



ONTRACK

Phase II:

Transit-Oriented
Development Paths
for North Brunswick

RUTGERS

Edward J. Bloustein School
of Planning and Public Policy

AECOM

NEC 
FUTURE
A Rail Investment Plan



ONTRACK INTRODUCTION

NEC FUTURE: creating a vision for the future of passenger rail travel in the Northeast

ONTRACK: creating a vision for transit-oriented communities of all scales along the NEC

Steps

- Develop generalized station typologies based on NJ NEC stations
- Establish development guidelines for each typology that foster a connection with the corridor
- Propose planning best practices to realize the goals of the development guidelines

Phase II: apply the framework

ONTRACK





Studio Goals

Provide options and toolkit for communities impacted by NEC Future plan

“Market the Future”

Provide realistic and ideal pictures for development paths

Maintain sustainability as a tenet

Show communities how to take advantage of increased service under NEC Future

Illustrate strengths and weaknesses of each development path

ONTRACK



STATION TYPOLOGIES



Scope of Work

Finalize station typologies and development guidelines

Choose 1-2 existing or proposed sites as case studies

Apply the framework to develop site-specific plans that fulfill the mission of the NEC Future plan:

- Land use regulations
- Economic development
- Resilience and sustainability
- Transportation



ONTRACK: NEC NJ

Station Typologies

City Center

- Elizabeth
- New Brunswick
- Newark Penn
- Trenton

Neighborhood Center

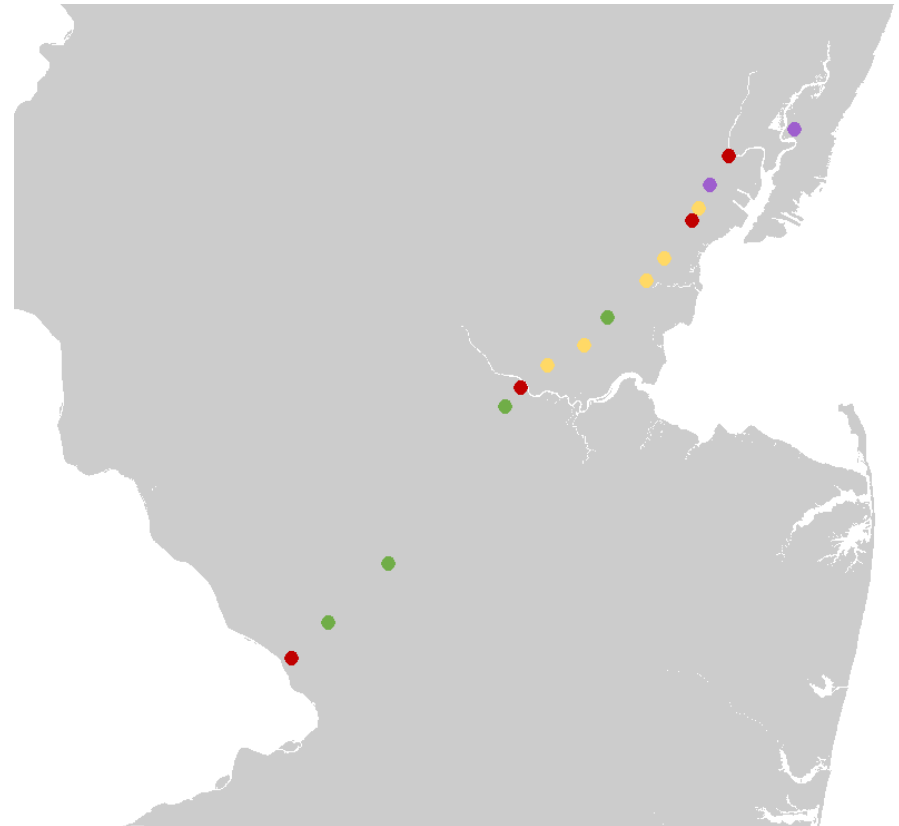
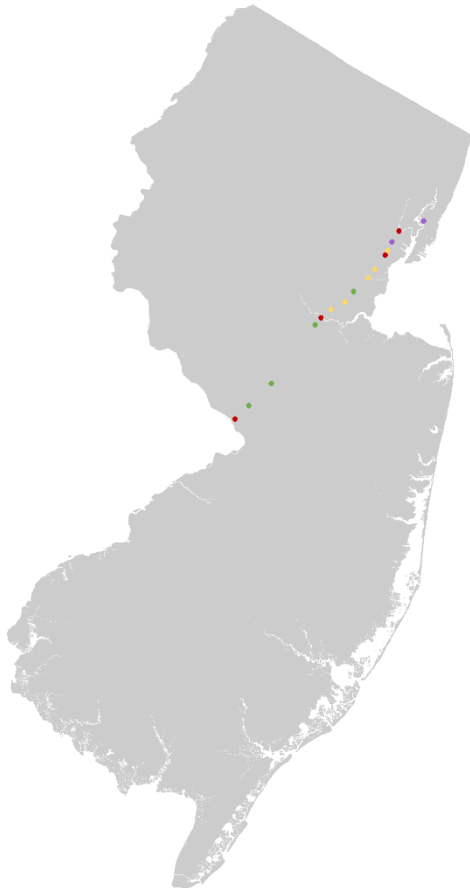
- Edison
- Linden
- Metuchen
- North Elizabeth
- Rahway

Suburban

- Hamilton
- Jersey Ave
- Metropark
- Princeton Junction

Special Use

- Newark Airport
- Secaucus



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ONTRACK: NEC NJ

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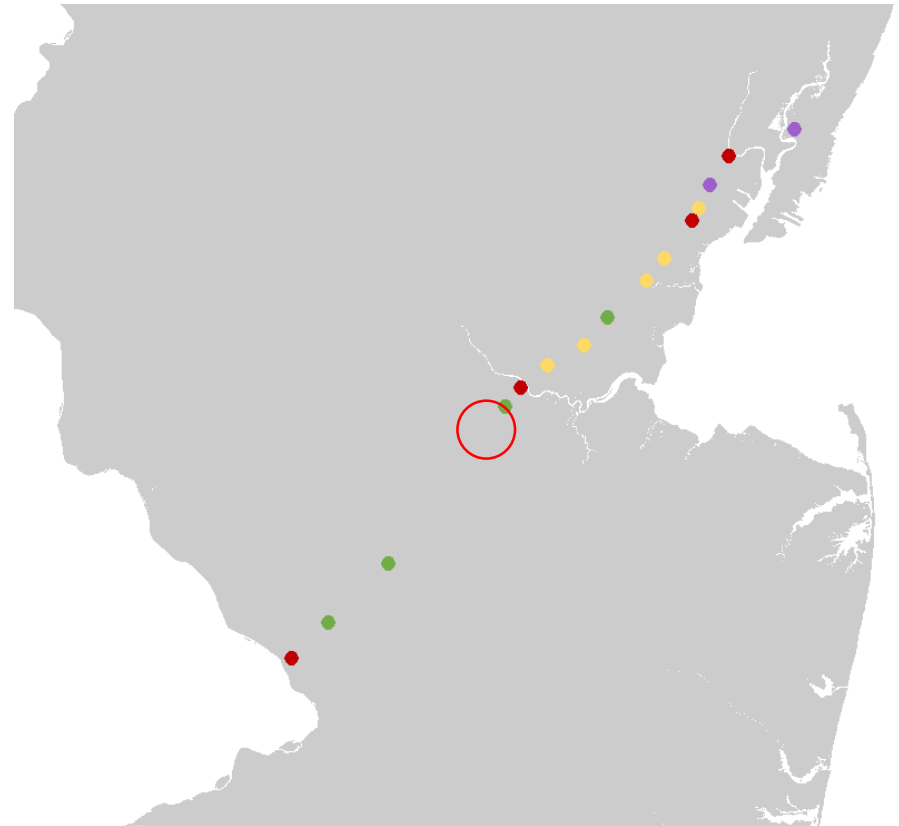
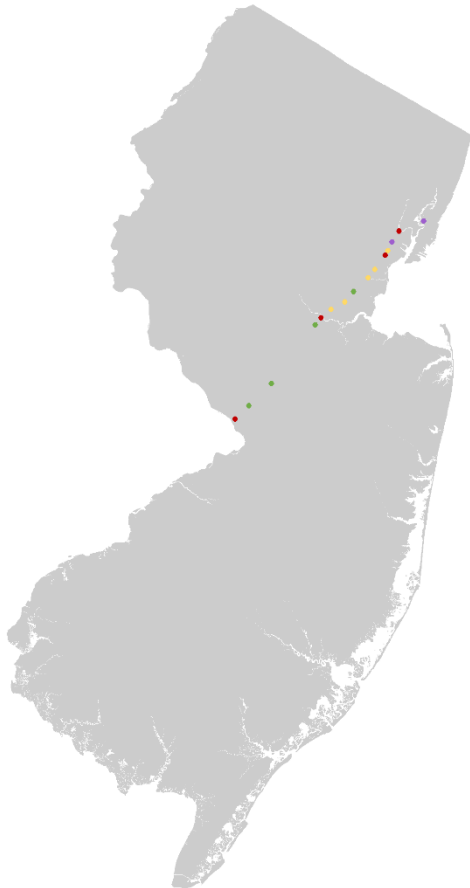
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US Highway 1

Costco

Target

North East Corridor

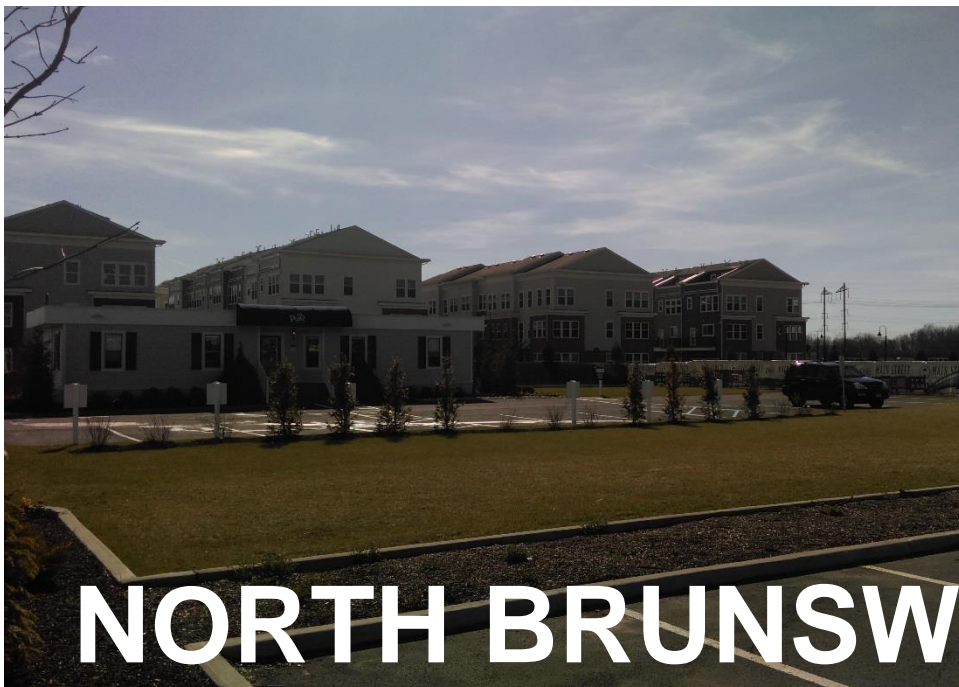
EXISTING SITE





NORTH BRUNSWICK TODAY





NORTH BRUNSWICK TODAY



New Jersey Area Rising Around Transit Hub Lacks One Thing: Its Hub

By NICK CORASANTI MARCH 12, 2017



A sign promoting a new train station that has yet to be built in North Brunswick, N.J. The project was unveiled with great fanfare four years ago, but its future is unclear.

Byron Acosta for The New York Times

NORTH BRUNSWICK, N.J. — All the ingredients for a bustling downtown transit hub here are coming together: new townhouses, restaurants and big-box stores sit just off the busiest rail corridor in the country, as trains whiz by every 10 minutes or so. Bulldozers, backhoes and scattered mounds of dirt offer evidence of more to come. A large banner over a nearby highway with an illustration of a train declares: "Shop. Dine. Ride. Live."





Suburban

The Suburban category serves areas outside and on the fringes of City and Neighborhood Centers. Often commuters will travel to these Station by car and park thus coining the term 'Park and Ride'. Each of these stations are highly frequented by those commuting for work.



Neighborhood Center

Neighborhood Center stations serve small to medium size urban areas that are usually within commuting distance of major urban centers. A mix of higher and medium density housing surrounds stations, while single-family housing is prevalent further away from the station.



City Center

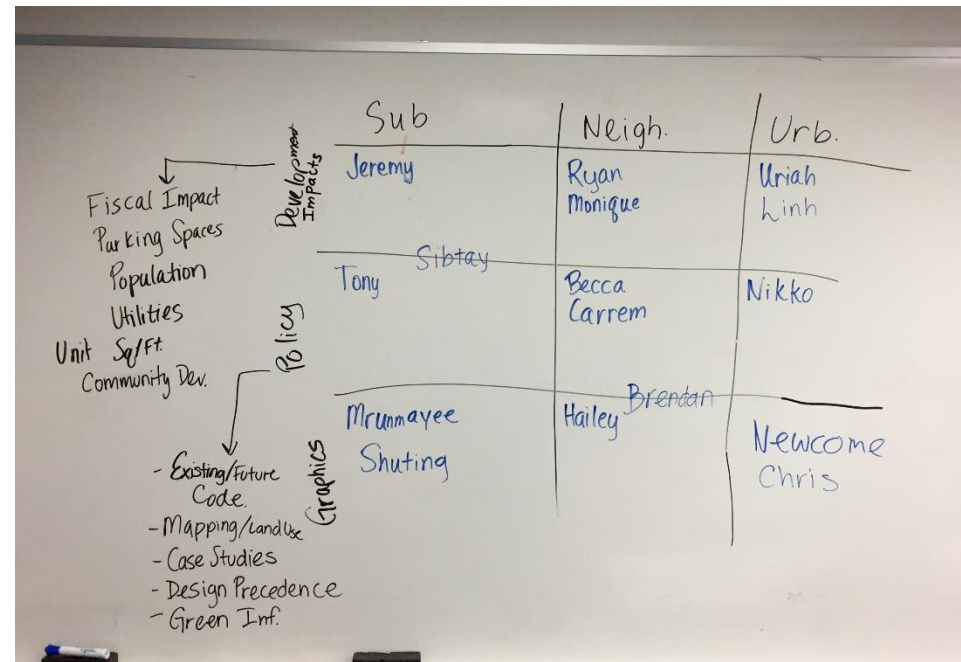
City Center stations are characterized by high accessibility, intense population density, and a considerable use of commercial activity within 1 mile of stations.



Development Guidelines

- Support multimodal station access
- Encourage mixed-use development
- Increase municipal tax revenue
- Accommodate anticipated station area demand for the year **2040**

The Process





SUBURBAN



Site Plan Development



Google earth



Site Plan Development

Final Site Plan



Low Density Residential	
Medium Density Residential	
Mixed Use	
Commercial	
Community Facilities	
Parking Lot	
Parking Garage	
Train Station	
Parks/Recreation	
Northeast Corridor	



Final Site Plan

Density

Single-family detached dwelling unit should not exceed 2 stories.
Multi-family dwelling units should not exceed 6 stories (including any commercial at ground level) unless approved by planning board.

Stormwater Management

Limit impervious surfaces to minimize flood risk and to allow for the recharge of groundwater and aquifers.
Mitigate negative impacts on the quality of local water sources by developing a long-range stormwater management plan.
Incorporate open space into the stormwater management system.



Bikes and Pedestrians

Prioritize walkable and bikeable street systems to provide active, affordable transportation choices to residents.
Foster a human-scale and pedestrian-friendly environment by allowing for breaks in the massing of building.

POLICY



DEVELOPMENT IMPACTS



Fiscal

- Compared to the other visions, the suburban plan requires the least upfront public investment, but also has the least potential increase in the municipal tax base
- The site is estimated to attract more workers than residents, lessening the net impact of new service provision
- There are many positive examples of suburban communities making successful investments in transit-oriented development



Community Facilities

- Most community facilities are on the east side of the NEC
- Development at this level will not necessitate many new facilities, but rebalancing facility location may need to be considered
- Addition of 200 school-aged children should not have a detrimental impact on existing North Brunswick school facilities
- Location of emergency services may need to be reevaluated, but need for additional police, fire, or EMS services is minimal
- Additional parkland included in the development more than counteracts the additional population



Environmental

- Over **20%** of the site would be left as pervious surfaces
- Existing stormwater retention infrastructure left in place
- Green building materials and methods should be required for commercial structures, and encouraged for residential structures
- Parkland fronting rail ROW will lessen the noise impacts of additional rail service
- Extensive bike/ped infrastructure and access to the train station will encourage fewer car trips

CASE STUDY Orland Park, Illinois



Orland Park, IL is a suburban village located 25 miles southwest of Chicago. Beginning in 2000, the village decided to capitalize on underused land around their METRA station by implementing a TOD plan. By 2007, the station had been rehabilitated and mixed use facilities were under construction. The real estate crash of 2008 caused private investors to pull out, jeopardizing the future of the site, but Orland Park stepped in with an infusion of bond-backed credit to keep development on track. Today, the site continues to be built out and is returning a profit.



NEIGHBORHOOD CENTER



Site Plan Development



Site Plan Development



Final Site Plan



Final Site Plan



Green Buildings

Provide density bonuses for LEED certification and green roofs.

Stormwater Management

Use sustainable streetscape materials, considering costs, durability, and ecological impacts

Parking

Eliminate parking minimums for commercial and residential uses.
Allow and encourage shared-parking policies.
Allow for adaptive parking decks to be built.

Street Design

Use excess portions of right-of-way, such as overly wide lanes, unused street space, or spaces created by streets coming together at odd angles to create landscaped and/or usable areas.

Bikes and Pedestrians

Implement complete streets policy
Support safe, comfortable walking. The standard sidewalk width should be 10'.
Require bicycle parking for projects over a certain size.

POLICY



POLICY

Street Frontage

Encourage cafe seating and merchandise display on sidewalks in front of storefronts. A minimum of five feet of unobstructed sidewalk must be provided between the curb line and the outdoor seating area.

Orientation

Require building to be oriented towards the sidewalk or a shared public plaza.

Access

Encourage public seating, both formal (benches, chairs) and informal (seating walls, bollards) as part of street improvement projects.

Mix of Uses

Incorporate residential uses above first floor of commercial space.

Regulate Building Frontage

Require a minimum amount of transparent space for buildings with first floor commercial uses.

Require architectural articulation to stimulate the first-floor experience



DEVELOPMENT IMPACTS



Fiscal

- Significant increase in infrastructure investment necessary but much larger range of revenue with the increased job base, retail and residential opportunities.
- Increased sewer and electrical capacity will increase the initial expenditures
- North Brunswick would receive a huge increase to their tax base through new residences and businesses.
- Plan would require additional upfront investment which may not be politically enticing



Community Facilities

- With a population of over 1,500 children expected by 2040 a new school and daycare facilities will be necessary
- Pedestrian-friendly routes to schools, parks, and public space an important community need in this vision
- Park space will be within 1/4 mile of all residential sites creating a healthy and close knit environment for all residents.



Environmental

- Design of site limits the use of cars and encourages pedestrian modes of transportation
- The site will have roughly 11,500 parking spaces, significantly less than the current zoning ordinance proposes
- Less than 50% of site will be developed. providing access to park space and natural stormwater management

CASE STUDY Charlottesville, Virginia



Our concept for a car-free, pedestrian friendly business and retail corridor was inspired by places our team members have visited including the pedestrian mall in Charlottesville. The mall is accessible by public transit and allows pedestrians to move freely between businesses, enjoy a vibrant and communal space, and relax outdoors. This concept is great for business, community gathering, and events as it allows for considerable pedestrian activity right in the heart of downtown.



URBAN CENTER



Site Plan Development



Site Plan Development





Final Site Plan



Low Density Residential

Medium Density Residential

Mixed Use

Commercial

Community Facilities

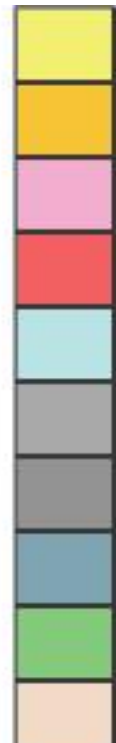
Parking Lot

Parking Garage

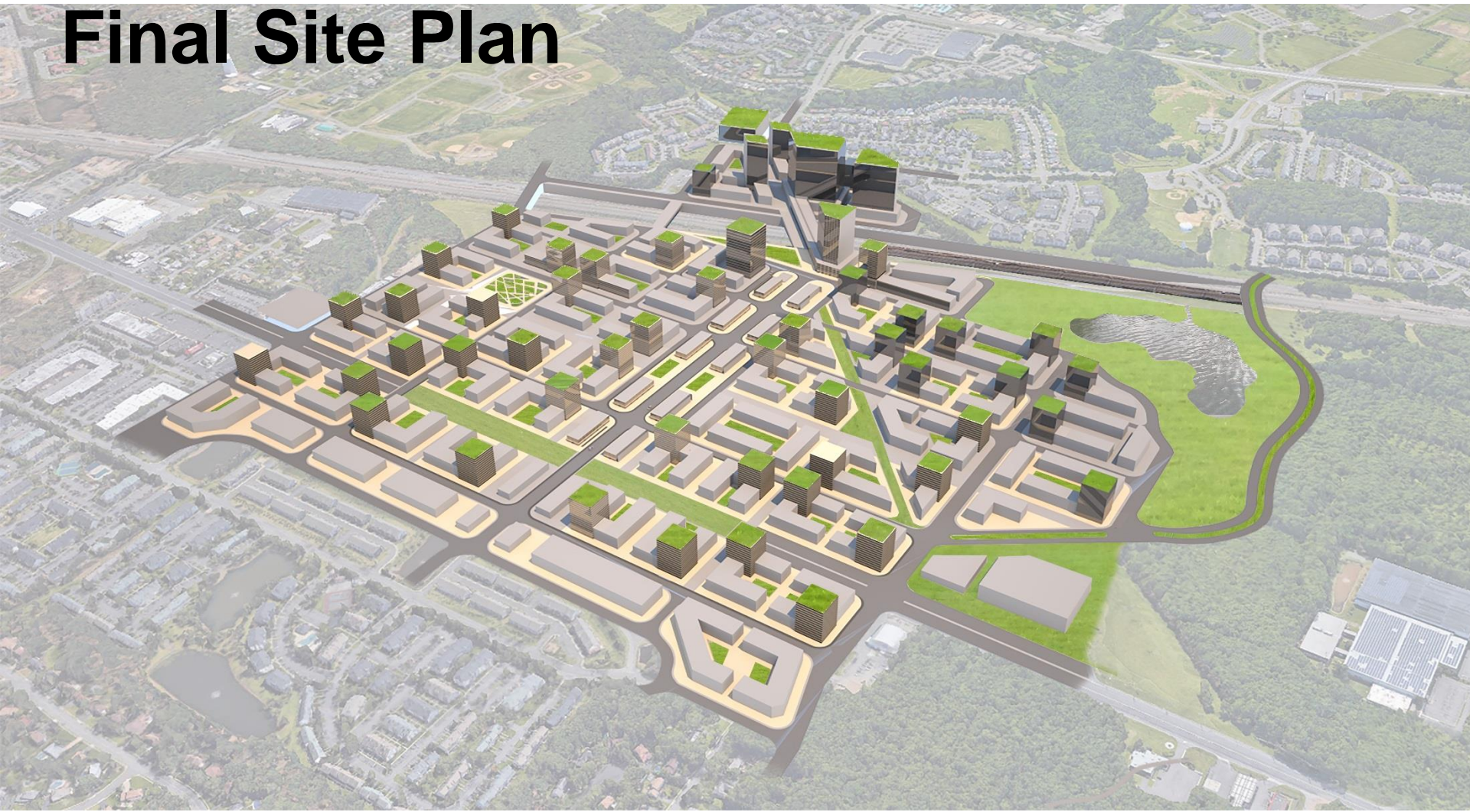
Train Station

Parks/Recreation

Northeast Corridor



Final Site Plan



Stormwater Management

Incorporate stormwater management facilities into public amenities such as parks and open space.

Maximize opportunities in the streetscape for on-site stormwater retention and infiltration.

Density

Buildings should have a medium-rise base with some high-rise elements to provide density without overwhelming the urban environment.

Open space, such as courtyards, should be incorporated into the design of most buildings.

Green Buildings

Adopt incentives for the private installation of green roofs.

Adopt Municipal Green Buildings Ordinance.

Adopt LEED standards for public buildings.

Explore incentives for the private adoption of LEED standards for new construction

An architectural rendering of a modern urban development. The scene features several multi-story buildings with a mix of grey and light-colored horizontal bands. In the foreground, a large, open courtyard with green grass and a light-colored paved walkway is populated with people. Two women are walking, a man is playing basketball, and a group of children are playing on the grass. The sky is blue with some clouds.

POLICY

Street Activity

Street life should be encouraged by ensuring that the proper space is allocated for all sidewalk cafe spaces.

Five to ten feet of unobstructed sidewalk space must be provided between the curb and any outdoor seating area.

POLICY



Parking

Prohibit on-street parking.
Locate parking garages on the edge of development with strong pedestrian connections to and from them.
Eliminate commercial and residential parking minimums.
Prepare for the adaptive reuse of parking decks by permitting the construction of retrofittable structures.

Mix of Uses

Sidewalk-level retail should be required at the base of each tower with other commercial, residential and office uses being situated on the floors above.

Bikes and Pedestrians

Sidewalks should follow all NACTO design standards
Maintain a desired minimum through zone of eight feet.
Sidewalks must be designed with the needs of wheelchairs and other mobility devices in mind.

Street Frontage

Limit setbacks to create a cohesive and urban street wall.
Buildings must orient their primary entrance toward the sidewalk, but may conditionally orient around a shared public plaza.

Street Design

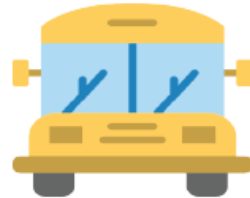
Motorized speeds should be limited to the greatest degree possible to allow for the safe usage of streets as shared space. This should be accomplished through design, not regulatory measures.

DEVELOPMENT IMPACTS



Fiscal

- With an expected residential population of 20,000 and an additional 23,000 potential daytime employees, pursuing an urban development would significantly increase the municipality's tax base.
- Extensive infrastructure expansions would be needed to accommodate a project of this size. However, this conceptual plan looks to mitigate the cost of an urban project in North Brunswick.



Community Facilities

- This urban development will serve as an extension and intensification of development in nearby New Brunswick and Piscataway. As such, considerable attention should also be given to connecting bus services to this area as it develops.
- Local institutions such as Robert Wood Johnson University Hospital and Rutgers University should be treated as assets, and connectivity to these institutions should be prioritized.
- Additional public facilities, such as schools and fire departments, may be required due to the large increase in population. Over half of the land uses in this development are planned as multi-family residential structures.



Environmental

Parking accounts for about 5% of the total land uses in the area with all of the related facilities placed around the outskirts of the development. This plan looks to integrate multimodal transportation options, with special attention given to cyclists and pedestrians. Limited parking options and increased amounts of green space limits car use and encourages walkable developments.

CASE STUDY Richmond City Centre



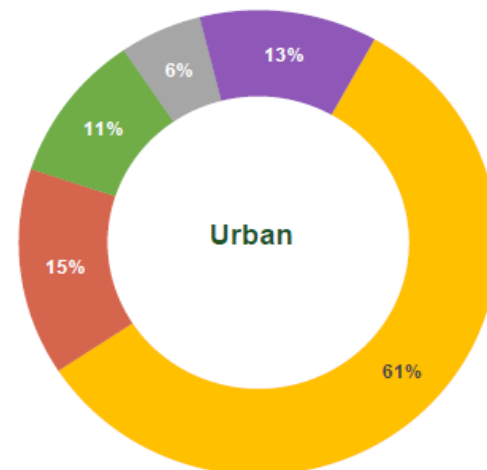
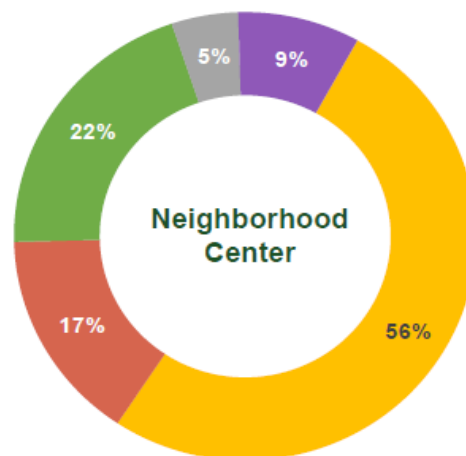
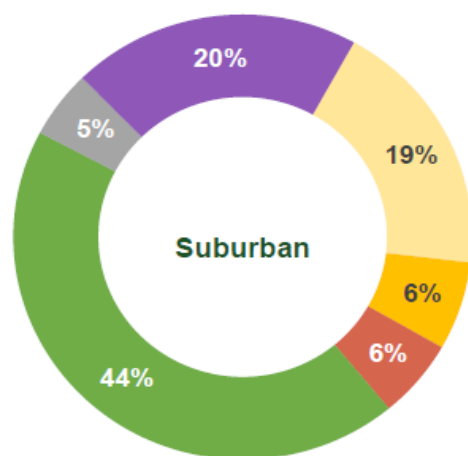
Our design inspiration came from similar developments in city centers around TransLink facilities in British Columbia, Canada. Downtown Richmond which is just south of Vancouver, has seen rapid mixed-use and commercial development near its metro station over the last ten years. Planners there have paid special attention to the design of bike paths and the regulation of higher density development to create human-scale spaces and to promote walkability.

COMPARISON

LAND USE DISTRIBUTION

Single Family
Multifamily
Commercial

Park/Open Space
Other
Parking



	Suburban	Neighborhood Center	Urban
Residential Units	1,324	2,475	9,150
Single Family	503	295	0
Multi-Family	821	2,180	9,150
Commercial Units	1,612	8,422	23,168
Office	1,168	4,422	19,840
Retail	154	1,906	1,902
Restaurant	290	2,094	1,426
Total Units	2,936	10,897	32,318
Population	2,833	5,401	20,007

SHARED POLICIES



Financing

- Tax Increment Finance (TIF) is a method that captures tax gains from a development and the additional revenue is used to fund projects in the proposed district
- Municipal Investments are direct funding options or incentives to reduce the cost for developers to build
- Tax Credits are a reduction in taxes owed to local, state, or the federal government for developments that meet certain qualifications. Popular programs include, New Market Tax Credits, Low-Income Housing Tax Credits (LIHTC), and Historic Rehabilitation Tax Credits.



Community Facilities

- Enable and require Development Impact Fees as a condition for development. This can help finance the construction of new public facilities, such as roads, parks, schools, and libraries.
- Prioritize Public Private Partnerships (PPP) for designing, building, financing, and maintaining certain community facilities, such as hospitals or transit infrastructure. PPP's can reduce project costs and improve long-term operations of public facilities.
- Implement revenue sharing program between parking garage operators and municipality to generate funding for community facilities.



Affordable Housing

- Require set-asides of 20% for affordable housing through the use of incentive zoning, which can include density bonuses for developers.
- Reduce housing stratification and spur the development and preservation of affordable housing through development regulations to be formulated in the comprehensive planning process.
- Support a regional fair share distribution of housing, in general, and affordable housing, in particular, in proximity to employment centers and moderate- and low-wage jobs.
- Incorporate the preservation of existing housing stock as a core policy objective of a comprehensive and coordinated housing strategy.



Station Access

- Work with agencies and private partners to develop a bus boarding and alighting area, which should further incorporate regional busses.
- Plan local bus routes to serve North Brunswick.
- Support high-quality bike and pedestrian infrastructure including racks and lockers in the station.
- Build and maintain an active pedestrian plaza at the base of the station.
- Use high-quality architecture in the design of the rail station to make it a focal point for the community.
- Build adequate parking facilities within walking distance of the rail station, but do not make them directly adjacent to the station itself.



North Brunswick 2040



ACKNOWLEDGEMENTS

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