Mill's potential as a public space accomplishes many public plans, institutional plans, land use visions, and long-range intercity rail transportation goals.

[16] Jacobs, *The Death and Life of Great American Cities*.

MULTIUSE CONTINUED

TRANSIT-ORIENTED DEVELOPMENT

At Amtrak Staples Mill, this plan employs a purposeful orientation of station features and neighborhood-like mixed-use development. By mirroring the multi-use functions of the replacement station to an accompanying mixed-use development, we can elevate this site to capture the essence of why Richmond is a great place to live, work, and raise a family. In the words of Jane Jacobs in her urbanist manifesto, *Death and Life of Great American Cities*, "You can't rely on bringing people downtown; you have to put them there." Her meaning is aligned with the purpose of this plan. Amtrak Staples Mill Station will become a destination through purposeful mixed-use planning. Mixed-use development might involve placing public services intermixed with commercial and residential uses. Placing a variety of primary uses (residential, commercial, retail, institutional, social) in proximity of each other allows for the growth of a sense of communal place, thus, bringing vitality to the site. The station redesign would include differentiated uses that facilitate safe embark/disembark from trains onto level boarding platforms, track infrastructure capacity improvements that can charge future concepts of battery-powered locomotives as well as enable dual-mode diesel locomotives to limit carbon emissions, and food/rest amenities combined with a passive observation deck to promote tourism to the site. The site will feature the station redesign that replaces the current station facilities with residential, commercial, leisure, transit, tourist, and public space uses.



Main Street Station (RVM)

LAND USE/URBAN DESIGN

In this study area, the land use and its urban design are typical for an American suburb. There is by-right development of low-intensity residential with low-intensity commercial businesses. Large, spacious parking lots exist on the lots connected to Staples Mill Road. This area is auto centric in design, with little accommodation for other modes of transit, including bus access, pedestrian, and bike infrastructure. Staples Mill Road is six lanes, which go two ways at this location. Another arterial road intersects Staples Mill Road directly south of this site: Glenside Dr going west and Hillard Rd going east. To the north, Staples Mill Rd also intersects with E Parham Rd, another major arterial automobile road. The dispersed nature of the development nearby is consistent with suburban development patterns, placing development next to arterial roads with extensive parking and lines of commercial frontage, giving the "strip mall" feel. This phenomenon has been termed "grey space" by Calthorpe and Fulton in the Regional City.[17] Beyond the engineering of the roads, including signal lights and sidewalks where applicable, there is not much design consideration for the areas surrounding Amtrak Staples Mill. Most of the economic development in this area is developer-driven but still related to the Henrico County comprehensive plan, which shows the nodal development patterns along this part of Staples Mill Rd.

Following similar building and urban development typologies from Richmond, like Willow Lawn, West Broad Village, The Fan, Broad Street at the Science Museum, and Carytown, this plan aims to strengthen this area's sense of place using the goals set out prior. Through design, this plan aims to achieve gentle densification of the station's surrounding area and mimic townhome, rowhome, apartment, and condominium home styles that already exist in Richmond, Va. Using pedestrian, bike, and transit connections along with increasing the number of parking using above and below ground parking decks, this area will weave the built environment together, allowing for safe, interesting, purposeful, and enjoyable walking and biking.[18]

[17] Calthorpe and Fulton, *The Regional City : Planning for the End of Sprawl*.

[18] Speck, "Jeff Speck."

OVERVIEW OF EXISTING URBAN DESIGN – STAPLES MILL ROAD RT 33 CORRIDOR

EXISTING DEVELOPMENT TYPOLOGIES

Figure: Looking northwest on the sidewalk along Staples Mill Road.

Summary: Suburban style dispersed development pattern, difficult to cross streets, minimal mixing of uses in meaningful proximity

TYPOLOGIES CONTINUED 1

LIBBIE MILL MIXED USE DEVELOPMENT

- Building types vary between multifamily apartments, single-family condominiums, and single-family attached rowhomes.
- Commercial mixed with residential, connected with grid street layout.
- Anchored by public service, Libbie Mill Library

TYPOLOGIES CONTINUED 2

LIBBIE MILL LIBRARY + PUBLIC PLAZA

Public Space as an Amenity

Library use anchors the neighborhood with varied primary uses (Residential, Commercial, Leisure, Institutional)

Grid layout allows for safe, interesting, purposeful, and enjoyable walking to nearby uses[19]

[19] Speck.

Photos Of Amtrak Staples Mill Station 1

[20]

[21]

PHOTO SUMMARY LEFT TO RIGHT:

Left, a Northeast Regional train stops to load and unload passengers at Amtrak Staples Mill Station. Facing north, passengers' journey in front of the train to then cross over the tracks to the station. On the right of this photo are freight mainline tracks for the RF&P Subdivision operated by CSX Transportation.

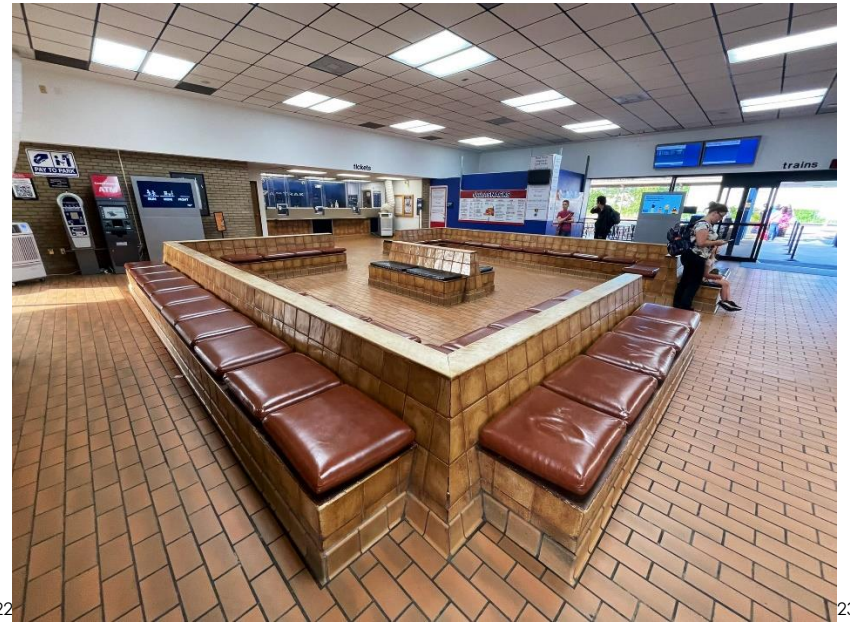
Right, shown here is a view of the front of Amtrak Staples Mill Station. Here the drop off loop is in use.

[20] Wyatt Gordon [@yitgordon], "Yes, This Is the Busiest Train Station in Virginia—a State with Roughly the Same Population and Economic Heft as Austria but Far Worse Infrastructure. The Only Bus Downtown Comes Once an Hour Weekdays 6am to 7pm. Https://T.Co/NwM6ZMyFzu."

[21] Wyatt Gordon [@yitgordon].

Photos Of Amtrak Staples Mill Station 2

[22]



[23]

PHOTO SUMMARY LEFT TO RIGHT:

Left entrance to the central station facility from the crosswalk connecting to the station's boarding platforms. In the foreground, you can see baggage vehicles on standby, Amtrak staff staffing access to the platform + monitoring embarking/disembarking. There is a small viewing patio to the right.

Right, main station facility waiting area. Seating is provided. Both staffed and unmanned ticket sales, snacks, and bathrooms are accessible in this space. There is seating for approximately 75 people.

[22] Wyatt Gordon [@yitgordon].

[23] Wyatt Gordon [@yitgordon].

PHOTOS OF AMTRAK STAPLES MILL STATION 3

PHOTO SUMMARY LEFT TO RIGHT:

Left, Looking northwest from the current station satellite parking lots. In the foreground is the station sign. In the background GRTC Bus serving Route 18, connecting Amtrak Staples Mill Station to the Henrico County Government Center as well as other stops on Staples Mill Road.

Right: View looking south from crosswalk disembarking train number 184 Northbound Norfolk to New York City. Embarking /disembarking platform is in the left of this photo and is accessible by crosswalk from the station. There is an auxiliary platform located to the Right, including track siding for temporary storage of rolling stock.

PHOTOS OF AMTRAK STAPLES MILL STATION 4

PHOTO SUMMARY LEFT TO RIGHT:

Left: The main station facility entrance for Amtrak Staples Mill Station. With ADA accessible curb cutouts, along with a covered drop off loop. There is a pay-to-park machine located near the entrance to the station.

Right: The main road leading into the site, connected to the drop off loop in front of the Station entrance. This road also connects the different surface parking lots. Total parking capacity is 589 stops.[24]

[24] "Staples Mill Amtrak Station Debuts New Parking Expansion."

TRANSPORTATION

As previously explained, the automobile is intentionally designed to be this area's primary mode of transportation. Some surrounding areas include pedestrian features that their respective developers included. However, there needs to be more coordination of pedestrian infrastructure. Despite this, during a site visit, I observed at least four users of the sidewalks on the opposite side of Staples Mill Road from the station. There are also local routes of GRTC service to the station itself. While rare, an estimated hour to an hour and a half headway between buses still provides an alternative to using cars to access the station. Staples Mill Rd is six lanes wide and would be a prime candidate for a BRT system connecting the station to communities up and down Staples Mill Rd.

Along with pedestrian, bus, and road infrastructure, rail connections are facilitated by the station at Staples Mill. The station connects at least fifteen trains northbound and southbound per day, connecting to the Northeast Corridor services such as the *Northeast Regional* and *Acela*. Additionally, there are connections south with the *Carolinian*, the *Piedmonter*, the *Cardinal*, and the *Silver Star*. This station is the highest-trafficked station in Virginia[25], making it a prime opportunity for improvement. This will raise the station's capacity to accommodate more passengers and inspire future improvements to enhance the rail equipment for state-sponsored Amtrak routes in Virginia. There is no light rail, streetcar, or trolley connection in this area. Aviation is not considered in this analysis.

[25] Times-Dispatch, "Staples Mill Amtrak Station — Busiest in the South — to Double Number of Parking Spaces."

DEMOGRAPHICS

SUMMARY

The demographics of this study are limited. This site's community comprises Amtrak employees and passengers using the station. These users are transient, meaning their use of the station does not mean they are from the immediate area the station occupies. According to the Census, two residences are in an adjacent census block, approximately 300 yards northwest of the station. This area consists primarily of commercial and industrial uses but does contain some residential development. Most of the study area, including the station, lies in a single census tract. This tract includes an estimated total population of 4,624 people, 46% of which are male and 54% of which are female. The largest age group is the 25 to 34-year-old at 20.5%, followed by the 45 to 54-year-old population at 17%. 79% of the population in this census tract is above the age of 21. This census tract is also reported as 61.8% white and 25.6% Black. 4.1% of the population in this census tract is Asian. The Native American population in this census tract reports at 2.2% of the population. The Latino population reports at 5.4% of the total population of this census tract, with Mexican and Puerto Rican making up the top two sub-groups within the Latino population. (Appendix A)

METHODOLOGY

This plan seeks to evaluate and collect the experience of features of successful multi-use stations in the United States. The visits to these stations, connecting with professionals, and observing station operations, will help to arrive at design concepts that provide the foundation of the future vision of Amtrak Staples Mill Station.

Examples of sites to visit:

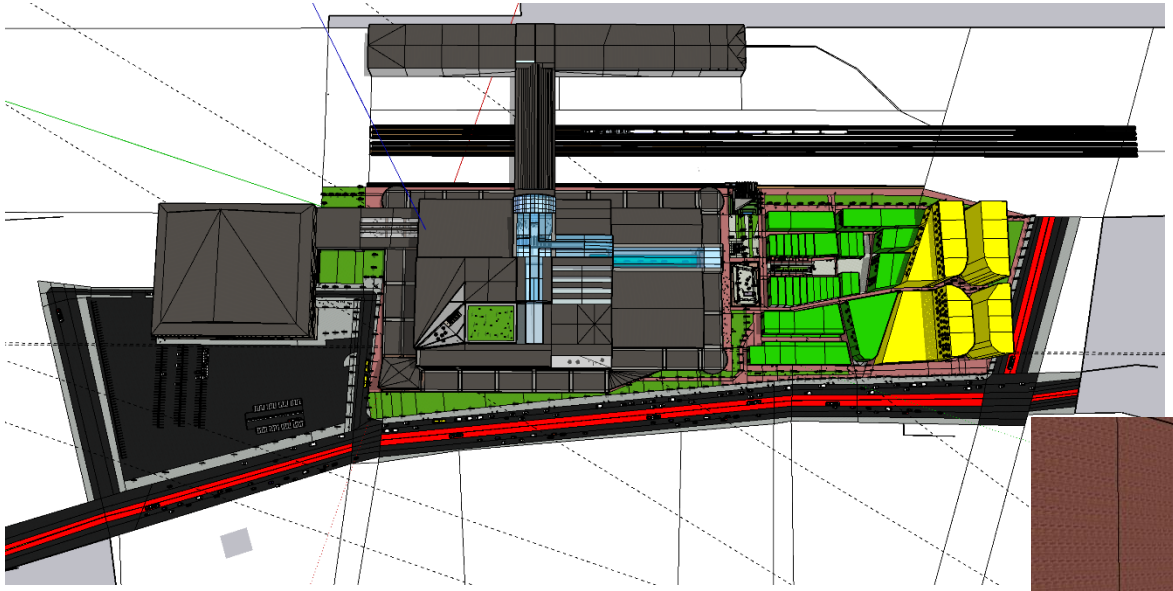
i. **Washington Union Station**
ii. **New York Penn Station, Moynihan Train Hall**
iii. **Main Street Station, Richmond**

Critical to the effectiveness of this plan is the establishment of public-private partnerships that help to realize a shared vision. Through interviews with Henrico County officials, regional, and some state leaders, this plan aims to demonstrate the community's need for an enhanced multi-use train station to be developed into a regional community asset. Implementation will require regional cooperation and compromise for Amtrak Staples Mill Station to be improved through a station redesign. This plan acknowledges that even after physical implementation, a long-term governance model will be needed to preserve public space, ensure quality intercity rail transportation access, and achieve this plan's other primary use goals.

Finally, this plan requires the coordination of various local, regional, state, and federal stakeholders and it will seek to build a coalition of public stakeholders to lay the foundation for future cooperation. Ensuring continuity and longevity with help a unified vision of Amtrak Staples Mill. This unified vision is the best way to produce this plan’s site goals.

RECOMMENDATIONS

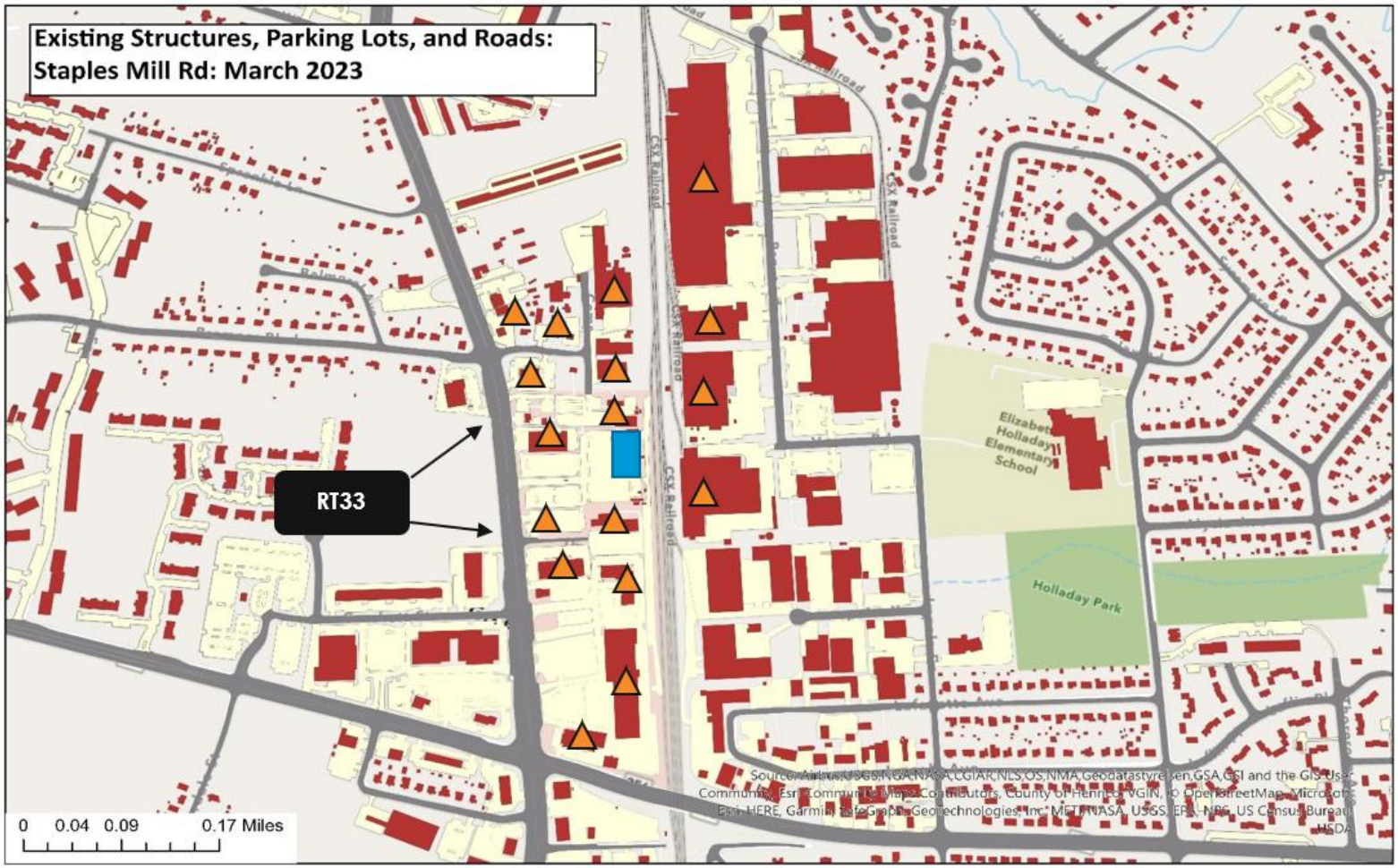
THIS PLAN CALLS FOR TWO TIERS OF RECOMMENDATIONS:



MACRO-VIEW

MICRO-VIEW

LAND-USE OPPORTUNITY



MICRO-LEVEL VIEW

MICRO-LEVEL FEATURES

The plan focuses on the station proper and includes track, parking, and site-specific features of station replacement. These features are:

Station Features

- **At-Level Boarding Platforms**
- **High-Speed Track**
- **Capacity for future infrastructure considerations**
- **Comfortable Overnight Amtrak Staff Accommodations**
- **Ample Concourse Space w/ Seating**
- **Leasable Office Space**
- **Food Hall**
- **Convenience Retail**
- **Observation Deck**
- **Event Space**
- **Rooftop Restaurant/Bar**
- **Child-based Education Features**
- **Public Art/Murals/Commemoration of History and Previous Structure**
- **Integration OF Rapid Transit Stop: BRT (PULSE) & Local Routes**

PHOTOS OF EXAMPLES TO INSPIRE MICRO-LEVEL FEATURES

AT LEVEL PLATFORM EXAMPLE

-NJT METROPARK STATION

ISELIN, NEW JERSEY

HIGH-SPEED TRACK EXAMPLE

-NJT METROPARK STATION, ISELIN, NEW JERSEY

PICTURED: ACELA #2010 NB

EXAMPLES OF FUTURE IMPROVEMENT CAPACITY – THIRD RAIL ELECTRIFICATION

-SILVER LINE DC METRO, TAKEN BY ALPHA 3 CONCEPTS

CURRENT STAFF OVERNIGHT ACCOMMODATIONS (INADEQUATE)

-AMTRAK STAPLES MILL STATION, RICHMOND VIRGINIA

EXAMPLE OF EXISTING OVERNIGHT AMTRAK EMPLOYEE ACCOMMODATIONS

-PHOENIX PARK HOTEL NEAR UNION STATION WASHINGTON

-PHOTO BY PHONEIX PARK HOTEL

LARGE SPACIOUS CONCOURSE EXAMPLES

-UNION STATION WASHINGTON

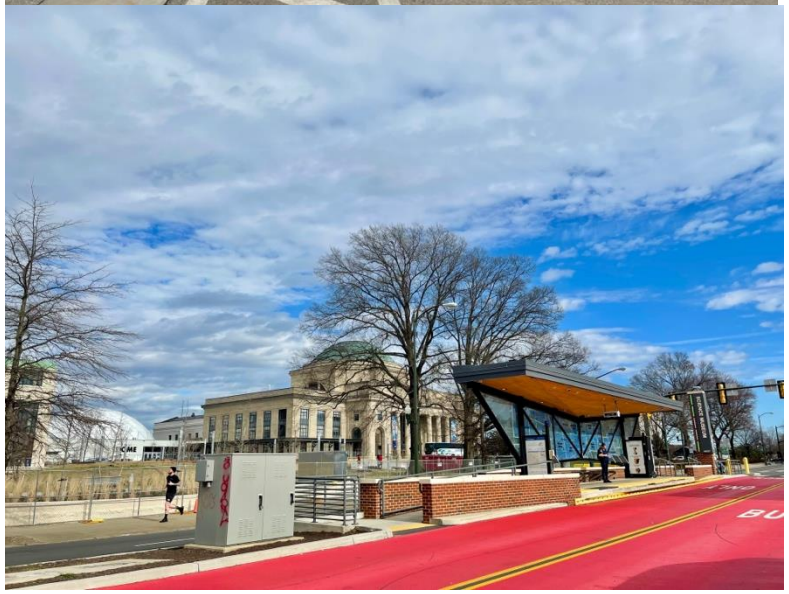
WASHINGTON D.C.

-MAIN STREET STATION CONCOURSE

RICHMOND VIRGINIA

CURRENT TRANSIT STOPS

- LOCAL ROUTE 18 HENRICO GOVERNMENT CENTER



RECOMMEND RAPID TRANSIT STOP

- GRTC PULSE, SCIENCE MUSEUM STOP

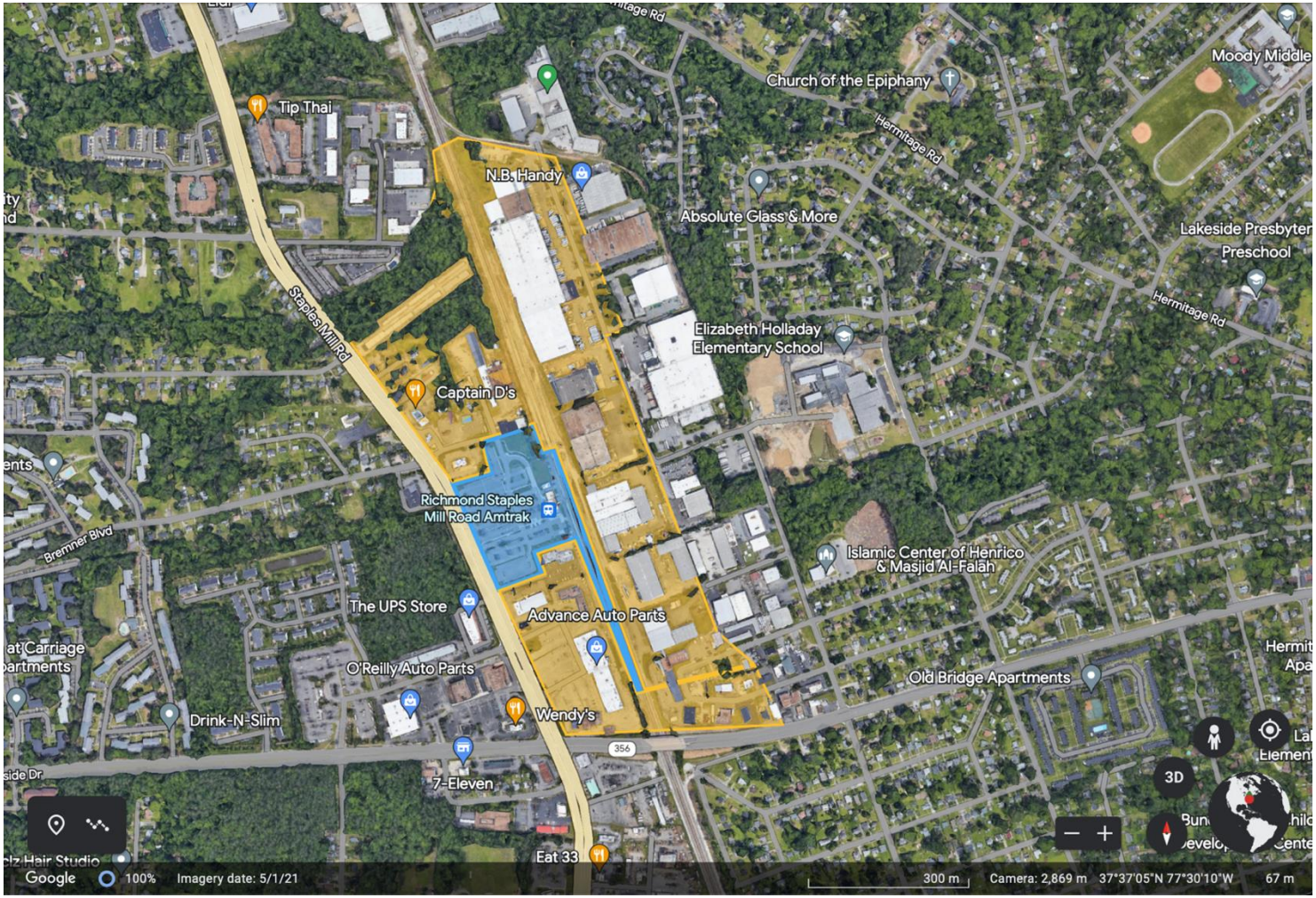
MACRO-LEVEL VIEW

Next, the second set of recommendations comes as long-term land use suggestions for land adjacent to the recommended station replacement. We know that a mixture of primary uses in a given space enhances the vitality of a given space. These land use recommendations are designed to enhance the features and concepts discussed within the Micro-Level View.

MACRO-LEVEL VIEW: ADJACENT STRATEGIC LAND USE RECOMMENDATIONS

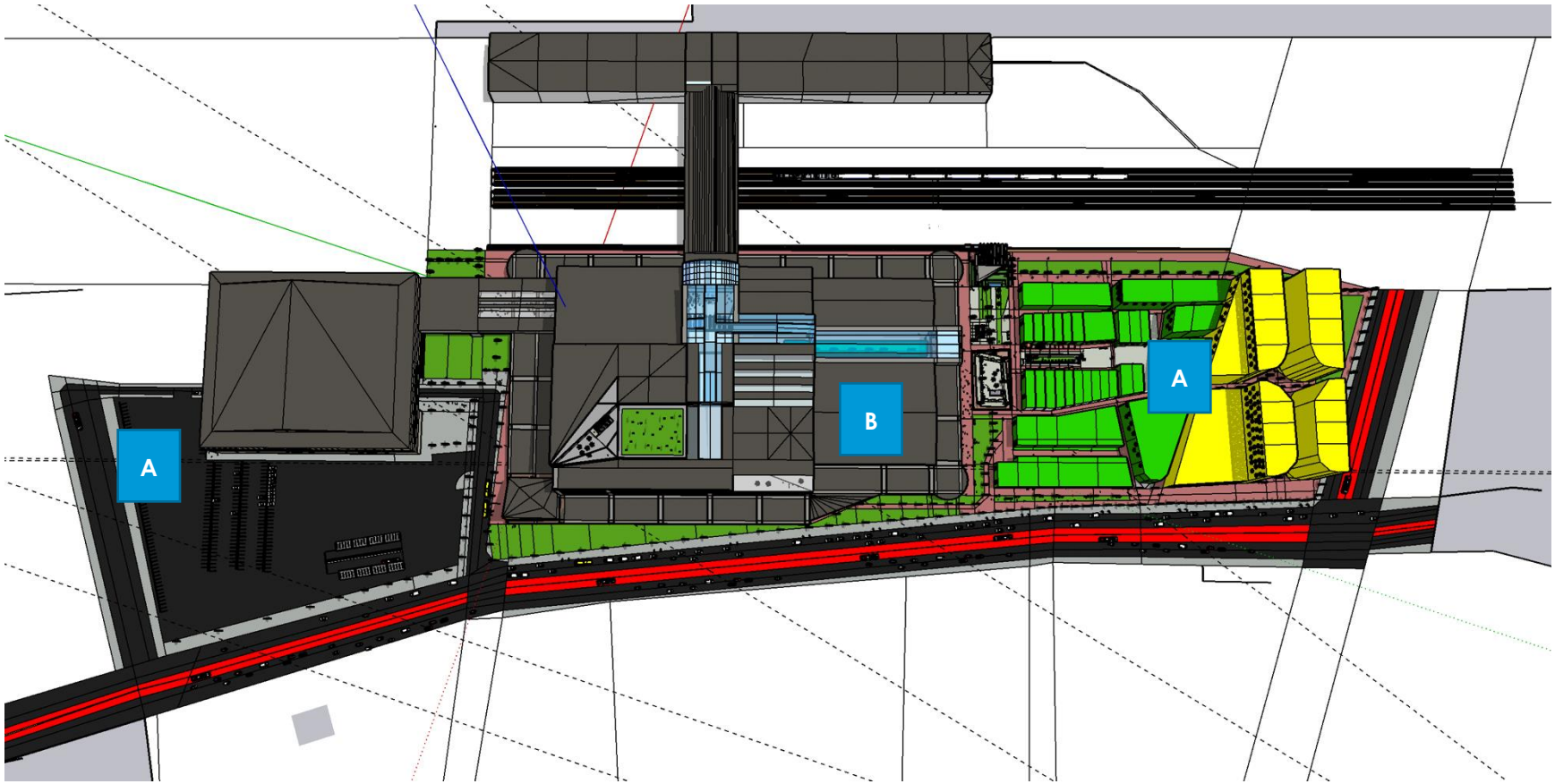
- **Gentle Density**
    - **Increased Density Residental: Mix of Apartments and Attached Single Family Rowhomes.**
    - **INTEGRATED Commercial AND Residential**
- **Mixed Use Throughout**
- **Pedestrian Avenues: Connected to nearby Neighborhoods/Job Centers**
- **Protected Bike Infrastructure**
- **“Town Square” -Dedicated Public Space**
- **concentrated Covered/Disguised Parking Amenities: Build up and underground to preserve useable space near the site.**
- **Using Pedestrian Avenues and AutomOBile Roads in a Grid Pattern**

MAP EXTENT OF STRATEGIC VISION



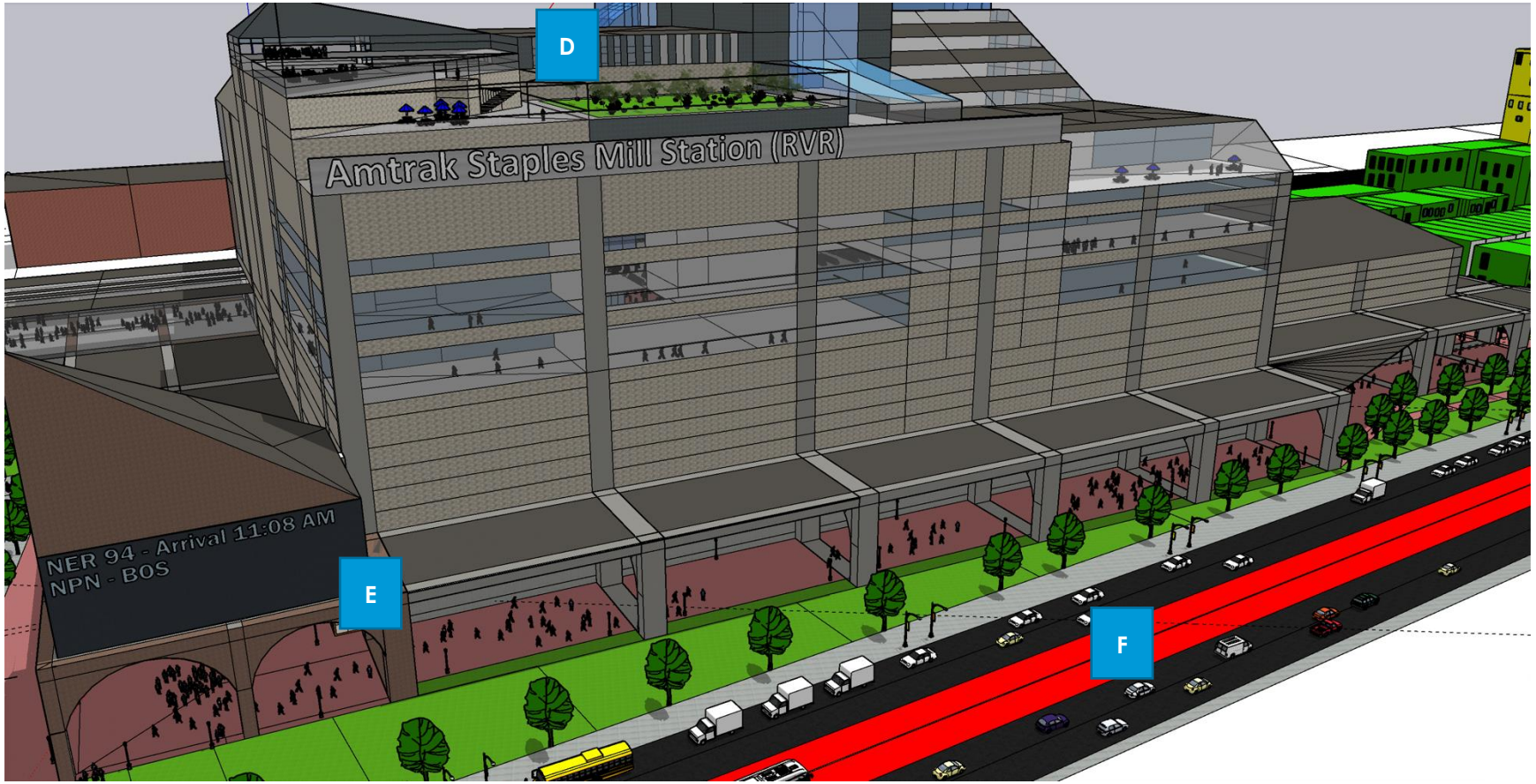
- **Blue – Current Footprint of Amtrak Staples Mill**
- **Yellow – Land recommended for Station Replacement + Transit-Oriented Development**

STATION REDESIGN AND TOD CONCEPT



STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

A. Transit + regional Parking Center
B. Main Station Facility (Food Hall + Office Space + Maintenance Facilities + Station Admin)
C. Commercial Mixed-Use Neighborhood

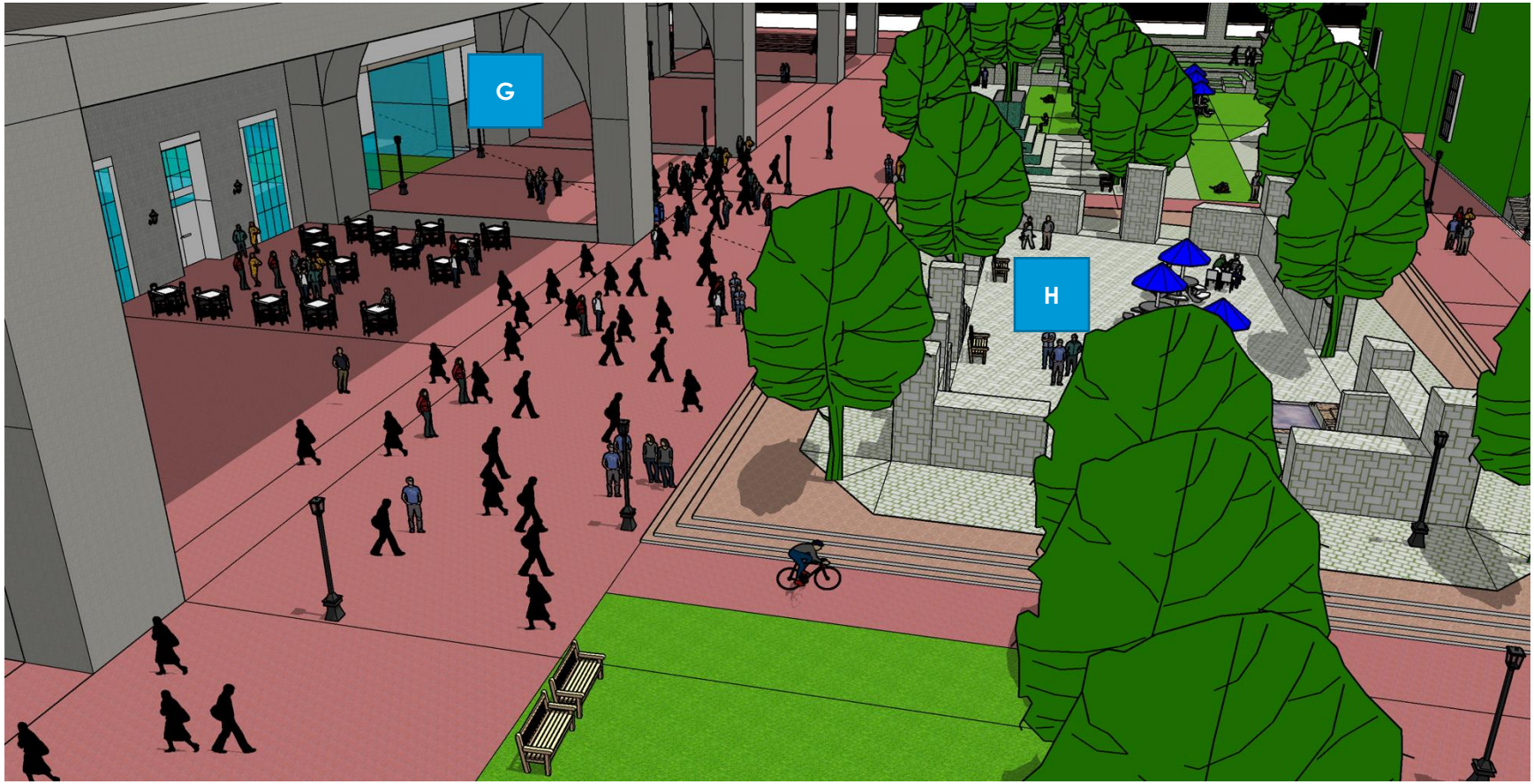


STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

D. Rooftop Garden + Restaurant

E. West Entrance

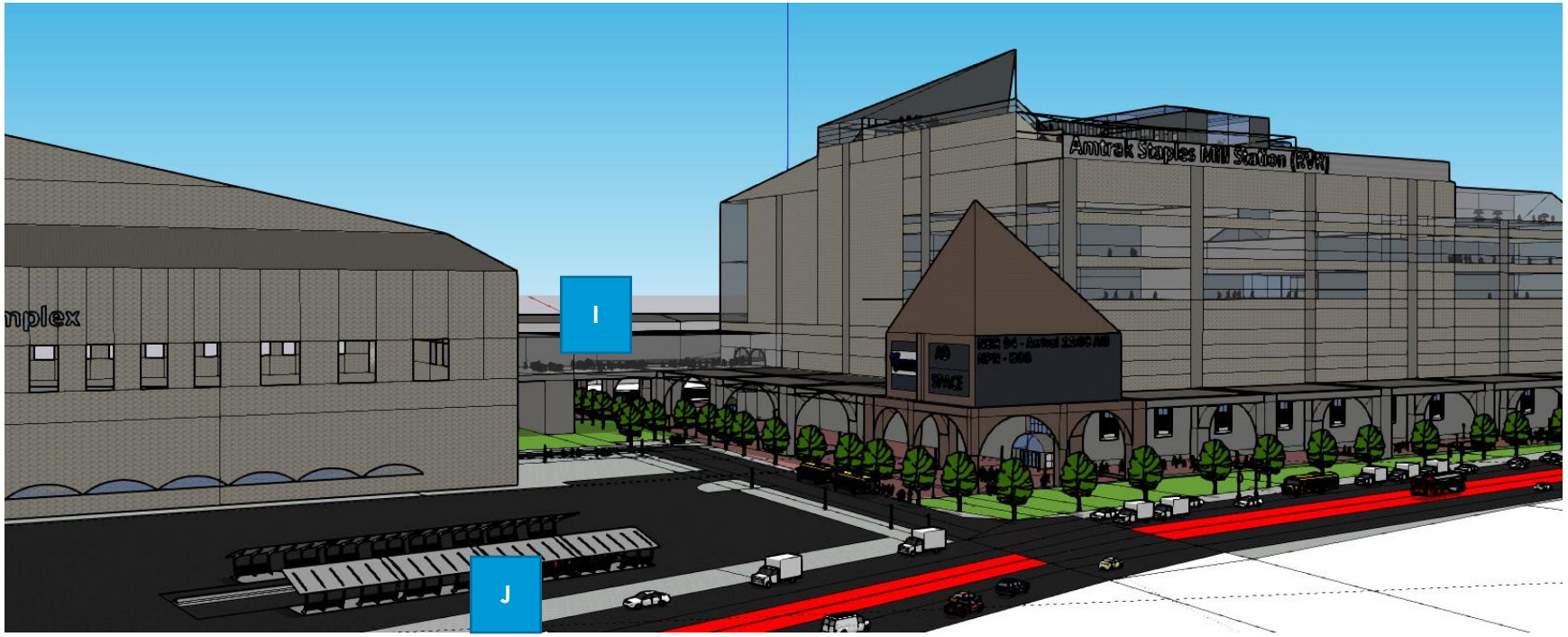
F. RT 33 Bus Rapid Transit Connection



STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

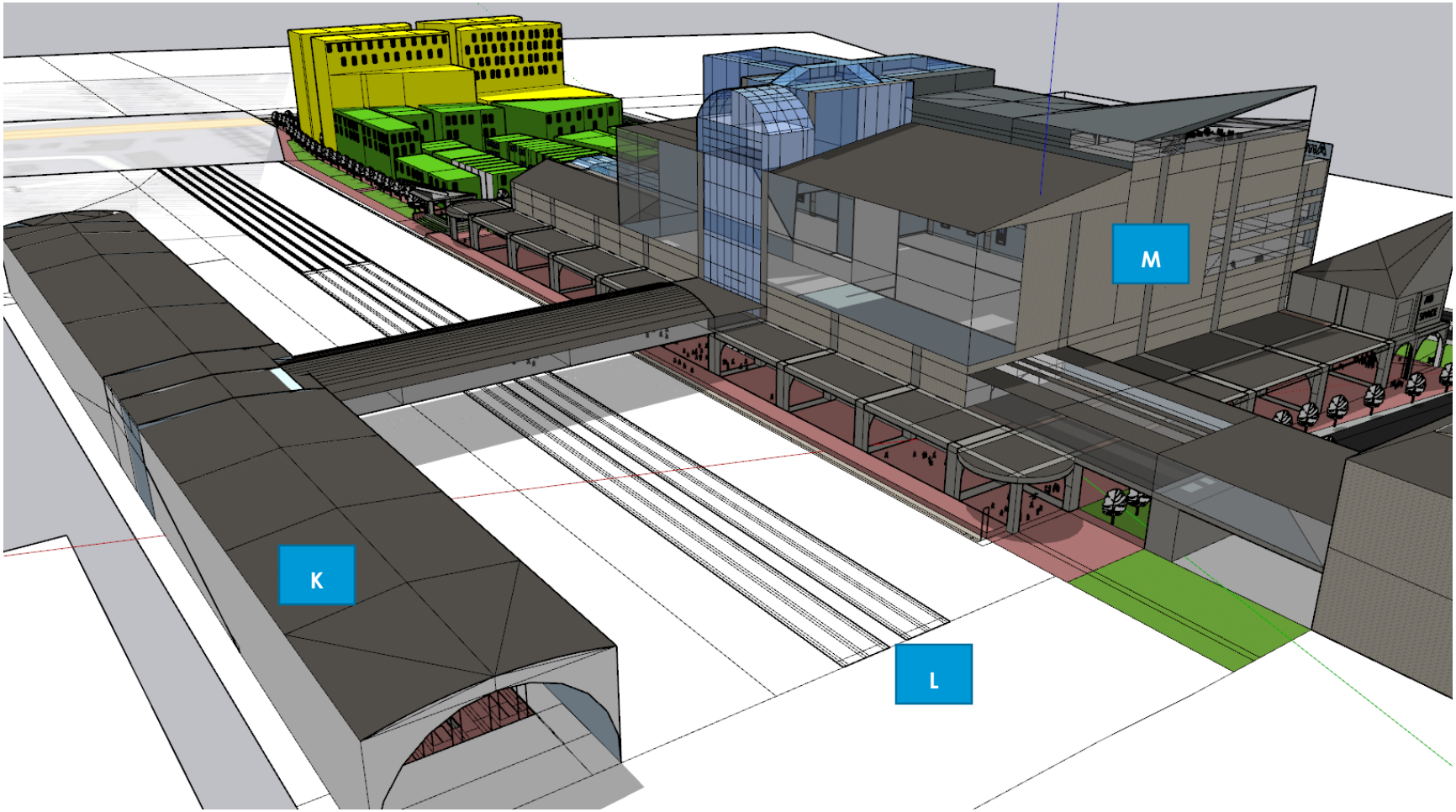
G. Southern Entrance

H. Urban Plaza Concept



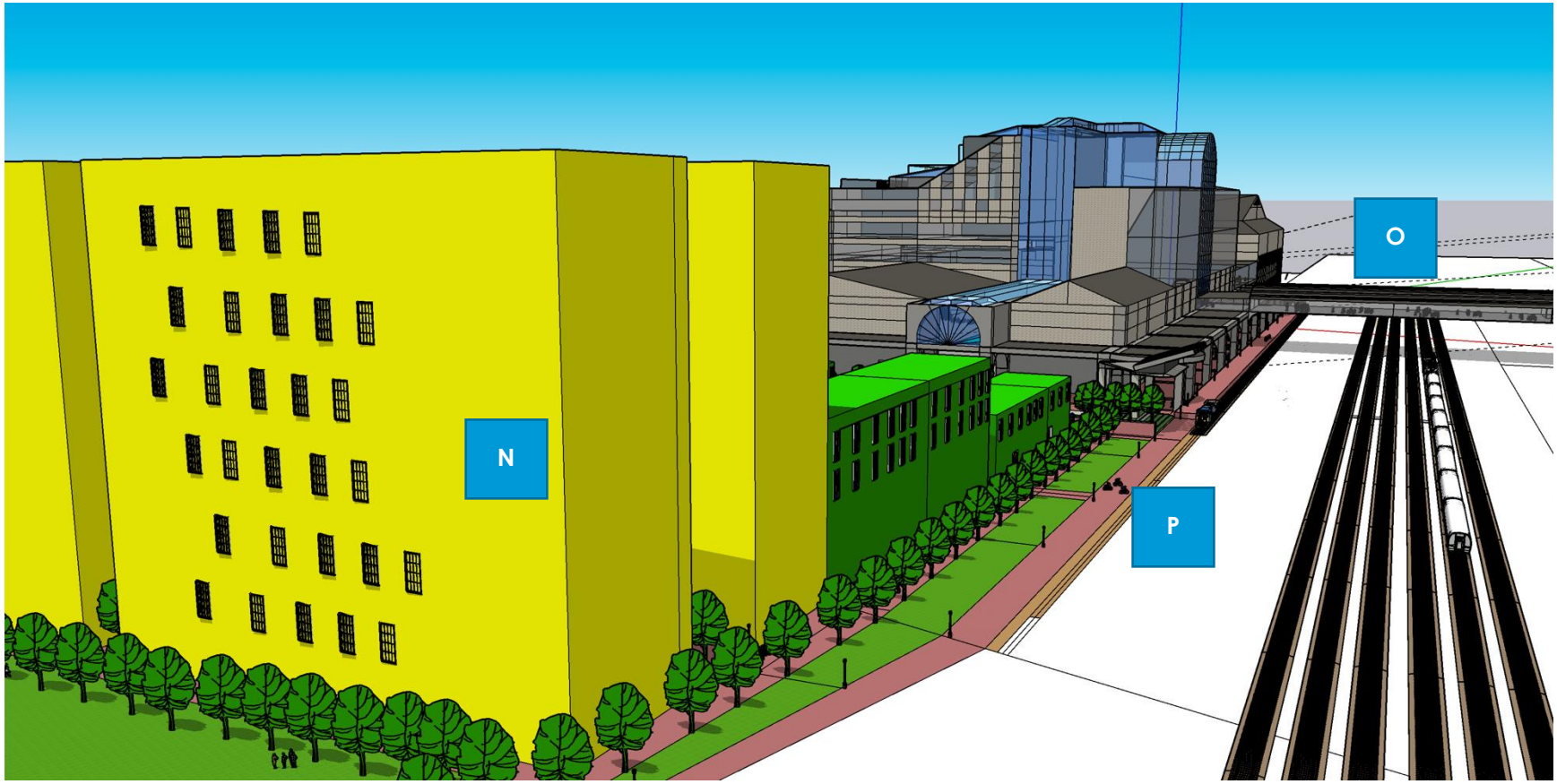
STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

I. **Pedestrian Bridge connecting Parking Complex to the main Station Facility and Main Concourse**
J. **Bus Transfer Station**



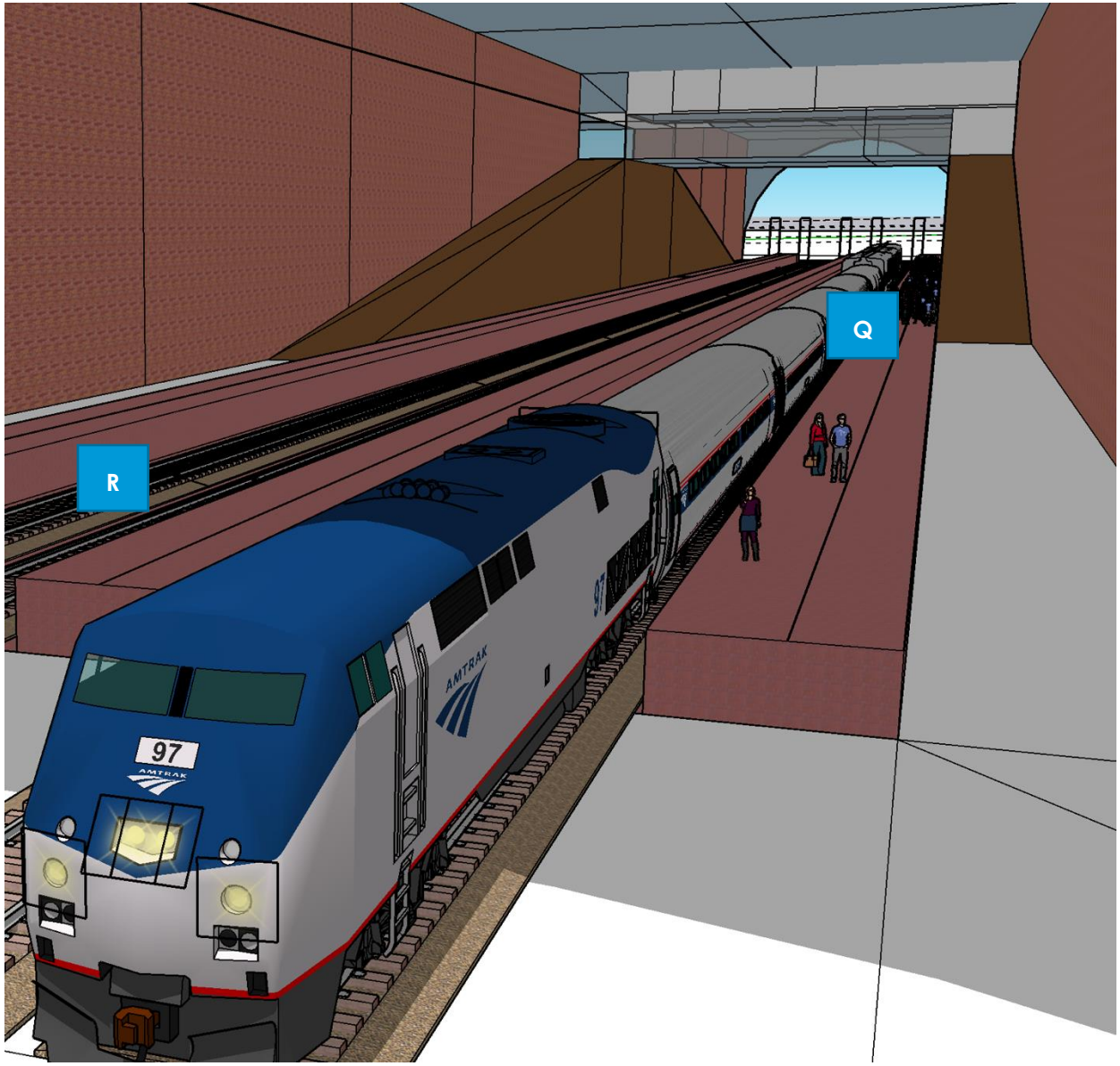
STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

K. Passenger Boarding Shelter
L. Improved Freight throughway
M. Main Station Facility



STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

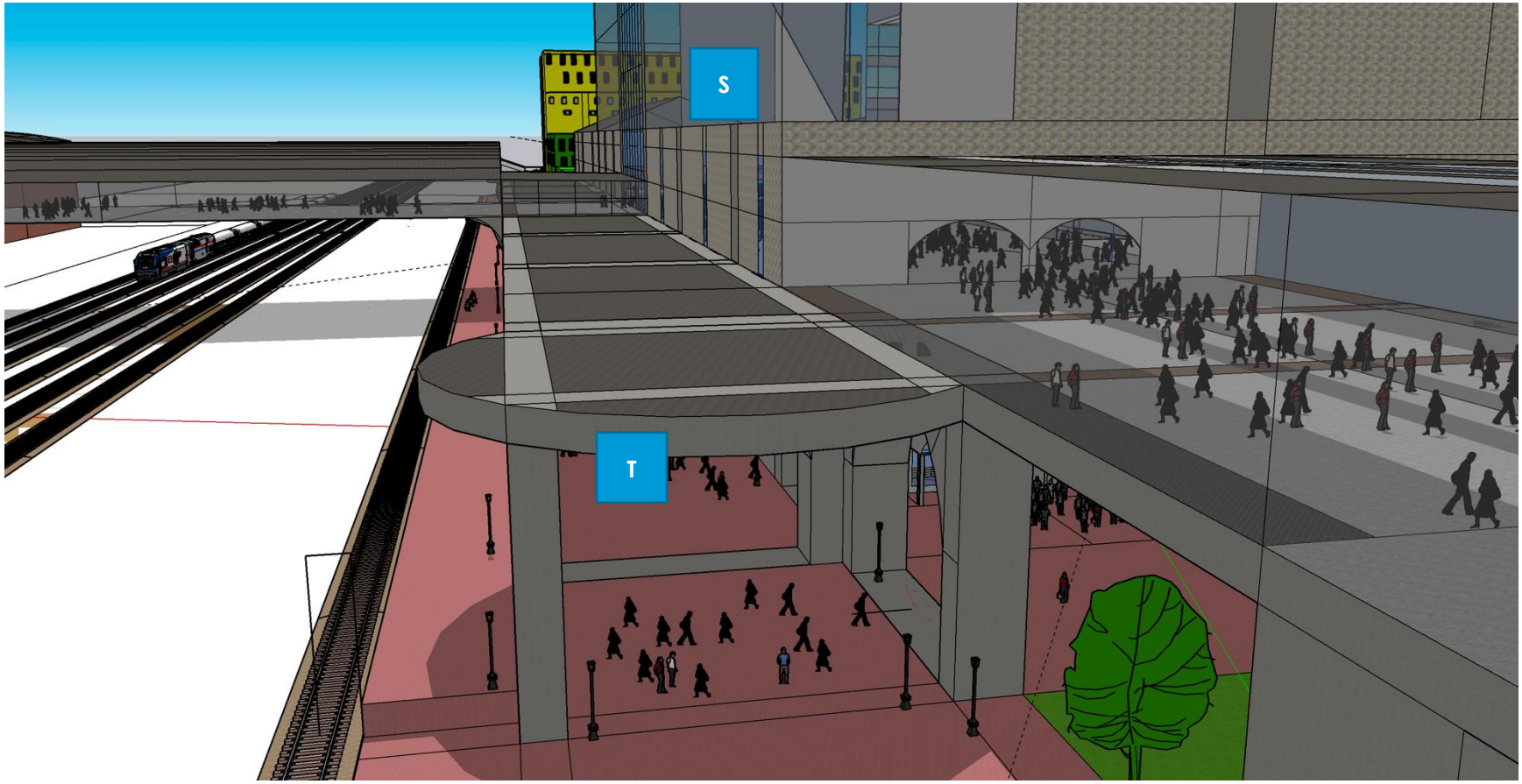
N. Commercial/Residential Mixed-Use: Higher Density
O. Pedestrian Bridge connecting to At Level Boarding
P. Emergency Freight Diversion siding



STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Q. At Level Boarding Platform

R. **Increased Area for future improvements**



STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

S. Main Concourse

T. Covered Promenade

STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

U. North Entrance
V. Integrated Green Space

STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

W. Residential Medium Density

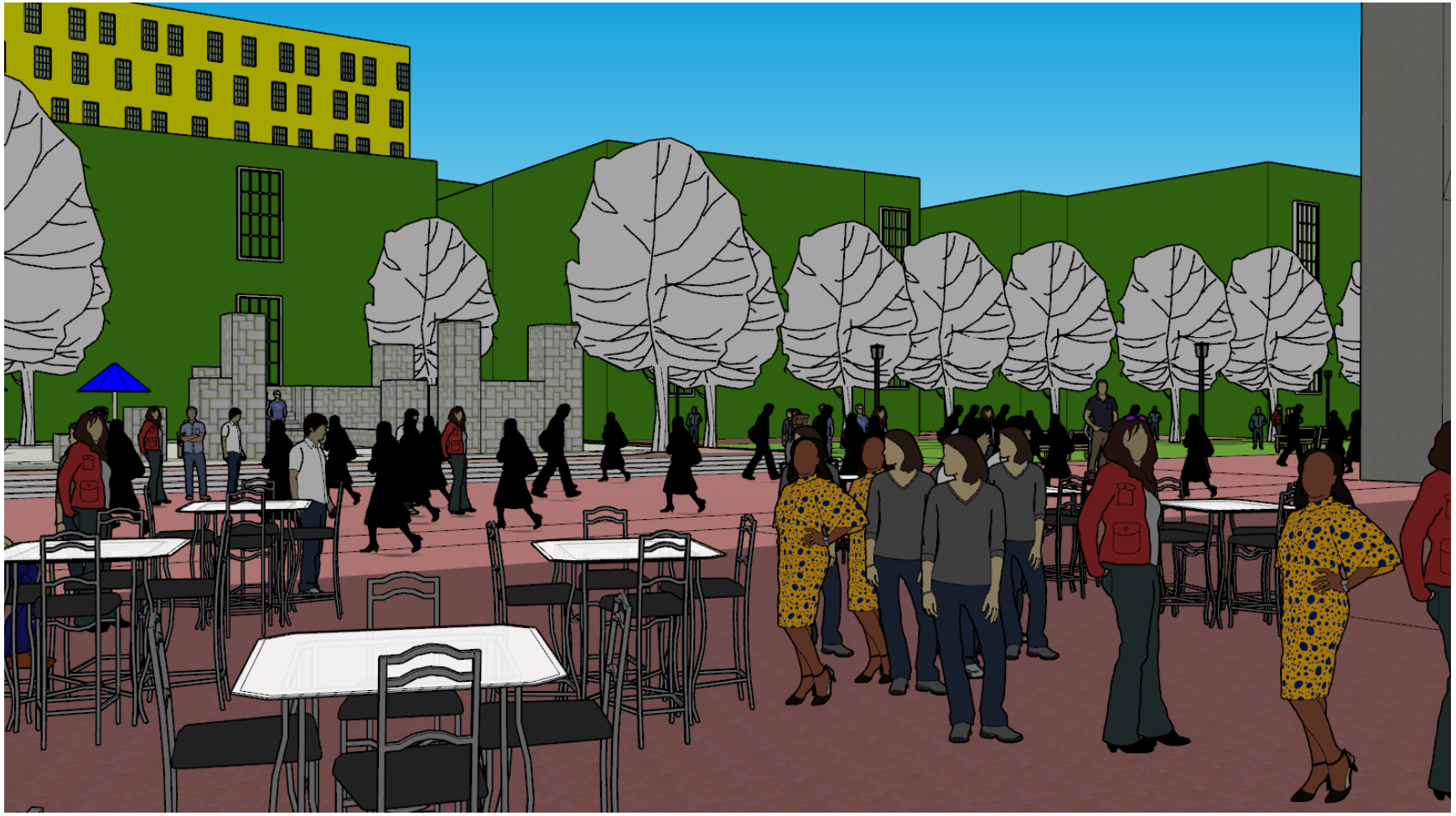
X. Civic Art Installation

STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Sight line from South Entrance

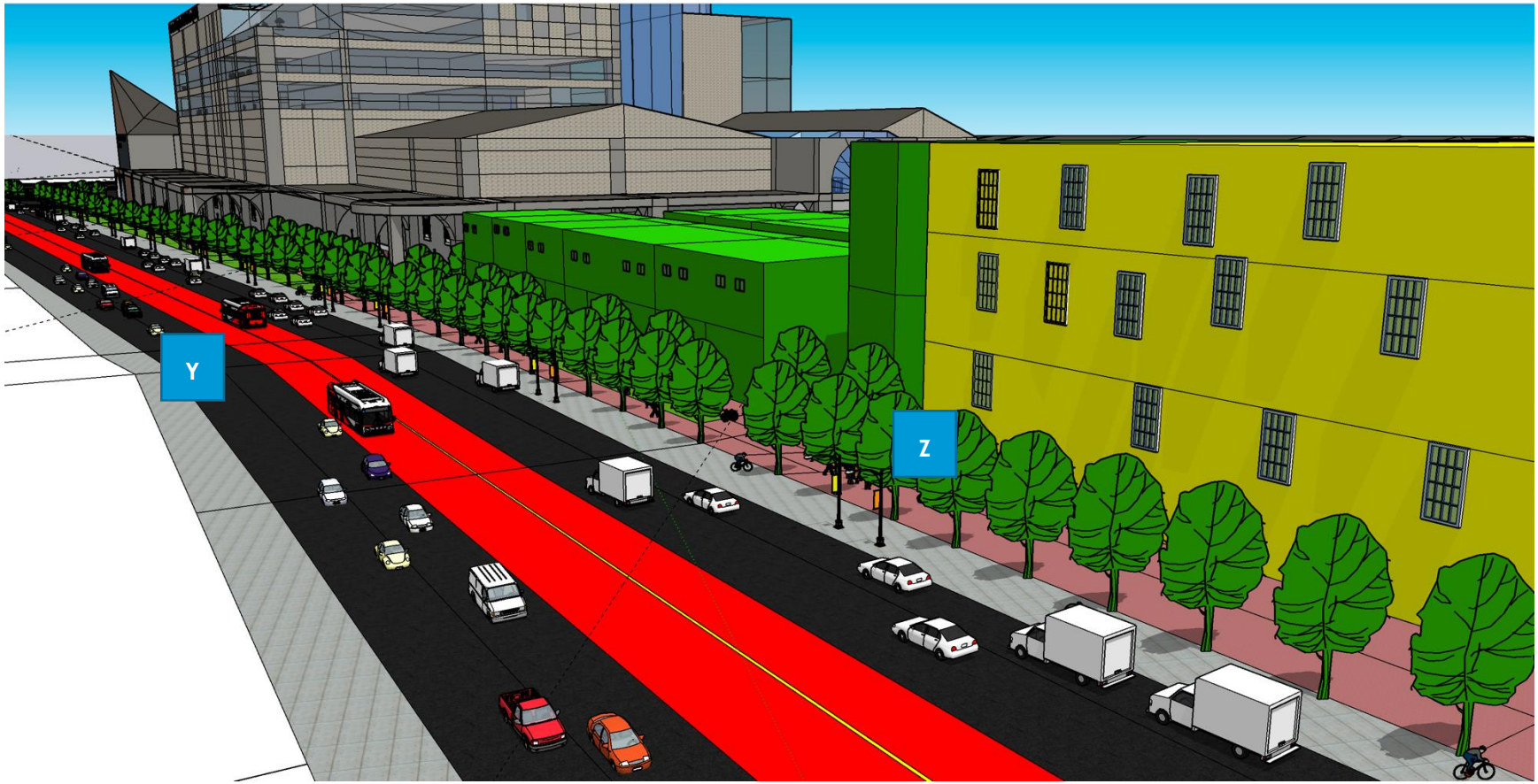
STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Sight Line from Southern Most edge of TOD concept



STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

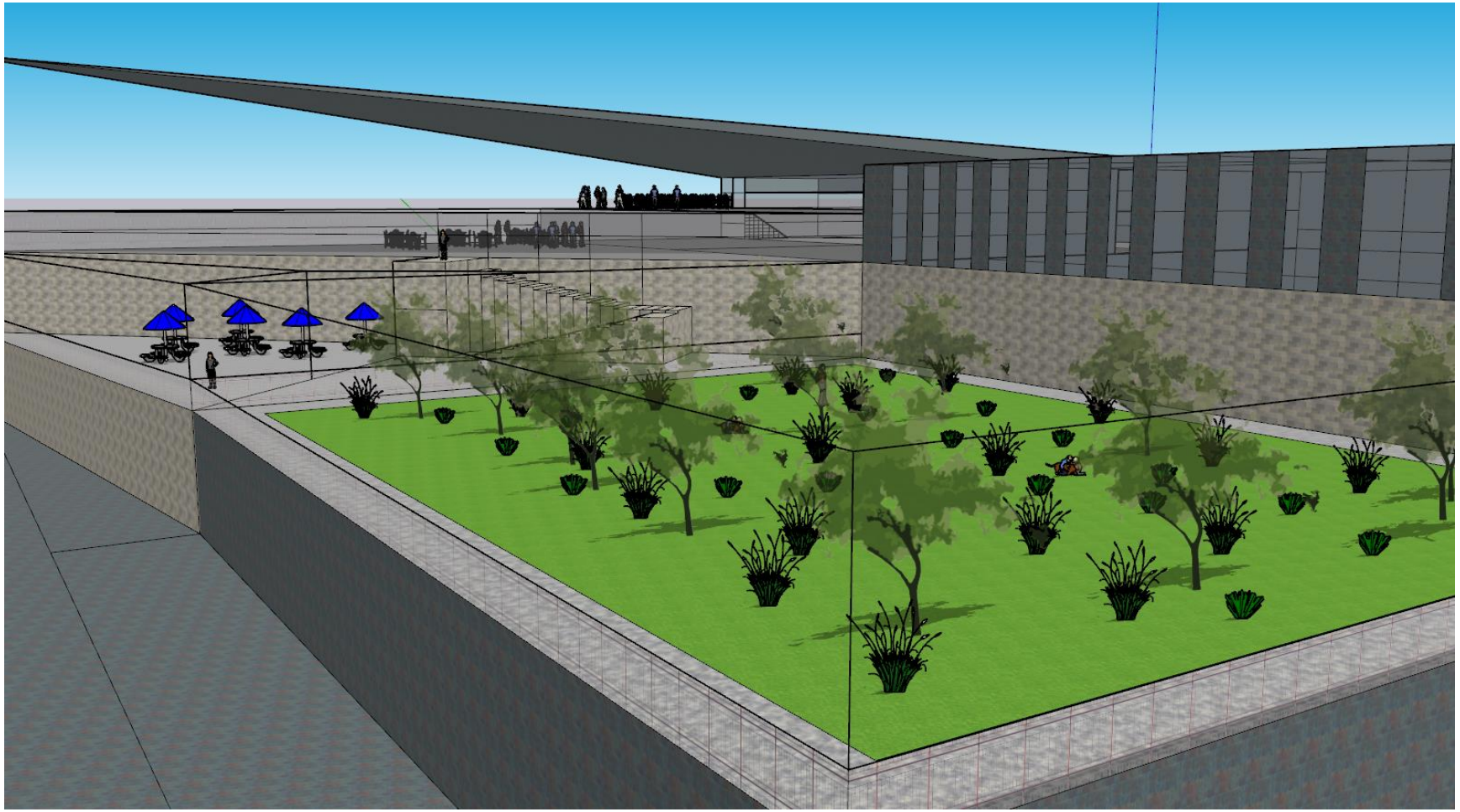
View from South Entrance, Cafe



STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

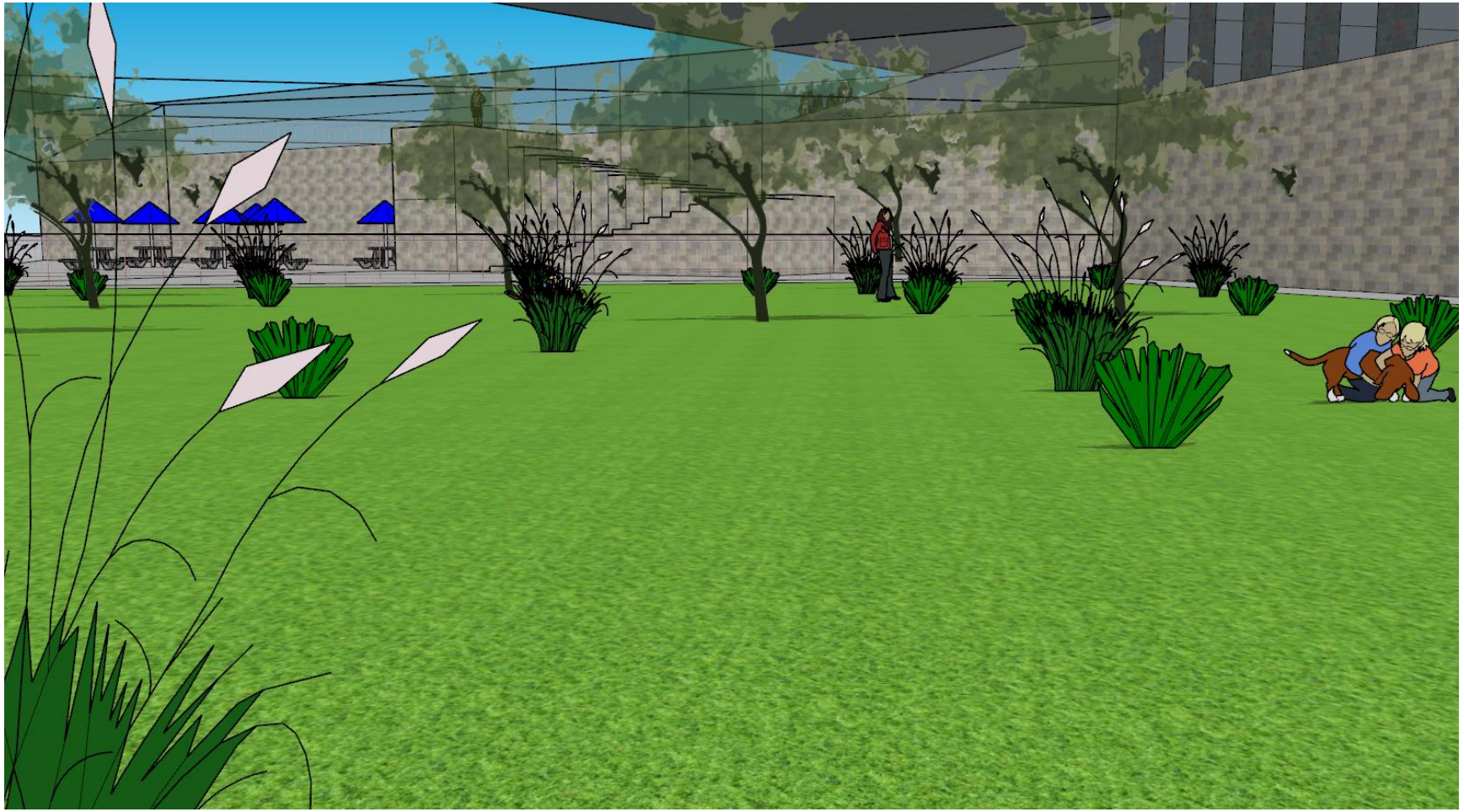
Y. RT 33

Z. Tree Lining along Active Areas



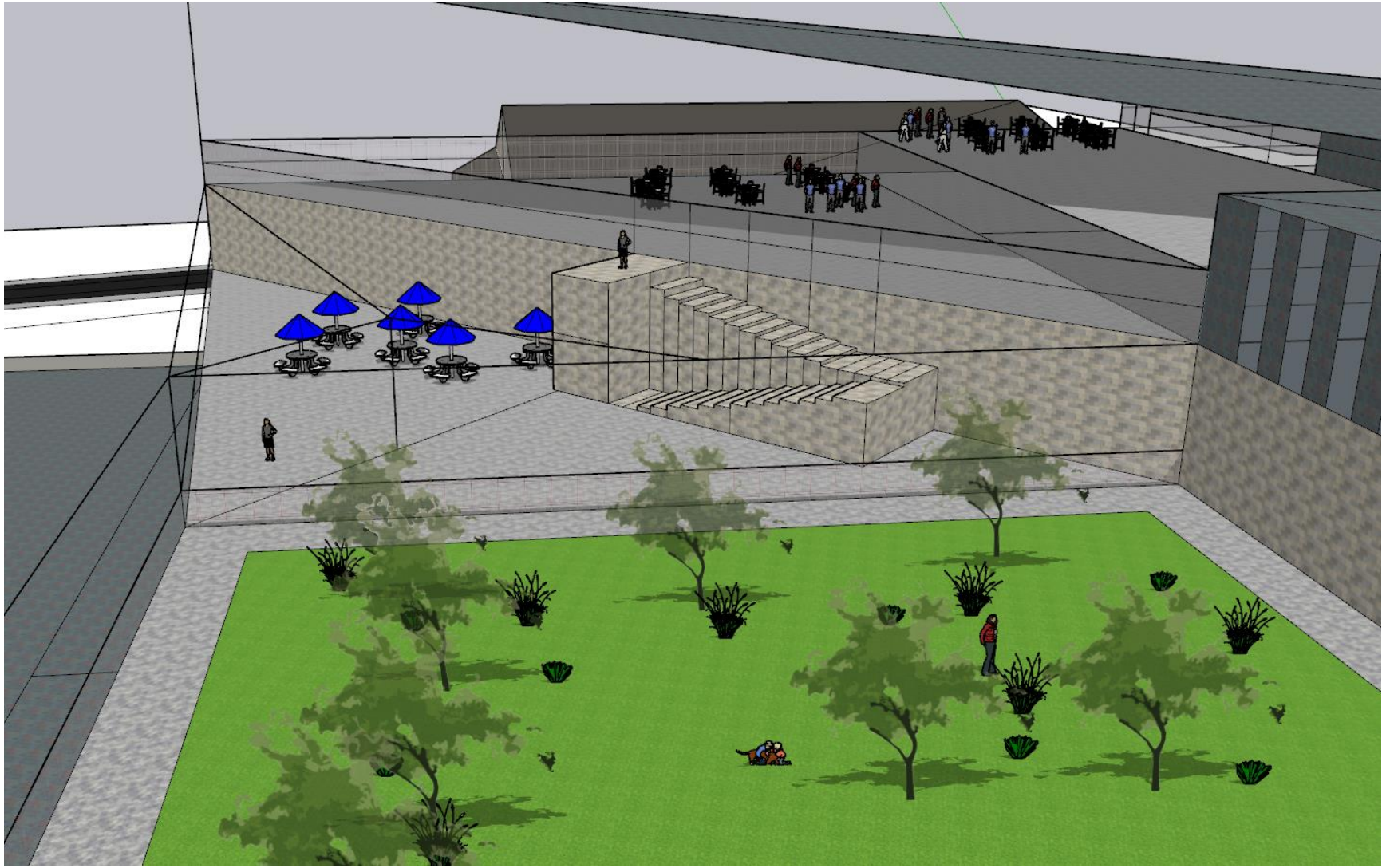
STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Rooftop Garden + Restaurant Concept



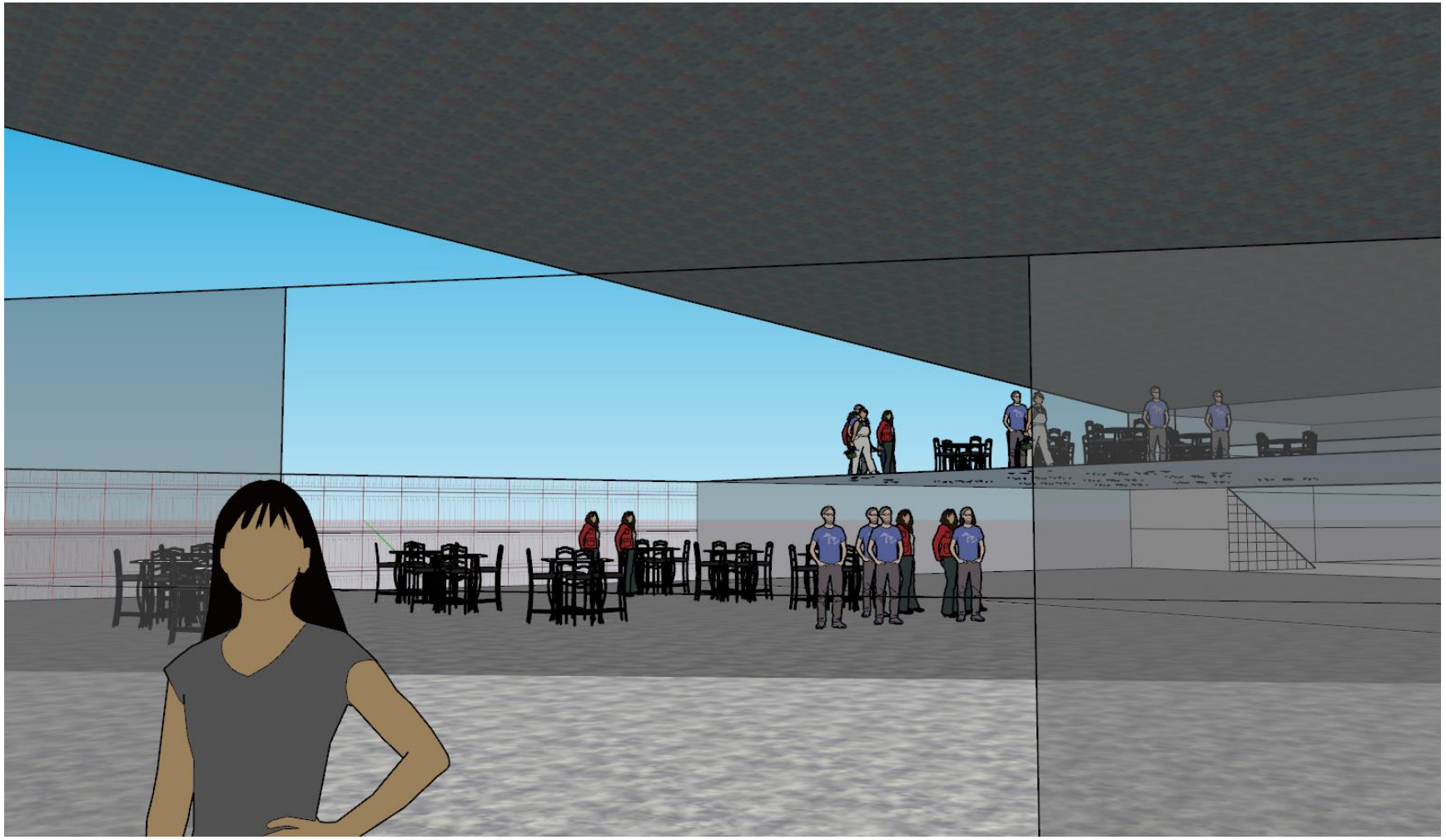
STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Sightline within the Rooftop Garden



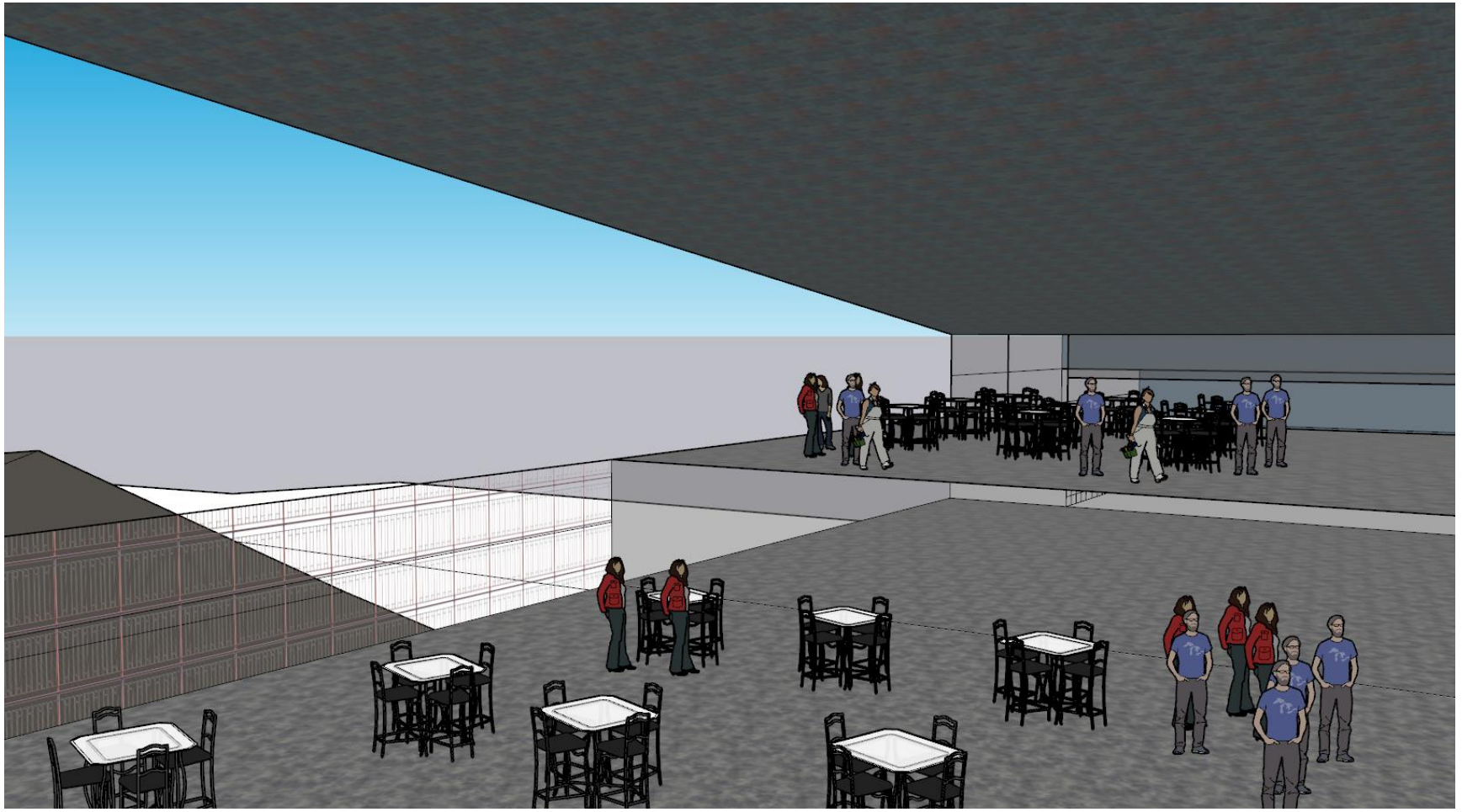
STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Public Seating Area



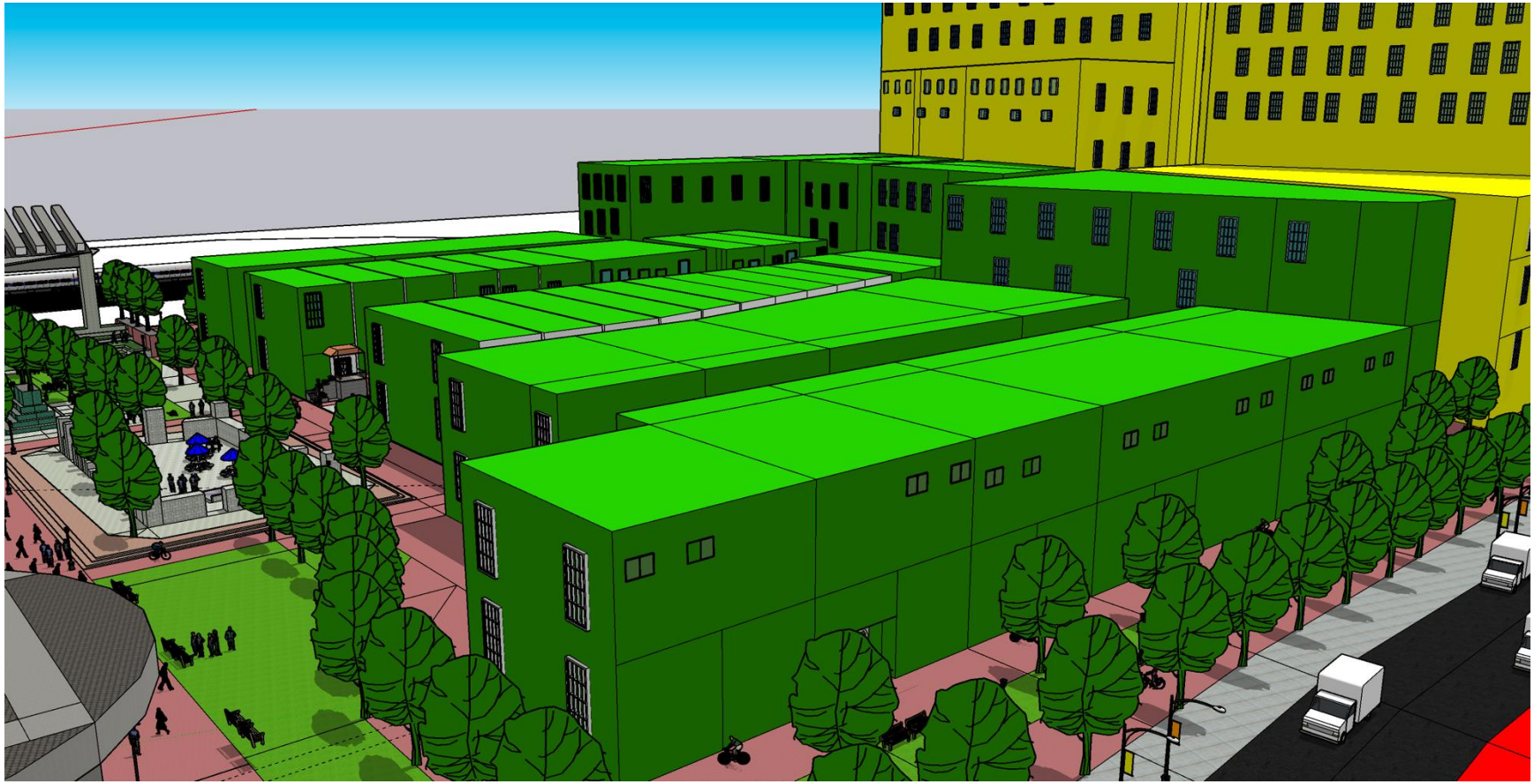
STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Interior Restaurant Concept



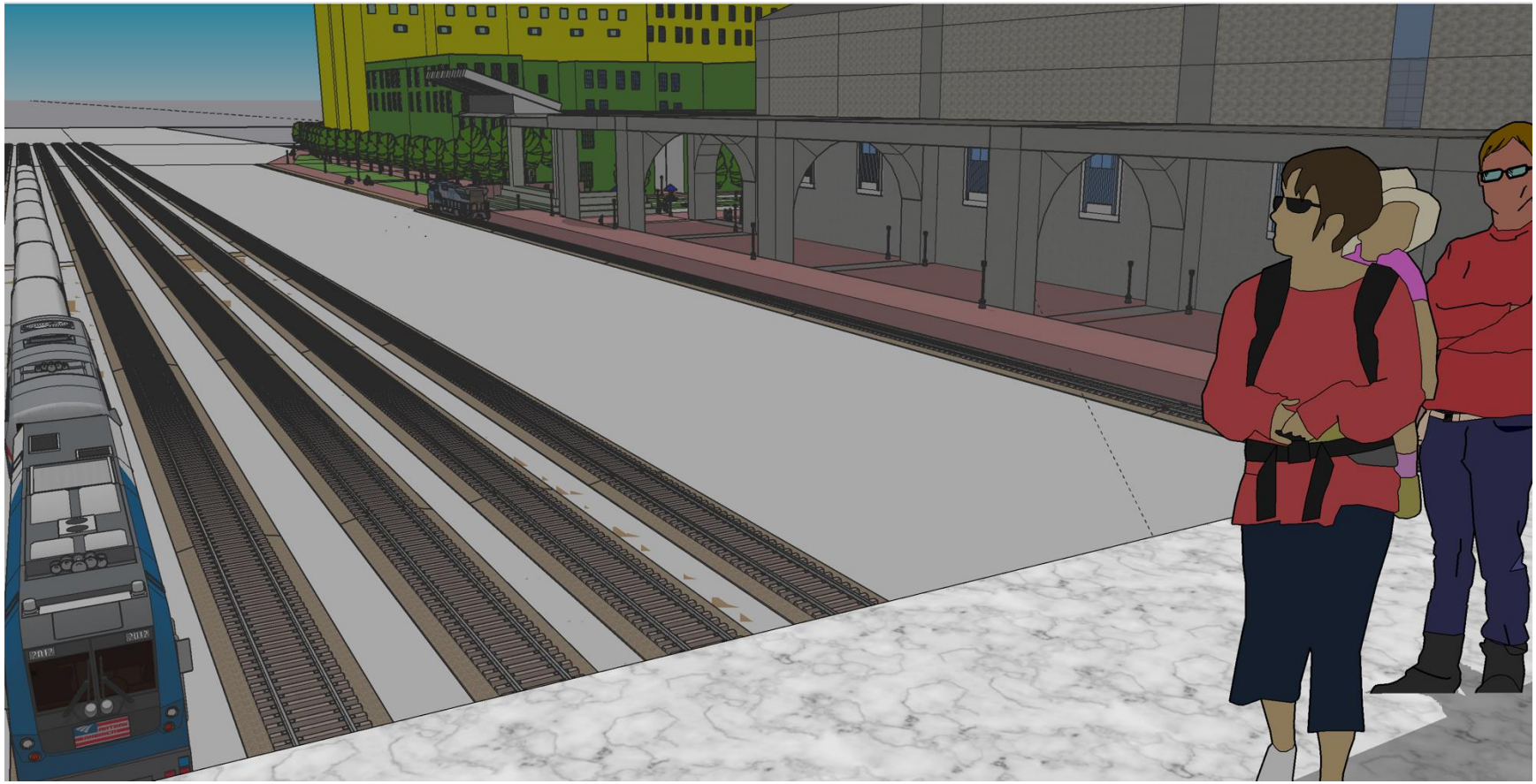
STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Interior Restaurant Concept



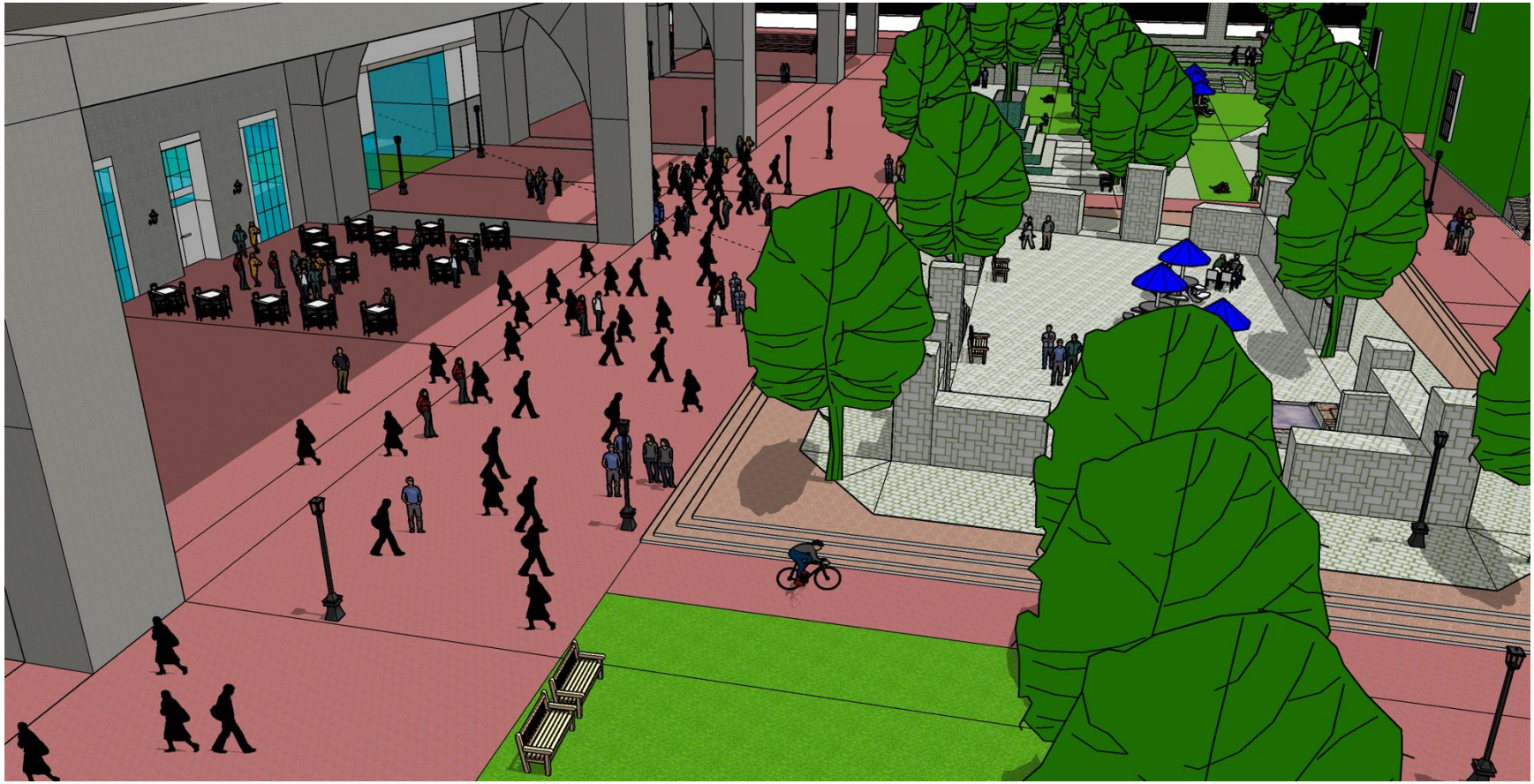
STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Transit-Oriented Development Neighborhood Concept



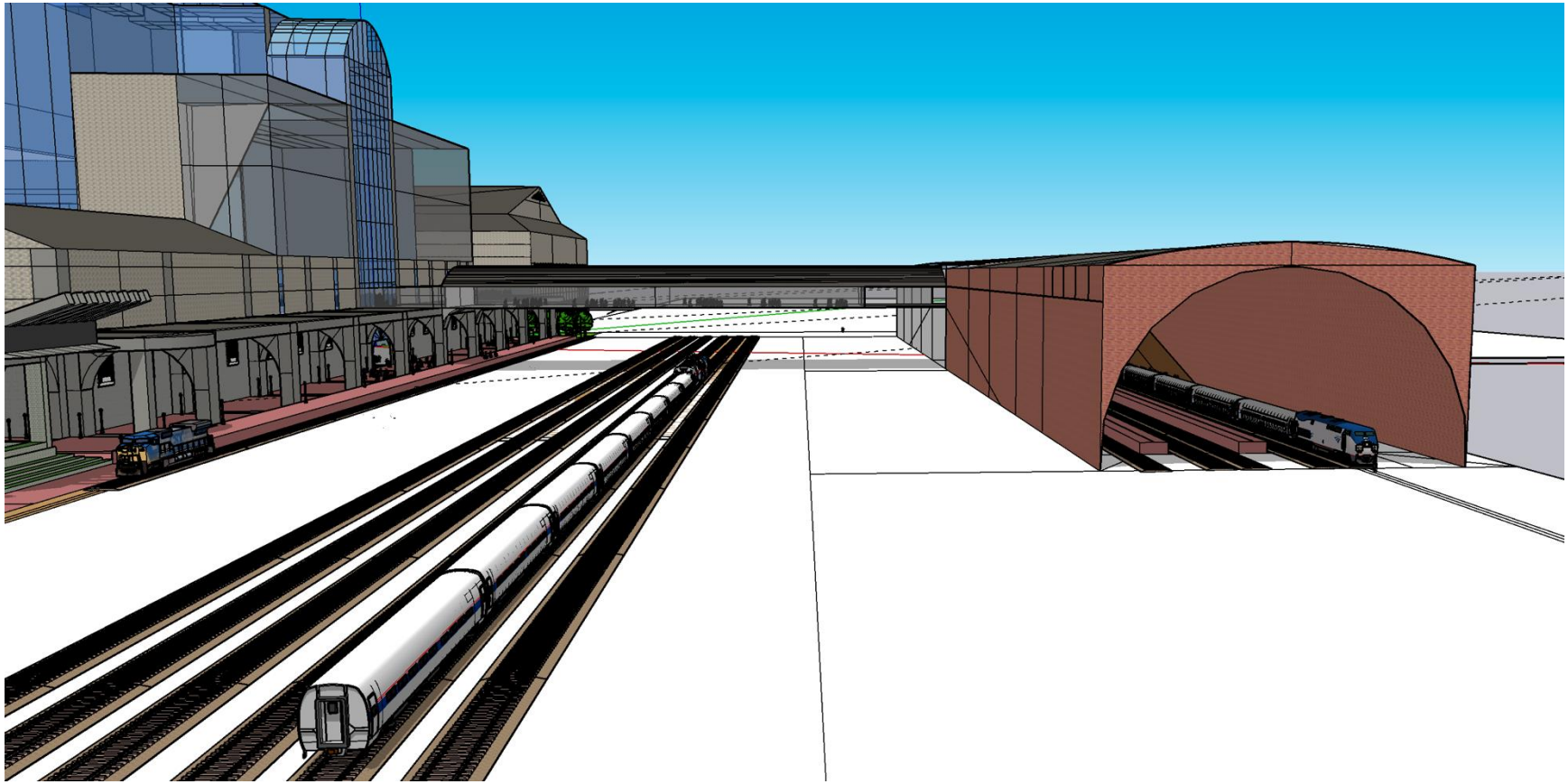
STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

View from Pedestrian Bridge



STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Urban Plaza – Varied Pedestrian Activity



STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Overview – Trainshed + Pedestrian Bridge connection

STATION REPLACEMENT & REDESIGN CONCEPT RENDERING

Main Concourse

HIGHLIGHTED FEATURE CONSIDERATIONS – GLOBAL ELEMENTS

The following features are connected to global themes of rail improvement. Amtrak is currently undergoing a capital equipment modernization program. Amtrak has contracted with Siemens, a locomotive manufacturer, to produce push-pull trainsets capable of operating on the Northeast Corridor and across other lines, specifically non-electrified lines. This will impact Virginia because our state-sponsored routes unitize diesel-electric P42DCs as primary motive power. This modernization program is an added opportunity with this Amtrak Staples Mill Station Strategic Vision Plan 2023.

Additionally, Virginia is embarking on investment in research and development of Small Modular Reactors (SMR's). Since this proposed facility footprint is significantly larger, integrating SMR technology to power the station independently should be considered. Using research dollars and partnering with institutional stakeholders such as Dominion Power or VCU Engineering could prove effectively cross-functional.

[26]

Amtrak Airo Render

[26] Abrams, "Amtrak AiroTM Renderings."

IMPLEMENTATION OVERVIEW

PRE-CONSTRUCTION AND CONSTRUCTION GUIDELINES

The recommendations this plan call for require a phased implementation process. Both Micro and Macro level recommendations involve significant construction, funding, land acquisition, and interagency capacity coordination that will disrupt the day-to-day operations of Amtrak Staples Mill Station. Since this station is the busiest in Virginia, this plan calls for mitigation of passenger rail operations during new build periods so that intercity rail services remain available.

This project will likely take 5-10 years to complete, with a rough estimation of 2 years of pre-construction in preparation for construction. Project preparation will include the organization of an inter-agency commission or committee, applying for grant funding through existing Federal, State, and regional infrastructure funding opportunities, and developing/publishing construction bids for contractors.

A phased approach to replacing the station may begin with the inter-agency entity in place and the contractor sourced. Implementation should provide for these parameters:

1. **Station operations may be mitigated within a reasonable margin but may never cease. The contractor must construct a temporary platform or facility for station operations. Alternatively, construction may be completed in a way that does not interrupt operations, i.e., piecemeal platform construction.**
2. **Construction of the covered parking deck should commence first.**
3. **Transit-oriented development and construction of new station facilities should coincide. The project should budget materials funding to include soundproofing design/quality within all buildings on the site. This subsidy for materials should not be passed through to the end-user or property owner.**
4. **Continuously connect with surrounding community members, solicit input, and integrate feedback where appropriate. This will lay the foundation of a neighborhood civic organization after project completion.**

MACRO-LEVEL VIEW IMPLEMENTATION OVERVIEW

MACRO-LEVEL VIEW

With both the station and the TOD neighborhood proposed in this plan, the following objectives and directed actions are recommended:

1. **Macro Objective 1: Interconnected, comprehensive, green, and varied bike/pedestrian street network**
   - 1.1. Action: Layout microgrid of bike/ped paths
   - 1.2. Action: Organize development plans around this predetermined micro-grid
   - 1.3. Action: Construct connecting Bike and Pedestrian paths from surrounding neighborhoods, use existing sidewalks, and integrate them into new bike/ped paths
   - 1.4. Action: Use hardscaping techniques in the construction of bike/ped paths, for example: protected bike lanes used on car roads
   - 1.5. Action: Use bollards generously to delineate pedestrian and bike-only access
2. **Macro Objective 2: High-quality, long-lasting, interesting, and inspiring structures**
   - 2.1. Action: Source high quality material
   - 2.2. Action: mimic existing station structures like Broad Street and Main Street stations through the design
   - 2.3. Action: Use Virginia suppliers if possible
   - 2.4. Action: Use stone like granite, sandstone, marble, or "hokie stone" in construction
   - 2.5. Action: Engage the local public in designing art installations to be included in the construction
3. **Macro Objective 3: Modern, safe, accessible, at-level boarding platforms, waiting for terminals, public restrooms, and Amtrak Ticket sales spaces**
   - 3.1. Action: Construction aims to include clear directional signage so users may navigate to the platforms easily
   - 3.2. Action: Post-construction, including an overabundance of comfortable seating arrangements and passenger information displays posted in waiting terminals.

3.3. Action: Construct reinforced glass curtain walls along the pathways leading to new platforms

4. **Macro Objective 4: Site-Integrated transit access (GRTC) with future route programming for shortened headways and more direct routes from and to the station**

4.1. Action: Earmark Capital Improvement Funds for Bus Transit Improvements

4.2. Action: Construct a Parking Complex accompanied by a sheltered transit plaza

4.3. Construct Electric Bus charging stations to accommodate new equipment

5. **Macro Objective 5: Using placemaking techniques, create a "Public Square" centered next to the station with public greenspace/pedestrian paths**

5.1. Construct pedestrian paths using domestically sourced brick pavers

5.2. Place adequate signage so bike and pedestrian path users are aware right of way is shared

5.3. Construct shared space and provide comfortable seating

5.4. Use "borders" between uses as primary public space, equip border areas between different uses with seating, leisure, and comfort amenities

5.5. Establish space programming rules that allow for market-based small-scale commerce on station grounds (food trucks, weekend markets, conferences, concert events)

MICRO-LEVEL VIEW IMPLEMENTATION OVERVIEW

MICRO-LEVEL VIEW

Having outlined the implementation steps needed for the TOD portion of this proposal, the following steps detail implementation strategies for the station replacement and its associated features

6. **Micro Objective 6: Fast, Safe, Enjoyable, Accessible, Train embarking/disembarking experience**

6.1. Action: Construction of ADA-accessible at-level platforms for a total of 8 boarding platforms

6.1.1. Equip pedestrian path with ADA elevator

6.1.2. Construction of the platforms should immediately occur after land acquisition

6.2. Action: Demolition of the current station should occur once new platforms are partially complete

6.2.1. As long as platforms are usable, this mitigation will help not disrupt passenger service operations

6.3. Action: Construction of the Parking Complex shall commence after the demolition of the current station

7. **Micro Objective 7: Enjoyable Multiuse Facility featuring varied uses**

7.1. Action: Construct office suites, restaurant infrastructure, and food hall footprint

7.2. Action: Solicit vendors for coffee shops, sandwich shops, and fine dining experience

7.2.1. Prioritize locally owned firms

7.3. Construct passenger concourses at the same time as sourcing vendors for food and retail space, install Passenger Information Displays as well as ticket selling stations (staffed and unmanned)

8. **Micro Objective 8: Purposely Integrated Greenspace**

   8.1. Construct an atrium design coupled with a center spiral grand staircase, and allocate a budget for maintenance.

   8.2. As much as possible, provide for pots, planters, flower beds, bioswales, and permeable surfaces.

9. **Micro Objective 9: Miscellaneous Capacity**

   9.1. Construct and refurbish single siding for partner freight railroads in compliance with safety agreements.

   9.2. Equip protected boarding shelter with water brush feature, providing for automated rinsing of rolling stock.

   9.3. Improve freight throughway rail quality, partnership with CSX to increase speed + passenger capacity through the RF&P Sub

The How – Matrix of Stakeholders

Inter-agency partnership

Public-Private Partnership

CONCLUSION

In conclusion, the research shows that train stations can be more than transitory space. Through the strategies in this plan, train services can be a powerful tool to improve the lives of communities connected by inter-city rail services.

The urgency of this plan must be balanced, as it requires decisive action and resource sharing among stakeholders. The cost of doing nothing and retaining the current decrepit and overused station shows the need to pool resources and act.

Capitalizing on designing stations as civic art echoes past successful examples like Broad Street Station and Main Street Station. These are the inspirations to translate plans into tangible results. A once-in-a-century opportunity like this will cultivate a public asset appreciated for future generations while demonstrating the Richmond region's commitment to progress.

AUTHOR'S NOTE

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Dear colleagues, friends, and stakeholders,

I would like to express my sincerest gratitude for the opportunity to present the Amtrak Staples Mill Station Strategic Vision Plan 2023. This plan is meant to be visionary, aiming to transform the station into a thriving hub of transportation, commerce, community, and culture.

I hope this plan inspires all involved to work collaboratively to envision an improved Amtrak Staples Mill Station. Feedback is always appreciated, and I look forward to continued discourse on this issue. This project presents an exciting opportunity for the region, promising increased economic growth and cultural significance. Thank you once again for your support with this project.

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Appendix A

	Henrico County, Virginia				Census Tract 2005.03, Henrico County, Virginia			
Label	**Estimate**	**Margin of Error**	**Percent**	**Percent Margin of Error**	**Estimate**	**Margin of Error**	**Percent**	**Percent Margin of Error**
SEX AND AGE								
Total population	330,076	*****	330,076	(X)	4,624	±914	4,624	(X)
Male	156,483	±55	47.40%	±0.1	2,126	±445	46.00 %	±5.3
Female	173,593	±55	52.60%	±0.1	2,498	±592	54.00 %	±5.3
Sex ratio (males per 100 females)	90.1	±0.1	(X)	(X)	85.1	±18.5	(X)	(X)
Under 5 years	20,255	±44	6.10%	±0.1	138	±75	3.00 %	±1.7

5 to 9 years	20,387	±924	6.20%	±0.3	147	±80	3.20 %	±1.8
10 to 14 years	21,482	±928	6.50%	±0.3	309	±208	6.70 %	±4.1
15 to 19 years	19,776	±115	6.00%	±0.1	325	±145	7.00 %	±3.3
20 to 24 years	18,537	±112	5.60%	±0.1	394	±155	8.50 %	±3.4
25 to 34 years	47,376	±68	14.40%	±0.1	947	±560	20.50 %	±9.3
35 to 44 years	44,358	±100	13.40%	±0.1	507	±179	11.00 %	±3.7
45 to 54 years	44,266	±100	13.40%	±0.1	790	±262	17.10 %	±3.8
55 to 59 years	22,762	±949	6.90%	±0.3	247	±105	5.30 %	±2.5
60 to 64 years	19,872	±941	6.00%	±0.3	254	±107	5.50 %	±2.6

65 to 74 years	29,855	±102	9.00%	±0.1	324	±107	7.00 %	±2.8
75 to 84 years	13,720	±637	4.20%	±0.2	184	±87	4.00 %	±2.0
85 years and over	7,430	±640	2.30%	±0.2	58	±53	1.30 %	±1.2
Median age (years)	39.1	±0.3	(X)	(X)	35.7	±6.9	(X)	(X)
Under 18 years	75,113	±34	22.80%	±0.1	827	±252	17.90 %	±5.1
16 years and over	263,062	±440	79.70%	±0.1	3,976	±840	86.00 %	±5.0
18 years and over	254,963	±34	77.20%	±0.1	3,797	±834	82.10 %	±5.1
21 years and over	245,048	±518	74.20%	±0.2	3,654	±817	79.00 %	±5.2
62 years and over	62,581	±772	19.00%	±0.2	682	±184	14.70 %	±4.9

65 years and over	51,005	±76	15.50%	±0.1	566	±173	12.20 %	±4.4
18 years and over	254,963	±34	254,963	(X)	3,797	±834	3,797	(X)
Male	118,091	±37	46.30%	±0.1	1,759	±409	46.30 %	±5.3
Female	136,872	±36	53.70%	±0.1	2,038	±518	53.70 %	±5.3
Sex ratio (males per 100 females)	86.3	±0.1	(X)	(X)	86.3	±18.8	(X)	(X)
65 years and over	51,005	±76	51,005	(X)	566	±173	566	(X)
Male	20,989	±70	41.20%	±0.1	216	±86	38.20 %	±10.0
Female	30,016	±46	58.80%	±0.1	350	±122	61.80 %	±10.0
Sex ratio (males per	69.9	±0.3	(X)	(X)	61.7	±27.4	(X)	(X)

100 females)								
RACE								
Total population	330,076	*****	330,076	(X)	4,624	±914	4,624	(X)
One race	317,374	±1,295	96.20%	±0.4	4,252	±871	92.00 %	±4.8
Two or more races	12,702	±1,295	3.80%	±0.4	372	±233	8.00 %	±4.8
One race	317,374	±1,295	96.20%	±0.4	4,252	±871	92.00 %	±4.8
White	181,969	±1,011	55.10%	±0.3	2,859	±368	61.80 %	±10.9
Black or African American	97,911	±1,066	29.70%	±0.3	1,184	±761	25.60 %	±12.9
American Indian and Alaska Native	557	±178	0.20%	±0.1	0	±13	0.00 %	±0.8

Cherokee tribal grouping	71	±96	0.00%	±0.1	0	±13	0.00 %	±0.8
Chippewa tribal grouping	0	±30	0.00%	±0.1	0	±13	0.00 %	±0.8
Navajo tribal grouping	26	±41	0.00%	±0.1	0	±13	0.00 %	±0.8
Sioux tribal grouping	0	±30	0.00%	±0.1	0	±13	0.00 %	±0.8
Asian	29,776	±598	9.00%	±0.2	188	±159	4.10 %	±3.6
Asian Indian	14,887	±1,155	4.50%	±0.3	0	±13	0.00 %	±0.8
Chinese	3,607	±751	1.10%	±0.2	39	±39	0.80 %	±0.9
Filipino	1,486	±408	0.50%	±0.1	7	±11	0.20 %	±0.2

Japanese	218	±124	0.10%	±0.1	0	±13	0.00%	±0.8
Korean	1,951	±541	0.60%	±0.2	0	±13	0.00%	±0.8
Vietnamese	3,385	±908	1.00%	±0.3	142	±155	3.10%	±3.3
Other Asian	4,242	±968	1.30%	±0.3	0	±13	0.00%	±0.8
Native Hawaiian and Other Pacific Islander	89	±40	0.00%	±0.1	20	±32	0.40%	±0.7
Native Hawaiian	29	±35	0.00%	±0.1	20	±32	0.40%	±0.7
Chamorro	5	±10	0.00%	±0.1	0	±13	0.00%	±0.8
Samoan	30	±31	0.00%	±0.1	0	±13	0.00%	±0.8

Other Pacific Islander	25	±31	0.00%	±0.1	0	±13	0.00%	±0.8
Some other race	7,072	±1,094	2.10%	±0.3	1	±6	0.00%	±0.1
Two or more races	12,702	±1,295	3.80%	±0.4	372	±233	8.00%	±4.8
White and Black or African American	3,801	±755	1.20%	±0.2	254	±214	5.50%	±4.4
White and American Indian and Alaska Native	1,195	±179	0.40%	±0.1	65	±60	1.40%	±1.3
White and Asian	2,531	±580	0.80%	±0.2	17	±24	0.40%	±0.6
Black or African American and American	345	±176	0.10%	±0.1	0	±13	0.00%	±0.8

Indian and Alaska Native								
Race alone or in combination with one or more other races								
Total population	330,076	*****	330,076	(X)	4,624	±914	4,624	(X)
White	192,494	±1,578	58.30%	±0.5	3,223	±498	69.70%	±12.6
Black or African American	104,676	±555	31.70%	±0.2	1,466	±781	31.70%	±11.8
American Indian and Alaska Native	3,302	±453	1.00%	±0.1	101	±81	2.20%	±1.8

Asian	33,484	±498	10.10%	±0.2	223	±159	4.80 %	±3.7
Native Hawaiian and Other Pacific Islander	271	±50	0.10%	±0.1	20	±32	0.40 %	±0.7
Some other race	10,110	±1,128	3.10%	±0.3	27	±25	0.60 %	±0.5
HISPANIC OR LATINO AND RACE								
Total population	330,076	*****	330,076	(X)	4,624	±914	4,624	(X)
Hispanic or Latino (of any race)	19,083	*****	5.80%	*****	250	±182	5.40 %	±4.2
Mexican	5,193	±1,007	1.60%	±0.3	13	±17	0.30 %	±0.4
Puerto Rican	2,851	±614	0.90%	±0.2	90	±134	1.90 %	±2.9

Cuban	825	±316	0.20%	±0.1	3	±6	0.10 %	±0.1
Other Hispanic or Latino	10,214	±883	3.10%	±0.3	144	±143	3.10 %	±3.3
Not Hispanic or Latino	310,993	*****	94.20%	*****	4,374	±928	94.60 %	±4.2
White alone	172,663	±441	52.30%	±0.1	2,628	±403	56.80 %	±10.8
Black or African American alone	97,057	±952	29.40%	±0.3	1,184	±761	25.60 %	±12.9
American Indian and Alaska Native alone	437	±145	0.10%	±0.1	0	±13	0.00 %	±0.8
Asian alone	29,667	±597	9.00%	±0.2	188	±159	4.10 %	±3.6

Native Hawaiian and Other Pacific Islander alone	89	±40	0.00%	±0.1	20	±32	0.40%	±0.7
Some other race alone	779	±317	0.20%	±0.1	0	±13	0.00%	±0.8
Two or more races	10,301	±1,066	3.10%	±0.3	354	±226	7.70%	±4.7
Two races including Some other race	1,200	±471	0.40%	±0.1	8	±13	0.20%	±0.3
Two races excluding Some other race, and Three or more races	9,101	±1,037	2.80%	±0.3	346	±227	7.50%	±4.7
Total housing units	138,225	±163	(X)	(X)	1,633	±181	(X)	(X)

CITIZEN, VOTING AGE POPULATION								
Citizen, 18 and over population	234,661	±1,404	234,661	(X)	3,743	±835	3,743	(X)
Male	107,791	±818	45.90%	±0.2	1,706	±412	45.60%	±5.4
Female	126,870	±913	54.10%	±0.2	2,037	±518	54.40%	±5.4

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