

3 Land Use Assessment

This chapter assesses current and future land uses in the study area, with a special focus on the relationship between land use and rapid transit.

- **Existing Land Use Break Down** summarizes the proportion and acreage of different land uses within the study area.
- **Glossary of Land Use Categories** defines the more than 30 different land use types.
- **Zoning Analysis** describes the existing zoning in each study area by municipality, with a special emphasis on high-capacity transit-supportive zoning types.
- **Land Assessment** summarizes the acreage within the study area of different land uses most relevant to high-capacity transit: multifamily housing, affordable housing, commercial uses, mixed use, vacant land, and underdeveloped properties.
- **Summary and Opportunities** lays out the most relevant findings for the potential of HCT in this corridor from this study of existing land use.

Existing Land Use Breakdown

The study area spans 46,150 acres and features a diverse mix of land uses. The corridor area is dominated by high-density residential (25%), medium-high density residential (17%), and commercial (8%) uses, collectively occupying 22,750 acres within the study area (see Table 3-1 and Figure 3-1).

Residential land uses account for 44% of the corridor area, with 42% of these residential areas classified as medium-high density or denser (1/4 acre lots or smaller) (see Figure 3-3). Multifamily housing primarily falls under high-density residential, with standalone houses that are duplexes, triplexes, or quadplexes falling under medium-density residential. High-density residential areas are primarily found in Providence, Pawtucket, and Central Falls, while medium-density areas are mainly located in Cranston, Warwick, and Cumberland.

Commercial uses are clustered along the two high-capacity transit corridors, extending along major thoroughfares. Industrial uses are spread across the corridor but are more prevalent in Providence, Warwick, and Cranston, while institutional uses are mainly concentrated in Providence.

Transportation, communication, and utilities account for 13% of the study area, or 6,150 acres. Despite this significant development, 7,400 acres of the study area are covered by forested areas. With less than 1% vacant developable land, future development would rely on infill and reuse of previously developed land.

Rhode Island’s Department of Statewide Planning maintains a dataset containing the land use and land cover across the state. This dataset uses a standardized classification code list and for the purposes of this study, similar categories have been grouped together. The naming conventions used in this study are the same as Rhode Island Department of Planning uses in documentation. A glossary of all land use types follows the summary information on the following two pages.

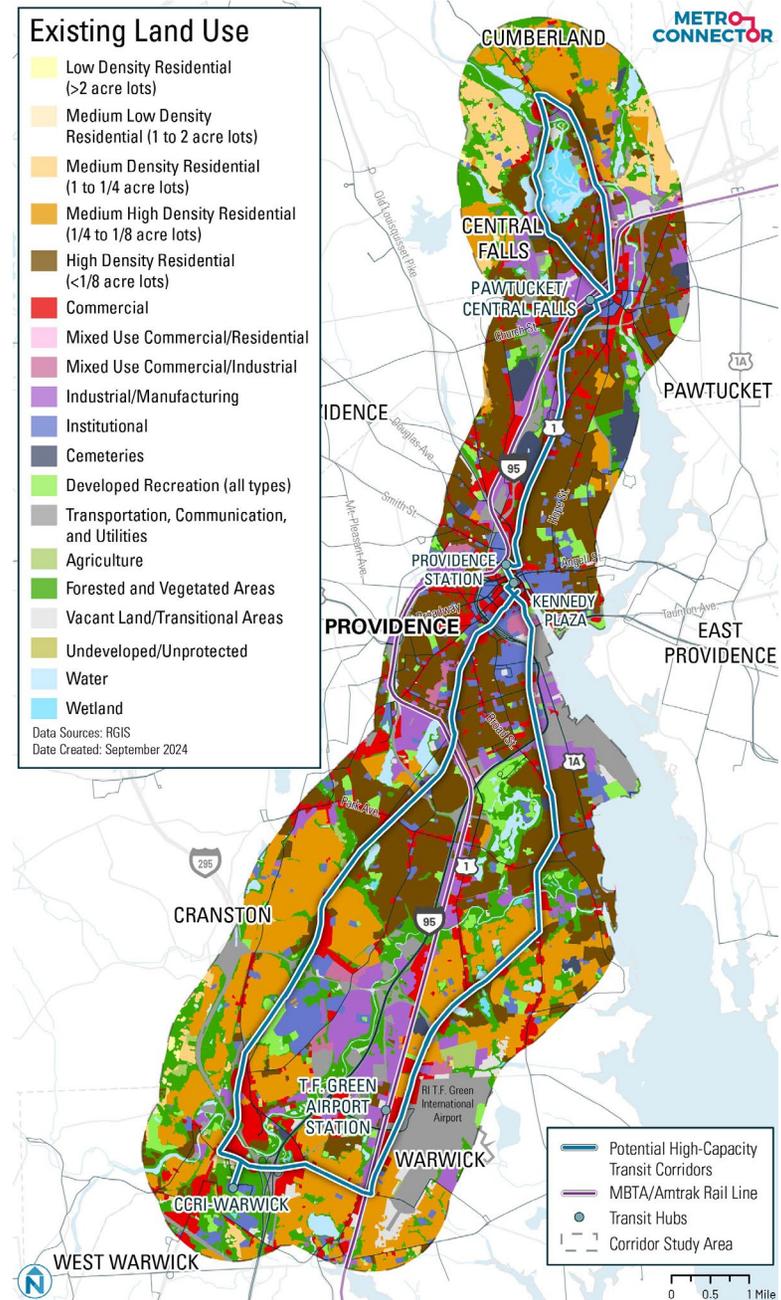


Figure 3-1 Existing Land Use

Land Use	LULC Code	RIGIS LULC Description	Area (Acres)	% Study Area
Residential	111	High Density Residential (< 1/8 acre lots)	11,491	25%
	112	Medium High Density (1/4 to 1/8 acre lots)	7,761	17%
	113	Medium Density Residential (1 to 1/4 acre lots)	955	2%
	114	Medium Low Density Residential (1 to 2 acre lots)	38	<1%
	115	Low Density Residential (>2 acre lots)	27	<1%
		Total Residential	20,271	44%
Commercial	120	Commercial (Sale of products and services)	3,506	8%
		Total Commercial	3,506	8%
Industrial	130	Industrial (Manufacturing, design, assembly, etc.)	2,441	5%
		Total Industrial	2,441	5%
Mixed Use	151	Mixed Use Commercial/Residential	23	<1%
	152	Mixed Use Commercial/Industrial	388	1%
		Total Mixed Use	411	1%
Institutional	170	Institutional	1,978	4%
		Total Institutional	1,978	4%
Transportation, Communication, and Utilities	141	Roads (divided highways >100' plus related facilities)	3,953	9%
	142	Airports (and associated facilities)	902	2%
	143	Railroads (and associated facilities)	244	1%
	144	Water and Sewage Treatments	95	<1%
	145	Waste Disposal (landfills, junkyards, etc.)	145	<1%
	146	Powerlines (100' or more width)	200	<1%
	147	Other Transportation (terminals, docks, etc.)	584	1%
	148	Ground-mounted Solar Energy Systems	28	<1%
		Total Transportation, Communication, and Utilities	6,152	13%
Cemeteries	163	Cemeteries	596	1.3%
		Total Cemeteries	596	1.3%
Developed Recreation	161	Developed Recreation (all recreation)	1,052	2%
		Total Developed Recreation	1,052	2%
Agriculture	210	Pasture (agricultural not suitable for tillage)	139	<1%
	220	Cropland (tillable)	80	<1%
	230	Orchards, Groves, Nurseries	21	<1%
		Total Agriculture	240	<1%
Forested Areas	300	Brushlands (shrub and brush areas, reforestation)	165	<1%
	410	Deciduous Forest (>80% hardwood)	6,745	15%
	420	Softwood Forest (>80% softwood)	43	<1%
	430	Mixed Forest	449	1%
		Total Forested Areas	7,401	16%
Vacant Land and Transitional Areas	162	Vacant Land	340	<1%
	750	Transitional Areas (Urban Open)	154	<1%
		Total Vacant Land and Transitional Areas	494	1%
Undeveloped Open Land	720	Sandy Areas (Not beaches)	1	<1%
	740	Mines, Quarries, and Gravel Pits	125	<1%
		Total Undeveloped Open Land	126	<1%
Water	500	Water	1,217	3%
Wetlands	600	Wetlands	264	1%
		TOTAL	46,150	100%

Table 3-1 Existing Land Use

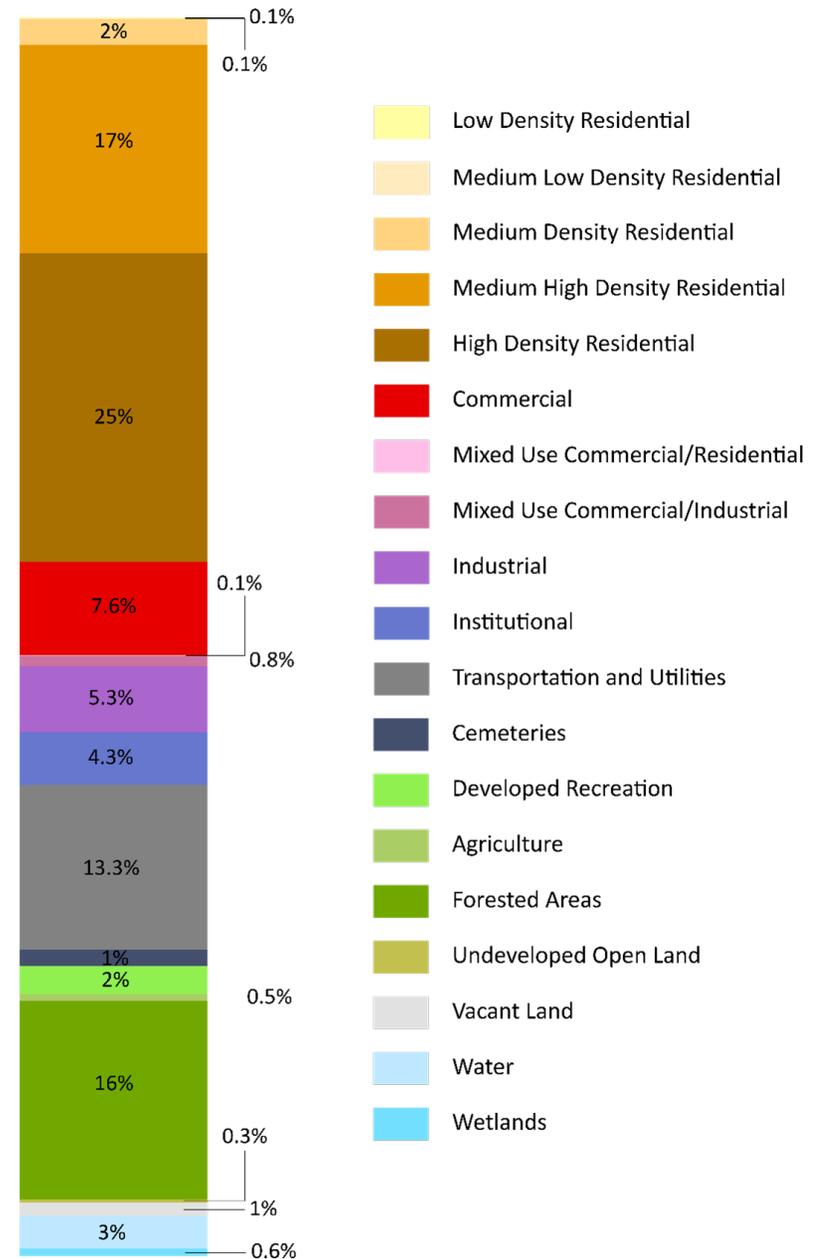


Figure 3-2 Existing Land Use Breakdown

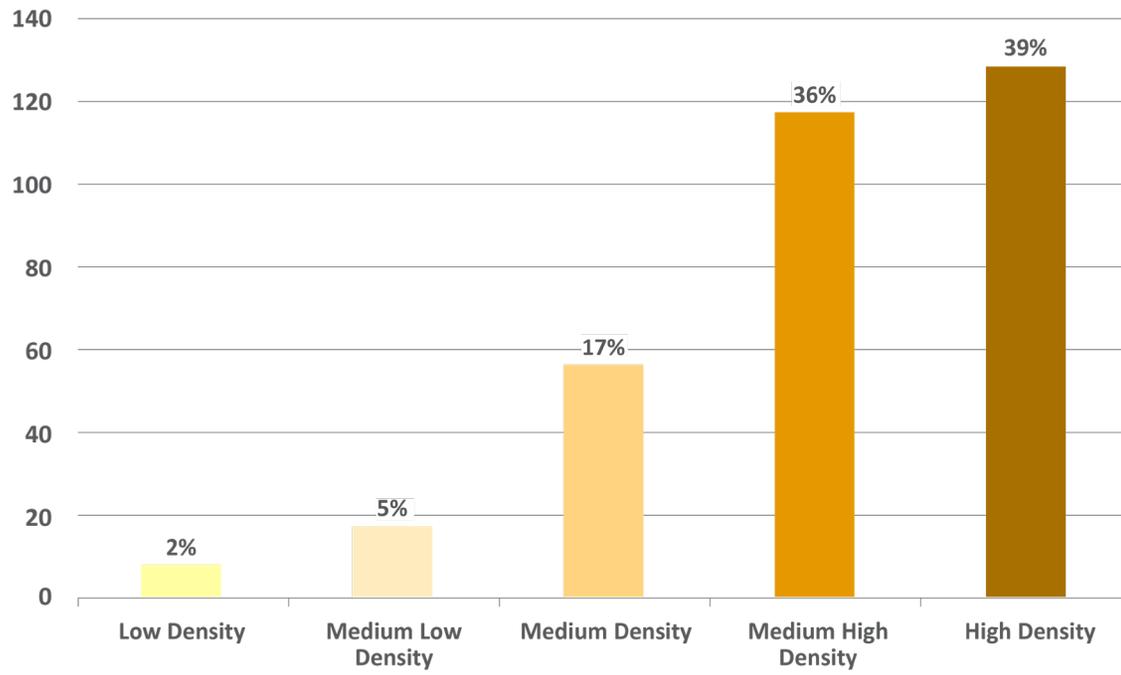


Figure 3-3 Residential Land Use Breakdown

Glossary of Land Use Categories

Residential

High Density Residential: Areas where the residential lot size is less than 1/8 of an acre, typically associated with dense housing developments like apartment buildings, townhomes, or tightly packed single-family homes.

Medium High Density Residential: Residential areas with moderate to high housing density, where lot sizes range from 1/8 to ¼ of an acre, often including suburban homes, duplexes, or townhomes.

Medium Density Residential: Areas where residential lot sizes range from ¼ to 1 acre, often including single-family homes on modestly sized lots with some open space.

Medium Low Density Residential: Residential zones with larger lots, between 1 and 2 acres per lot. These areas often feature larger homes with significant open space, usually in suburban or rural settings.

Low Density Residential: Residential areas with very large lot sizes, over 2 acres per lot. These areas often include rural estates, farms, or homes with significant amounts of open land.

Commercial, Industrial, and Mixed Use

Commercial: Areas primarily used for commerce, including retail shops, hotels, restaurants, and service businesses. This category encompasses business districts, shopping centers, and commercial strips.

Industrial: Land with manufacturing, processing, warehousing, and distribution. This category includes both light and heavy industrial.

Mixed Use Commercial/Residential: Areas where commercial and residential uses coexist, often in the form of buildings with ground-floor commercial space and upper-level residential units, or neighborhoods where residential and business activities are closely integrated.

Mixed Use Commercial/Industrial: Areas that blend commercial and industrial activities, such as business parks or areas where light industrial operations coexist with offices, retail, or service businesses.

Institutional

Institutional: Land used for public or private institutions, including schools, hospitals, government buildings, churches, and similar facilities.

Transportation, Communication, and Utilities

Roads: Divided highways with 100' or more of right-of-way width.

Airports: Land used for aviation, including runways, terminals, and associated infrastructure for both commercial and private air traffic.

Railroads: Areas dedicated to railroad tracks, stations, and related infrastructure for freight or passenger rail systems.

Water and Sewage Treatments: Land used for facilities that treat water or sewage, including treatment plants, pumping stations, and associated infrastructure.

Waste Disposal: Land dedicated to waste management facilities, including landfills, junkyards, incinerators, and recycling centers

Powerlines: Powerlines that are greater than 100' in width.

Other Transportation: Land used for transportation infrastructure not covered under roads, railroads, or airports, such as bus depots, ferries, or transit stations.

Ground-Mounted Solar Energy Systems: Land used for solar energy production via ground-mounted photovoltaic (PM) systems, including solar farms and smaller solar installations on open land.

Cemeteries

Cemeteries: Land dedicated to burial grounds and cemeteries, including associated infrastructure.

Developed Recreation

Developed Recreation: Land used for recreational purposes, including parks, golf courses, playgrounds, sports fields, and other recreational facilities.

Agriculture

Pasture: Non-tillable land used for grazing livestock that is not suitable for cultivation due to soil conditions, topography, or other factors.

Cropland: Tillable agricultural land that is suitable for tilling and planting crops, including row crops, grain fields, and similar productive uses.

Orchards, Groves, Nurseries: Land used for cultivating fruit trees, groves, or nursery plants, often including orchards or other perennial agricultural operations.

Forested Areas

Brushlands: Areas dominated by shrubs, small trees, or brush, often found in areas recovering from disturbance or where reforestation is taking place.

Deciduous Forest: Forest areas where more than 80% of the trees are deciduous (hardwood), typically comprising species like oaks, maples, and birches.

Softwood Forest: Forest areas where more than 80% of the trees are coniferous (softwood), such as pines, spruces, or firs.

Mixed Forest: Forested areas where neither deciduous nor softwood species dominate, with a roughly equal mix of hardwood and softwood trees.

Vacant Land and Transitional Areas

Vacant Land: Land that is not currently being used for any active purpose, such as unused urban lots, abandoned agricultural land, or undeveloped parcels.

Transitional Areas: Land that is undergoing significant change in use, such as areas under construction, redevelopment, or undergoing environmental restoration.

Undeveloped Open Land

Sandy Areas: Non-beach sandy areas, such as inland sand dunes or other sandy landscapes that are not associated with coastal environments.

Mines, Quarries, and Gravel Pits: Areas used for the extraction of minerals, rocks, or other materials, including active and inactive mines, quarries, and gravel pits.

Water

Water: Bodies of water, including lakes, ponds, rivers, streams, and reservoirs.

Wetlands

Wetlands: Land that is saturated with water, either permanently or seasonally, and supports aquatic vegetation. This includes swamps, marshes, and bogs.

Zoning Analysis

Cumberland

In Cumberland, the parcels around the HCT corridor include commercial, residential, and industrial uses. The residential uses are designated under the R-2 and R-3 districts. The R-2 district allows medium-density development, including single-family and two-family units. While the R-3 district allows for high-density development, including single-family, two-family, and multi-family units. The R-2 districts are more prevalent around the HCT corridor than the R-3 districts.

Most of the commercial uses are designated within the Limited Commercial District (C-1), which accommodates retail, services, and office establishments catering to neighborhood needs. Additionally, some parcels fall under the General Commercial District (C-2), which permits larger-scale commercial activities. The area also has a significant presence of light industrial zones, supporting non-hazardous manufacturing, assembly, and storage operations.

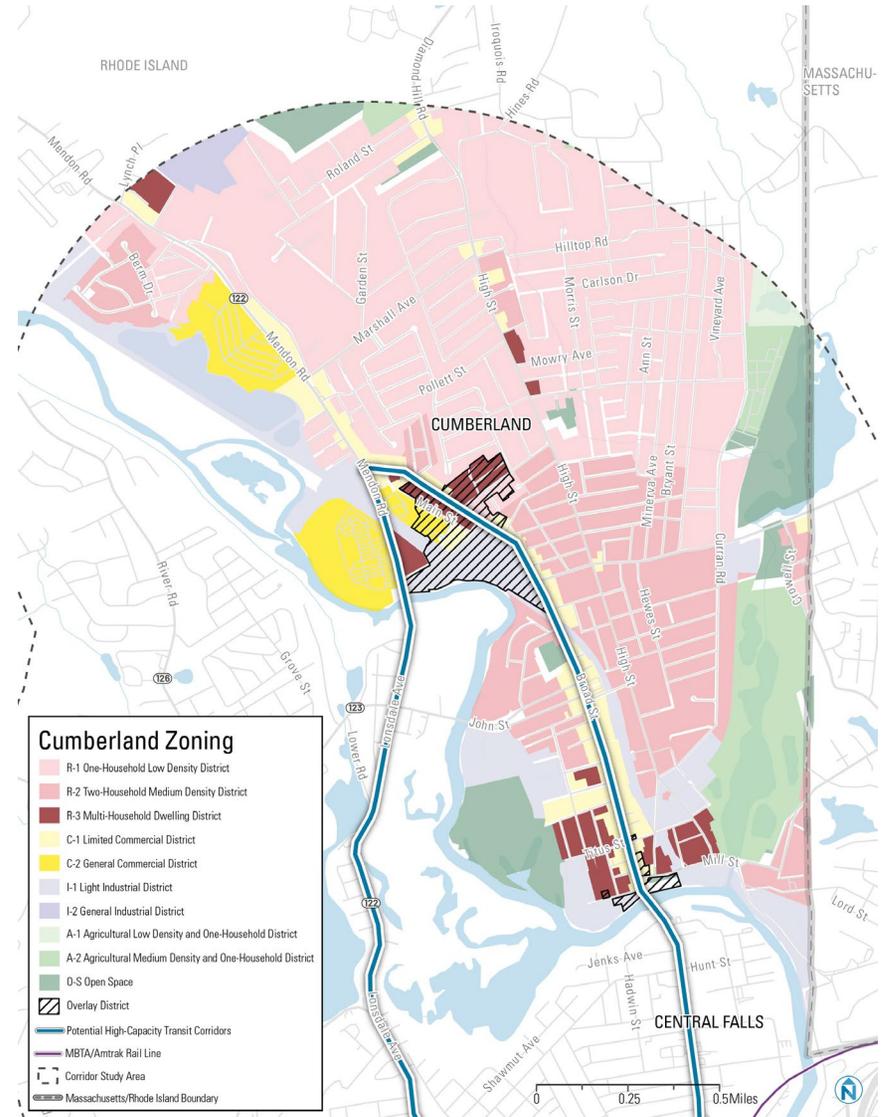


Figure 3-4 Cumberland Zoning

Central Falls

In Central Falls, the HCT corridors are surrounded by commercial, industrial, residential, and mixed-use zones. The commercial uses are designated under the Limited Commercial District (C-1), allowing retail, services, and offices, and the General Commercial District (C-2), allows larger commercial businesses. The Commercial Downtown (C-D) District aims to revitalize the downtown area, promote a mix of business, financial, institutional, public, quasi-public, cultural, and residential (upper floors only) uses.

The residential uses are mainly zoned under the Multi-Household Dwelling (R-3) District to support medium-density residential development, allowing single-family, two-family, and multi-family units.

There is a large presence of industrial uses categorized under the Industrial (M-1) District, which supports general manufacturing and assembly without hazardous impacts, and the Heavy Industrial (M-2) District, designated for heavy industrial uses that may be hazardous or incompatible with residential uses.

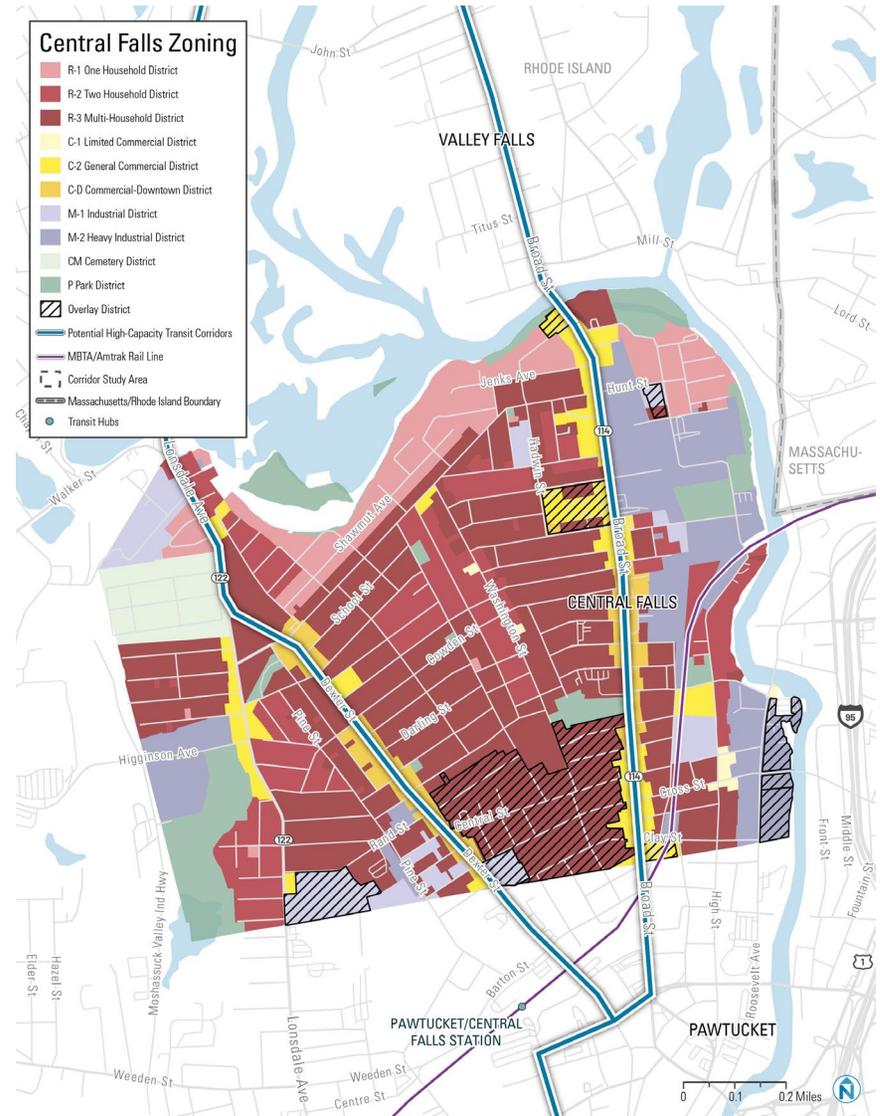


Figure 3-5 Central Falls Zoning

Pawtucket

The parcels around the HCT corridor in Pawtucket mostly include commercial, residential, and industrial uses. Commercial uses are designated under the Commercial General (CG) District, which allows retail, services, and offices. Moreover, the Commercial Downtown (CD) District includes a mix of uses (commercial, residential, institutional, etc.) and aims to revitalize the downtown area. The Conant Thread (CT) District adjacent to the CD District promotes the active reuse of historic mill structures around the Pawtucket-Central Falls Commuter Rail Station. This district aims to create diverse housing and job opportunities by leveraging its proximity to public transportation, aligning with the principles of transit-oriented development (TOD). The CT District also promotes light industrial uses that align with the district's mixed-use vision.

Most of the residential uses around the HCT corridor are designated under the Residential Multi-family (RM) District, which allows single-family and multi-family dwellings. Around the downtown area, residential uses are zoned under the Residential Elevator (RE) District, allowing high-density residential development.

The Industrial Open (MO) District is designated for light industrial activities such as assembly, manufacturing, and storage.

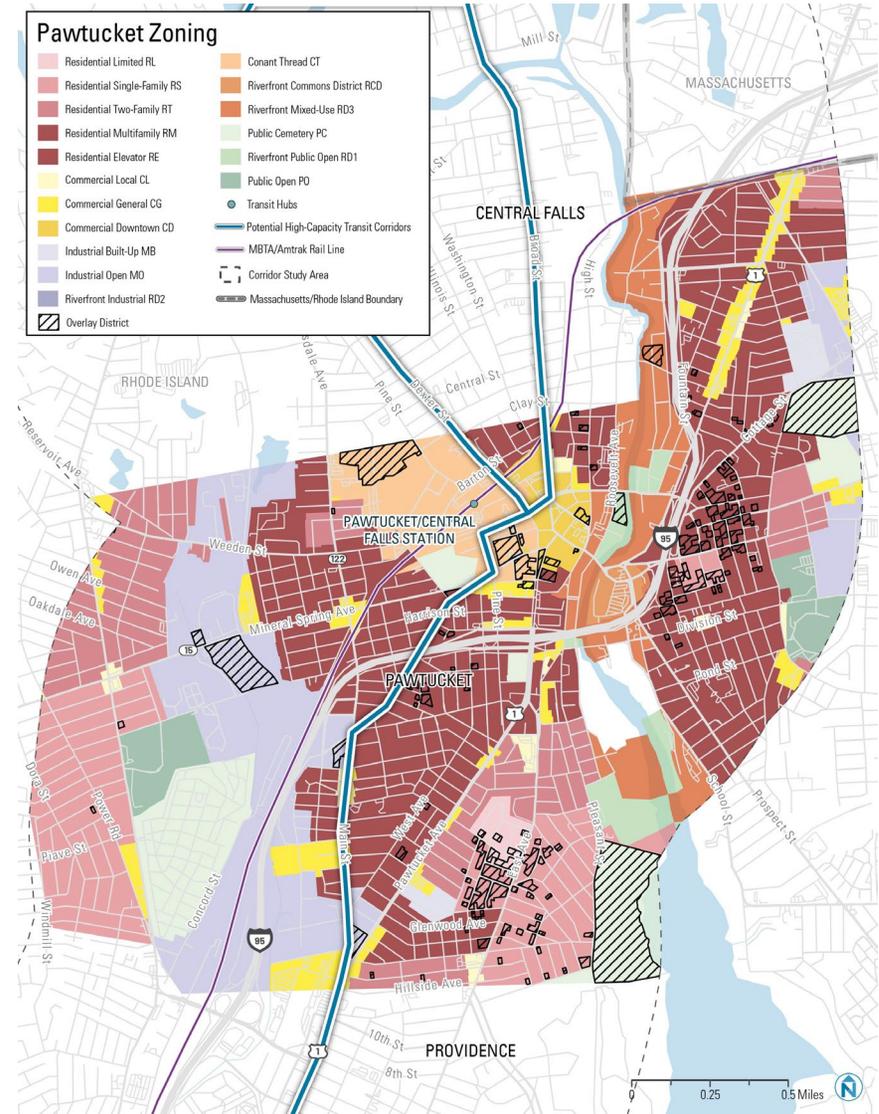


Figure 3-6 Pawtucket Zoning

Providence

The parcels close to the High-Capacity Transit corridors in Providence are mainly zoned for commercial, light industrial, and high-density residential uses. The majority of the commercial uses along the transit corridors are designed to create key commercial nodes and support large-scale businesses that manage high commercial activity. These commercial uses are located close to residential areas, promoting mixed-use zones and local economic growth. Heavy commercial uses (including motor-related businesses, outdoor storage, logistics hubs, etc.) are located near industrial zones to promote economic synergy and land use optimization to reduce traffic congestion in residential or pedestrian-focused areas.

Residential zones near the transit corridors predominantly include high-density multifamily dwellings with easy access to retail, services, offices, and other compatible uses. These zones are typically set back from the transit corridors to reduce the impact of traffic and noise. Low-to-medium density residential zones, including single-family and two-family homes, are mostly located away from the transit lines.

Downtown Providence is a mixed-use area including a variety of commercial, institutional, public/quasi-public, residential, light industrial, and other compatible uses. This area, designated as the downtown district, has six sub-districts allowing for buildings heights ranging from 45 feet to 300 feet. Most of the taller buildings are located in the heart of the downtown area, with heights gradually decreasing in the outer sub-districts. This approach promotes contextual development, ensuring that the buildings in the downtown district align with the surrounding neighborhoods.

Light industrial zones are strategically placed closer to commercial and residential areas, where they act as a transitional buffer between the heavy industrial areas and residential neighborhoods. In contrast, the heavy industrial zones are located farther from residential areas, deliberately positioned to minimize their impact on residents' quality of life.

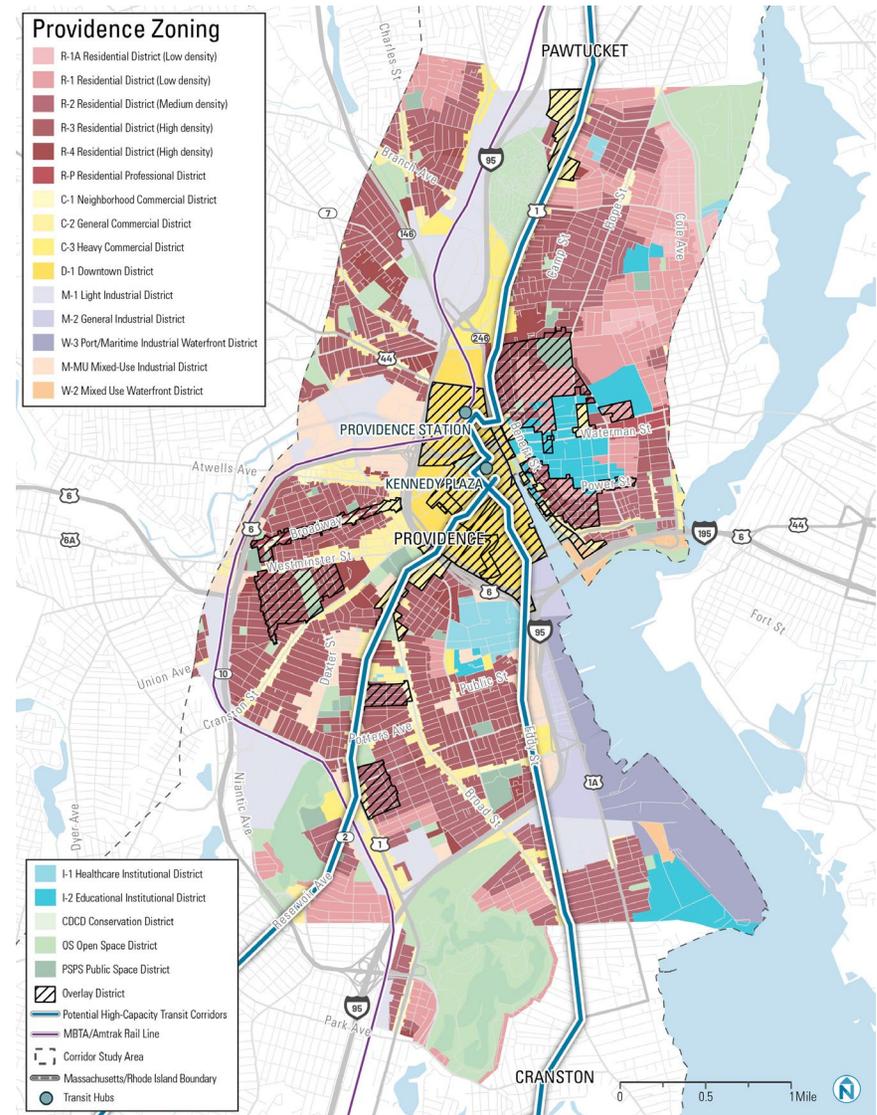


Figure 3-7 Providence Zoning

Cranston

In Cranston, the land use around the transit corridor is primarily a mix of commercial and residential zones, promoting both local economic activity and accessible living conditions. The commercial zones designated as C-1 and C-4 districts accommodate offices and highway businesses, such as retail stores, restaurants, service stations, hotels/motels, and storage facilities. Meanwhile, the C-2 and C-3 districts focus on neighborhood and general businesses, ensuring residents have easy access to essential services. Moreover, the C-1, C-2, and C-3 districts allow for mixed-use development, featuring residential units above ground-floor commercial spaces.

Residential zones around the transit corridor mostly include districts allowing single-family (A-6 and A-8) and multi-family (B-1 and B-2) units. These districts encourage higher density and provide more housing options with proximity to commercial and transit services.

Industrial uses are located away from the transit corridors, particularly near the borders with Providence, Warwick, and West Warwick to reduce the impact on residential areas.

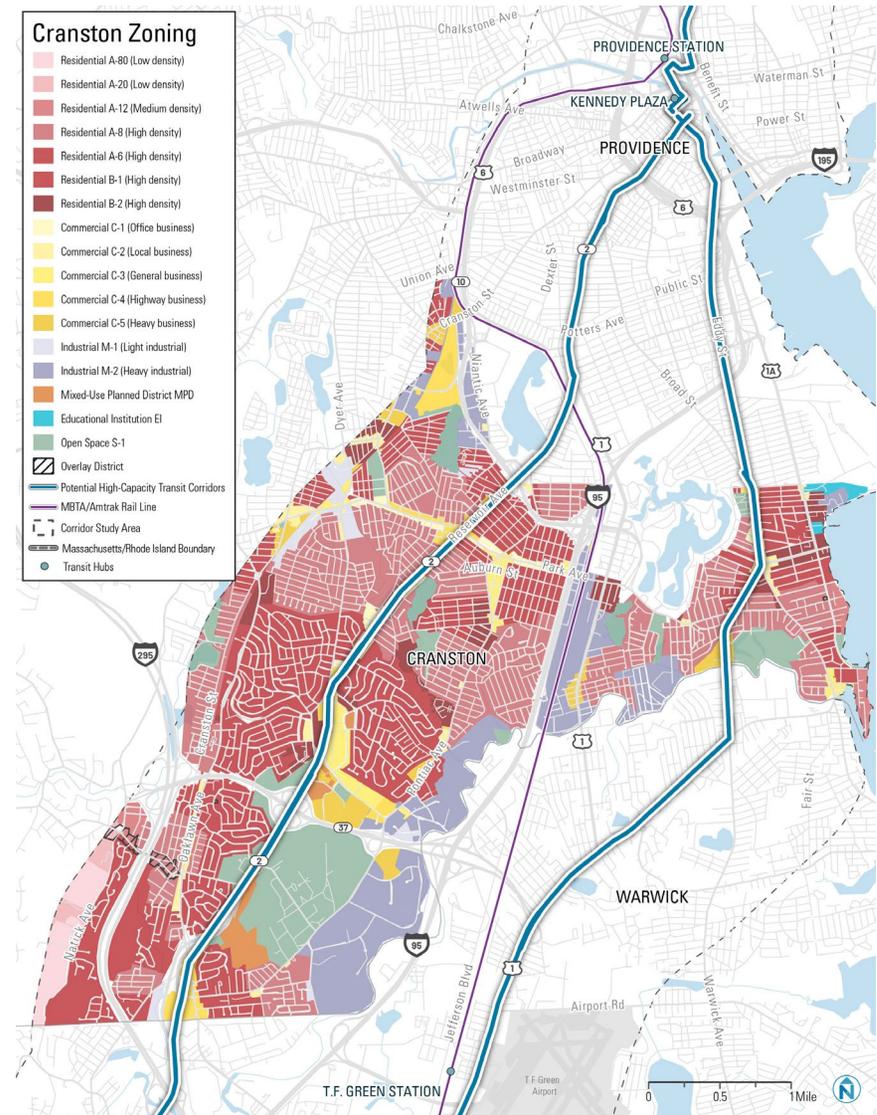


Figure 3-8 Cranston Zoning

Warwick

The parcels around the HCT corridor in Warwick are mainly zoned for single-family homes, commercial, and light industrial uses. Commercial uses are designated under the general business district zoning, which allows retail, services, office, and automotive-related uses. The single-family homes that are zoned under the A-10 residential district are restricted to one dwelling per lot—each lot required to have a minimum area of 7,000 square feet—promoting lower density and inefficient land use.

The City Center features two key areas: the Gateway District and the Intermodal District. The Gateway District accommodates both transportation-related and general commercial uses, prioritizing high-quality development and efficient vehicular circulation. Meanwhile, the Intermodal District, located near the Intermodal facility and Airport terminal, is designed to be a dynamic regional hub. It blends retail, commercial, office, and residential uses, emphasizing strong pedestrian and vehicle connectivity, streamlined traffic flow, and well-planned infrastructure to support high-density development.

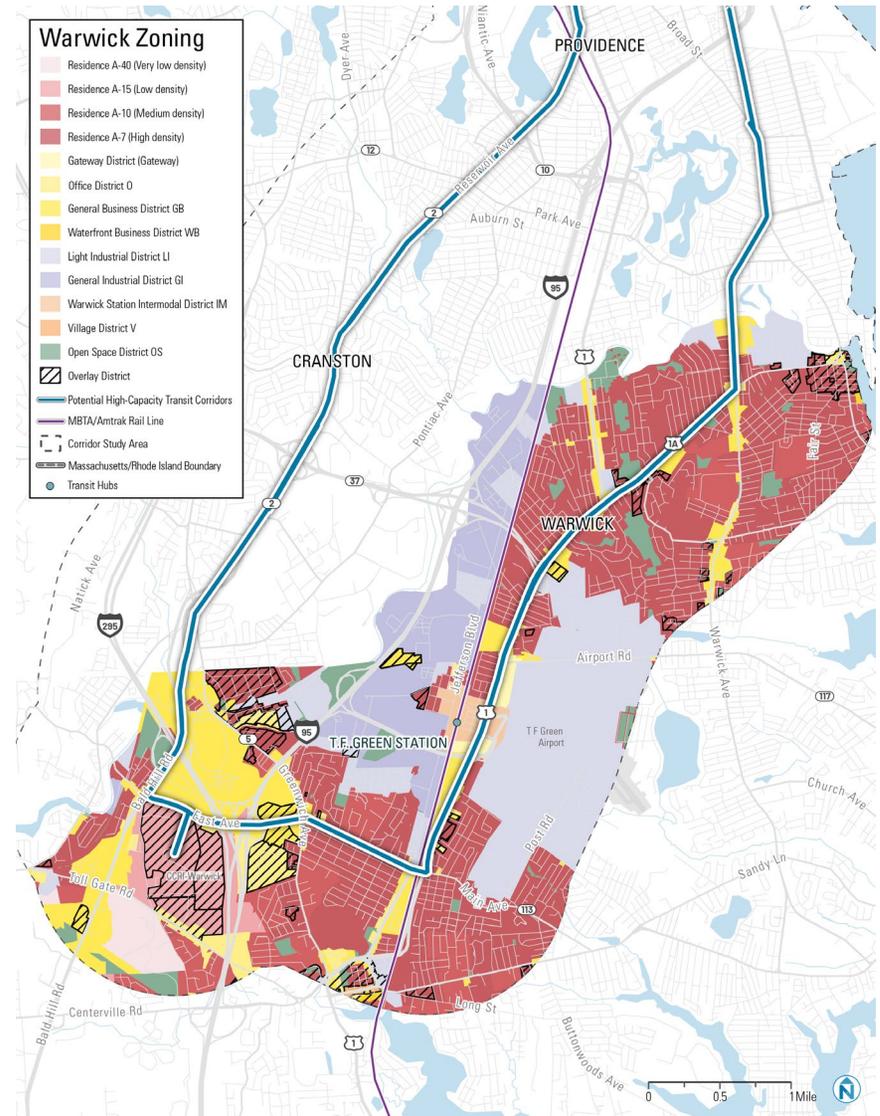


Figure 3-9 Warwick Zoning

Land Assessment

Multifamily Housing

Only 1,600 acres (3%) of the study area contain multifamily housing -- residential properties with more than two units. Providence has the highest number of multifamily properties, followed by Pawtucket and Cranston.

Table 3-2 Multifamily Housing by Municipality ²

Town	Land Area (Acres)	% of Corridor Area
Providence	622	1%
Cranston	315	1%
Warwick	35	<1%
Cumberland	55	<1%
Pawtucket	380	1%
Central Falls	179	<1%
Total	1,586	3%

² Source: RIGIS (2020)

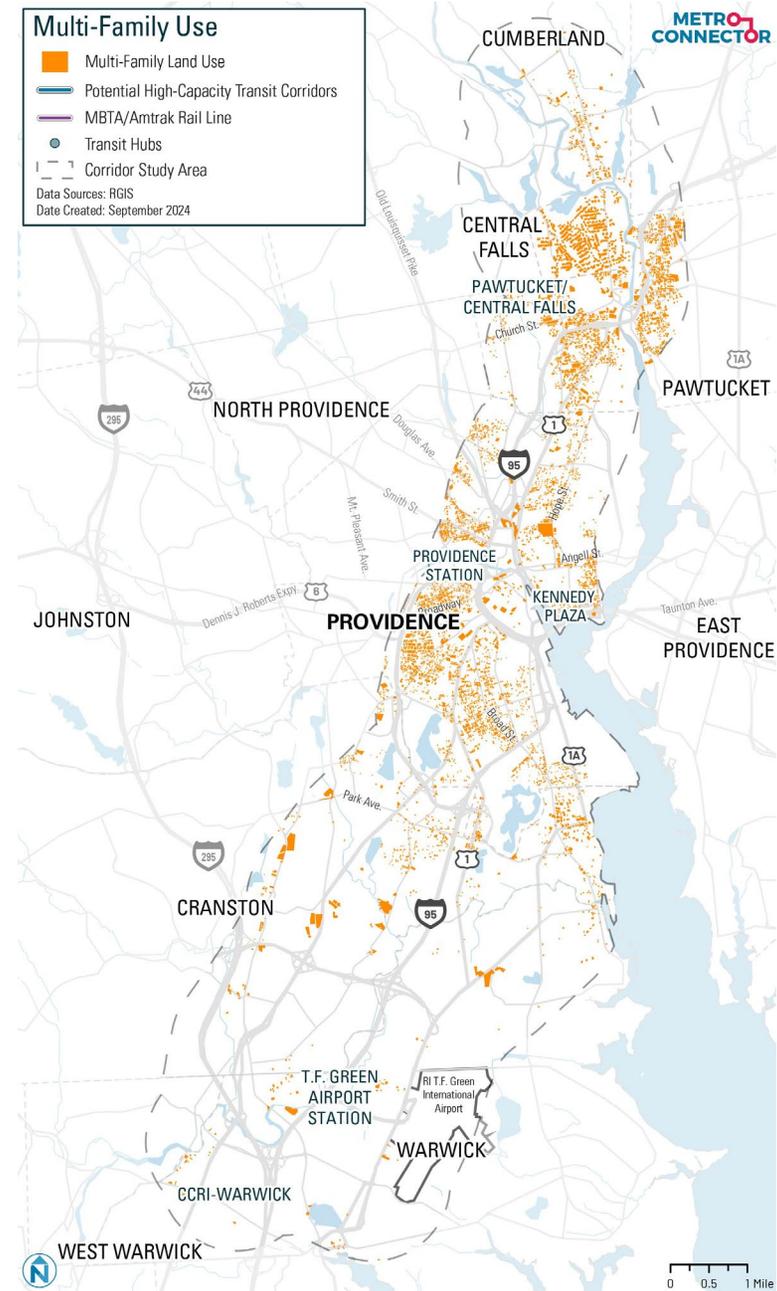


Figure 3-10 Multifamily Use

Affordable Housing

Affordable housing refers to housing on which occupants spend no more than 30% of their income on expenses like rent or mortgage payments, utilities, and maintenance. According to RIHousing, a unit qualifies as affordable if it receives subsidies from federal, state, or local sources and maintains an affordability restriction for at least 30 years. Access to affordable housing is crucial for low- and moderate-income families, as it ensures stable living conditions and allows households to dedicate sufficient resources to other essential needs.

The distribution of affordable units within the study area reveals a significant concentration in Providence with 156 properties including 10,648 units, indicating a high demand and the city's efforts to address housing needs. In unit count, Providence is followed by Pawtucket with 2,525 units across 43 properties. In contrast, Warwick and Cranston, despite their larger populations compared to Pawtucket, offer fewer affordable units. Cumberland and Central Falls have the lowest number of affordable units overall. Additionally, Providence and Pawtucket have a higher number of affordable units designated for families, whereas the other cities/towns mainly offer affordable housing for elderly and disabled populations.

Table 3-3 Affordable Housing Units by Municipality ³

Town	No. of Properties	Total No. of Units
Providence	156	10,648
Cranston	16	1,587
Warwick	22	1,755
Cumberland	11	774
Pawtucket	43	2,525
Central Falls	14	681
Total	262	17,940

³ Source: National Housing Preservation Database

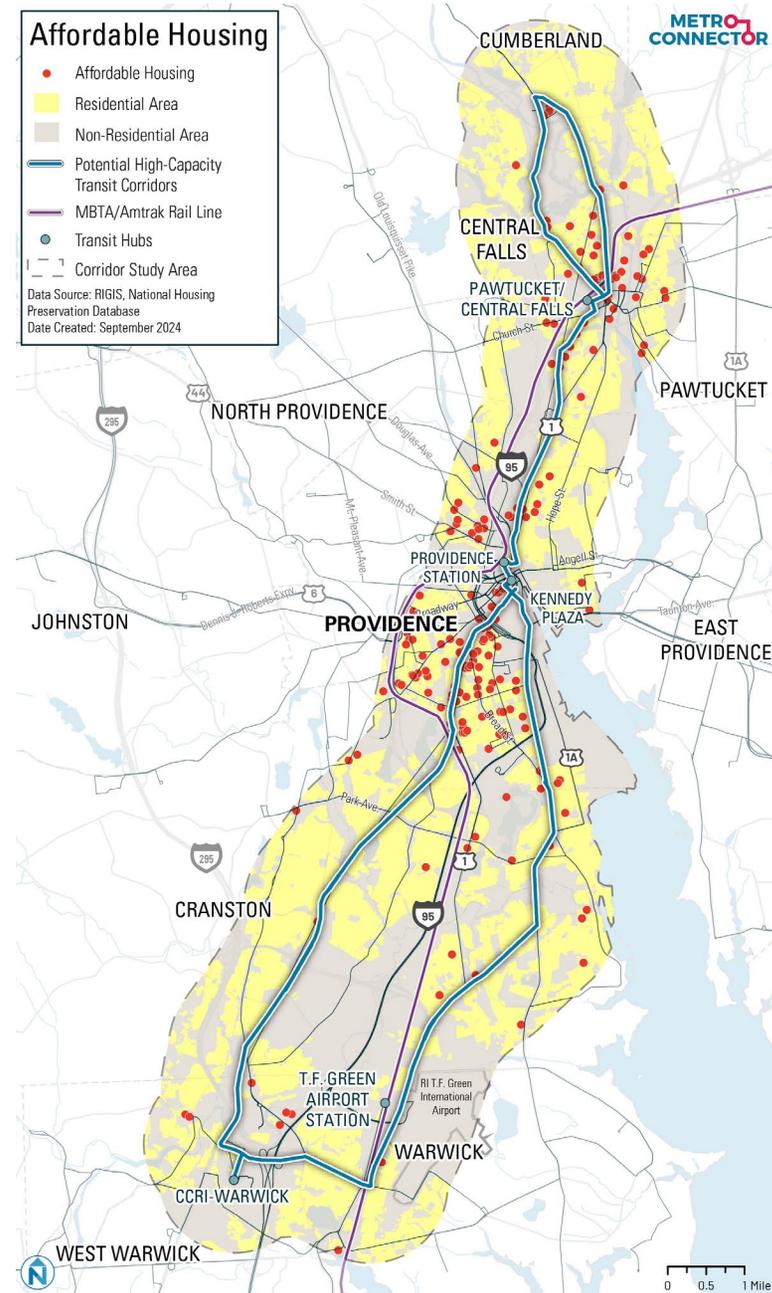


Figure 3-11 Affordable Housing

Commercial Uses

Commercial use land, or places where goods and services are bought and sold, can be an indicator of destinations and jobs. Warwick has the highest commercial acreage within the study area, followed by Providence which serves as a central hub for business activities.

Table 3-4 Commercial Land Use by Municipality⁴

Town	Land Area (Acres)	% of Corridor Area
Providence	968	2%
Cranston	574	1%
Warwick	1,346	3%
Cumberland	102	<1%
Pawtucket	368	<1%
Central Falls	122	<1%
Total	3,480	7.5% ⁵

⁴ Source: RIGIS (2020)

⁵ The remaining 0.5% of the commercial uses are in Lincoln and West Warwick

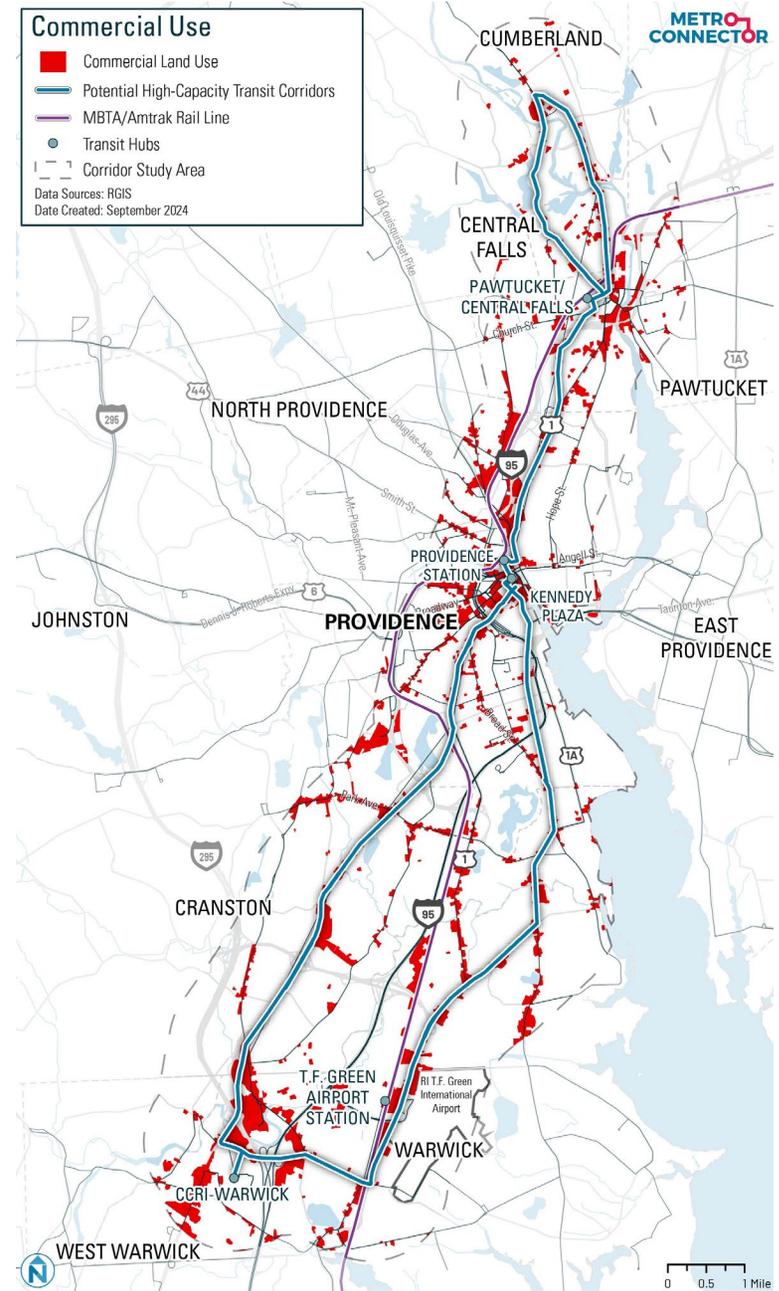


Figure 3-12 Commercial Land Use

Industrial Uses

Industrial land is used for manufacturing, warehousing, distribution, and processing. Warwick has the most industrial use land in the study area, followed by Cranston and Providence. Industrial uses often require on-site labor, which means that industrial sites can be major job hubs, depending on occupant and development size.

Table 3-5 Industrial Land Use by Municipality⁶

Town	Land Area (Acres)	% of Corridor Area
Providence	429	1%
Cranston	459	1%
Warwick	579	2%
Cumberland	63	<1%
Pawtucket	335	1%
Central Falls	194	<1%
Total	2,059	6.4%

⁶ Source: RIGIS (2020)

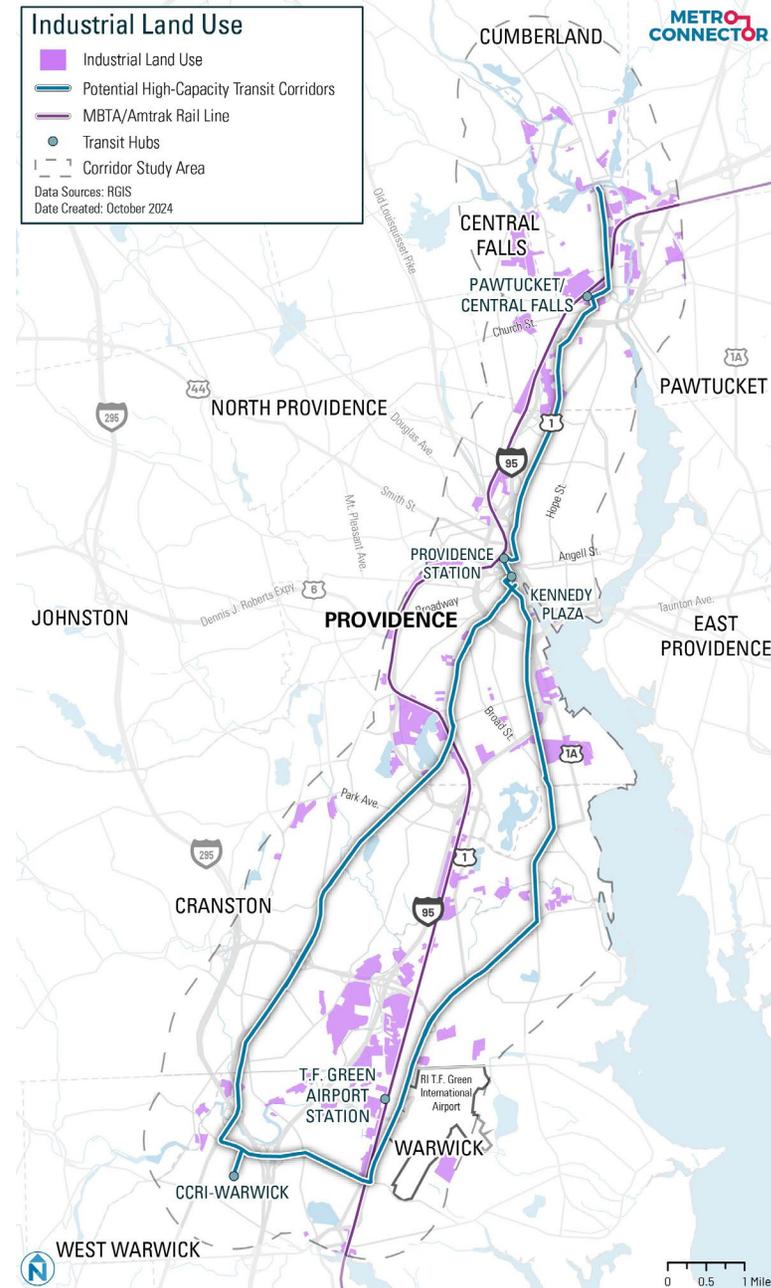


Figure 3-13 Industrial Land Use

Mixed Use Commercial and Residential/Industrial

Mixed use development is ideal for transit-oriented development, as this pairs commercial with either residential or industrial uses. This type of development can take the form of retail stores at the street level with apartments built on the floors above. The study area does not have a significant amount of mixed-use land.

Providence, for example, has many downtown locations that are zoned for mixed-use commercial and residential, but do not utilize this and are single use only.

Table 3-6 Mixed Use Land by Municipality⁷

Town	Land Area (Acres)	% of Corridor Area
Providence	204	<1%
Cranston	89	<1%
Warwick	33	<1%
Cumberland	0	<1%
Pawtucket	7	<1%
Central Falls	8	<1%
Total	339	1%

⁷ Source: RIGIS (2020), Tax Assessment Data

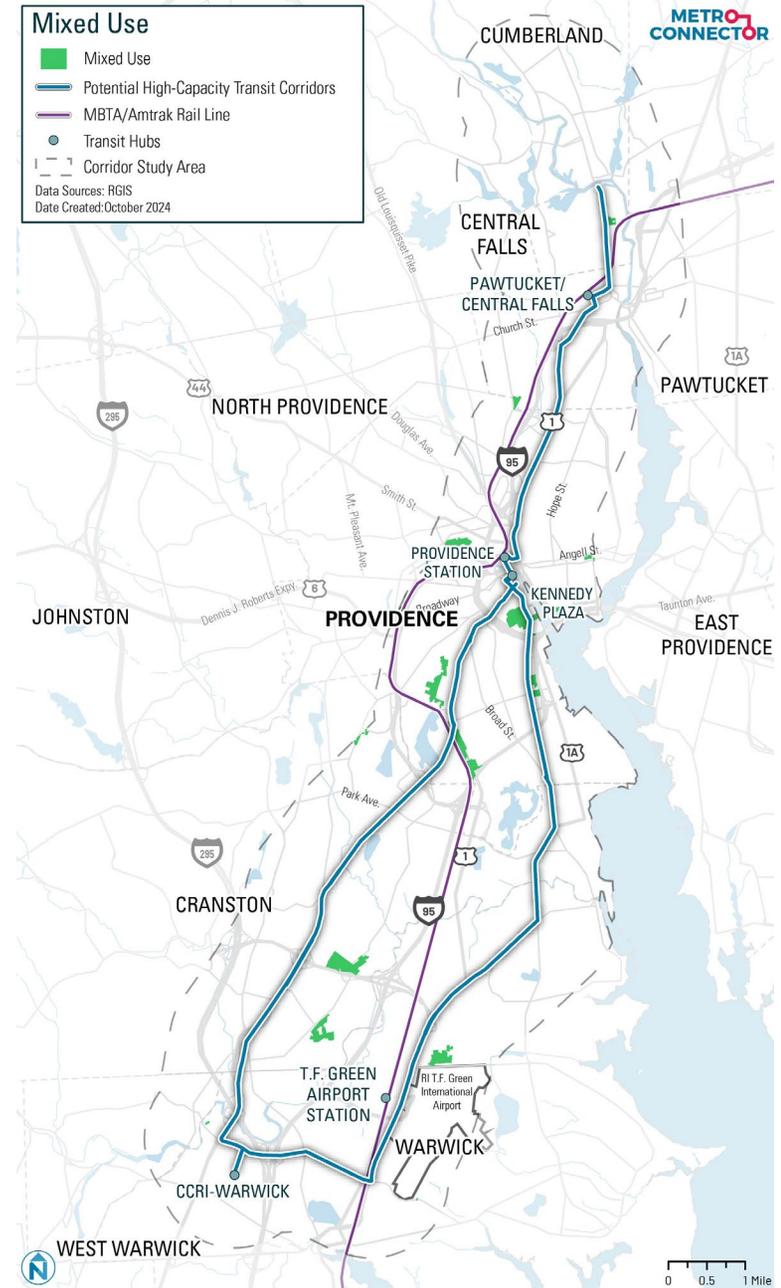


Figure 3-14 Mixed Use Residential/Commercial Land

Vacant Land

Per the State's Property Type Classification, vacant land can be categorized as developable, potentially developable, or undevelopable. While the overall availability (3%) of vacant land is limited within the study area, Providence and Warwick have relatively more prospects for new development. Both cities have more commercial vacant land than residential. On the other hand, Cranston, Cumberland, and Pawtucket, each with less than 1% vacant land, call for more strategic planning and careful prioritization of land use to fully realize their development potential. Across the study area, commercial vacant land slightly exceeds residential vacant land.

Table 3-7 Vacant Land by Municipality⁸

Town	Residential Vacant Land Area (acres)	Commercial Vacant Land Area (acres)	Total Vacant Land Area (acres)	% of Corridor Area
Providence	119	314	433	1%
Cranston	280	110	390	<1%
Warwick	117	140	257	1%
Cumberland	104	17	121	<1%
Pawtucket	14	75	89	<1%
Central Falls	9	8	17	<1%
Total	643	664	1,307	3%

⁸ Source: RIGIS (2020), Tax Assessment Data

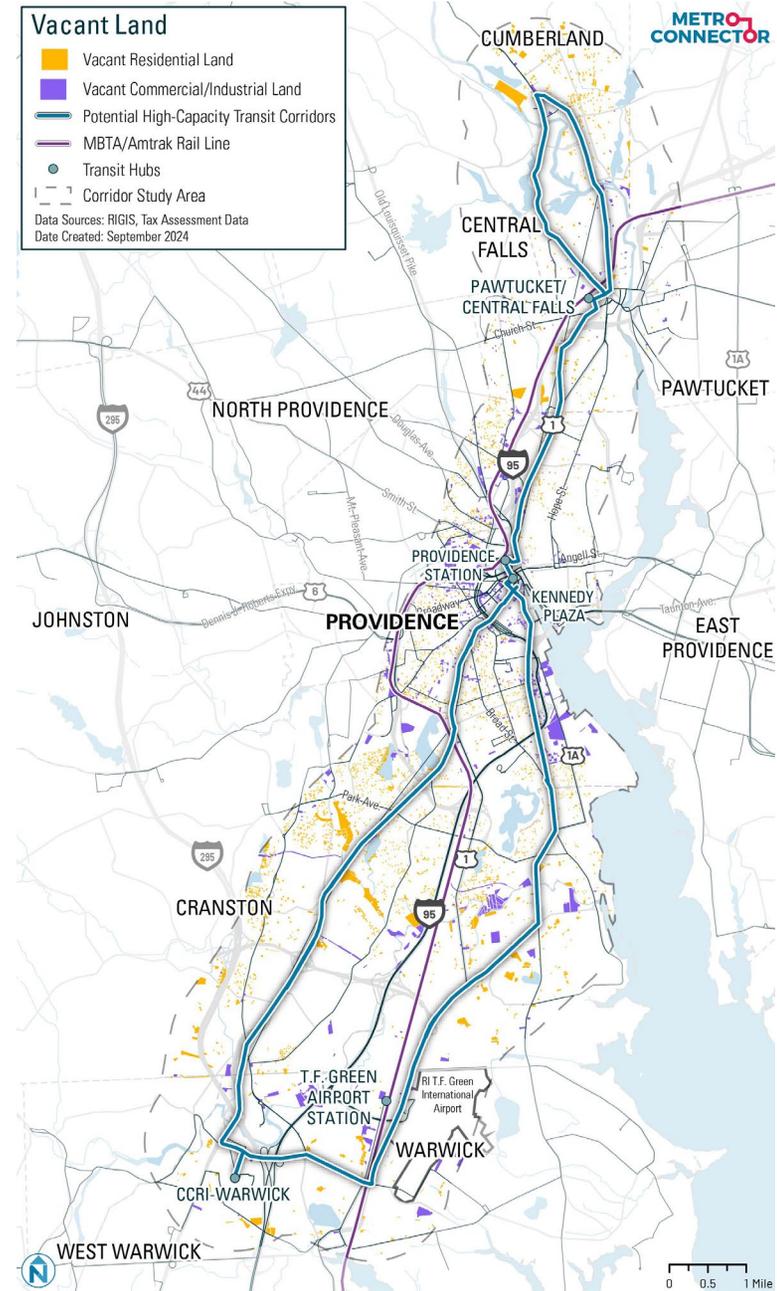


Figure 3-15 Vacant Land

Land Availability – Underdeveloped Properties

The assessed value of a property, assigned by local authorities, determines property taxes and calculates the owner's annual tax liability. This value is a percentage of the property's market value and is set through an appraisal process conducted by local assessors, who evaluate various factors such as recent sales, property conditions, and improvements.

The total assessed value is the sum of the assessed land value and the assessed building value. If the building value is 50% or less than the land value, it indicates that the property may be underdeveloped and has potential for redevelopment or expansion. According to data from the Tax Assessor's office for cities along the HCT corridor, Providence has more than 2,600 underdeveloped properties, while Warwick follows with 2,235. There are about 7,500 underdeveloped properties in the study area.

Table 3-8 Number of Underdeveloped Properties by Municipality⁹

Town	Number of Underdeveloped Properties
Cranston	203
Providence	3,312
Warwick	2,074
Cumberland	762
Pawtucket	962
Central Falls	238
Total	7,551

⁹ Source: Tax Assessor's Data

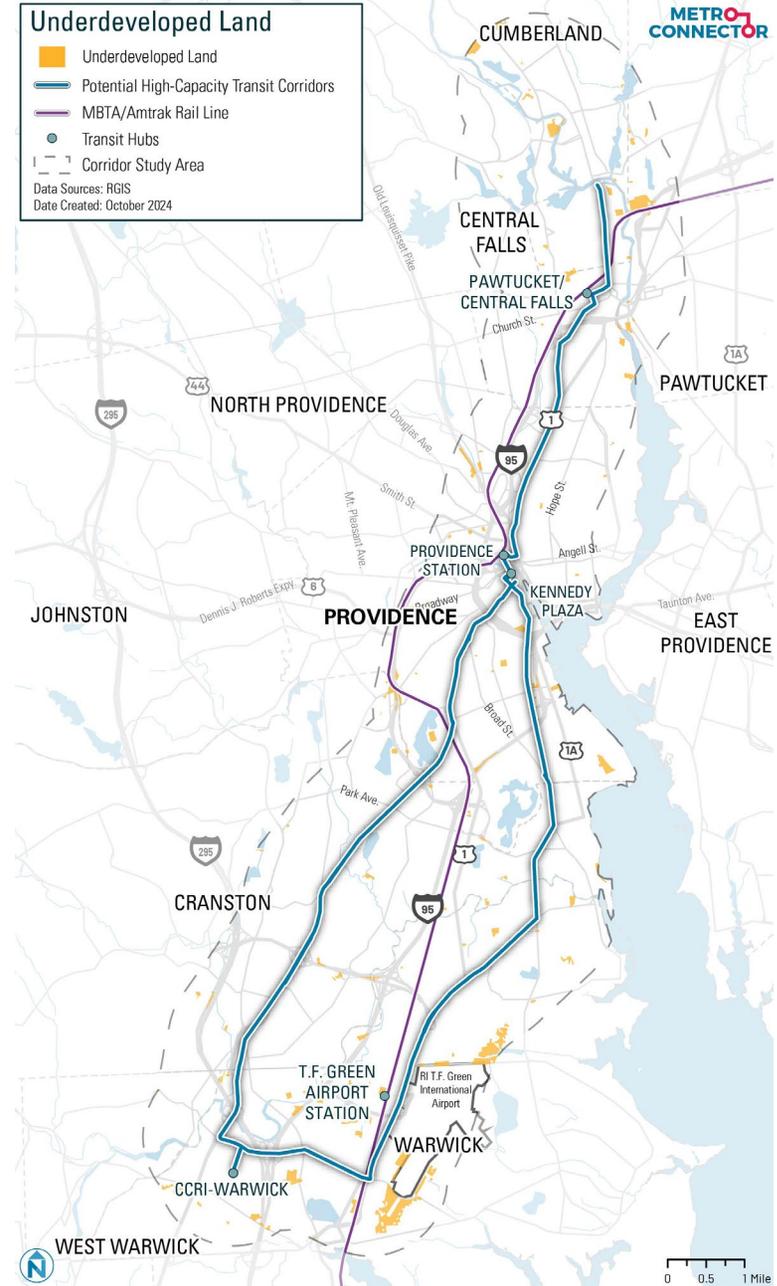


Figure 3-16 Underdeveloped Properties

Summary and Opportunities

The Land Use and Zoning Analysis chapter considers the relationship between land use and rapid transit. The analysis found significant swaths of transit-supportive land uses—dense commercial and residential areas—along the study corridors in each municipality. Opportunities for infill development along the study corridors were also identified. Major existing land use-related opportunities related to the potential for high-capacity transit in the study area include:

- Nearly half (44%) of the existing land use within the study area is dedicated to residential uses, and of these residential land uses, medium and high-density zoning account for 75% of the total area.
- Existing land use within the study area is diverse, with the highest proportion of existing land dedicated to residential; transportation, communication, and utilities; commercial; and industrial. About 16% of existing land is forested.
- Commercial uses are concentrated heavily along study corridors across all municipalities.
- There are over 7,500 underdeveloped properties in the study area, approximately 70% of which are in Providence and Warwick.
- There may exist an opportunity to increase the supply of affordable housing the study area through the development of additional multifamily housing. Today, only 3% of the study area is occupied by multifamily housing.
- With less than 1% vacant developable land across the entire study area, future development will primarily rely on infill and reuse of previously developed land.

Major zoning-related opportunities related to the potential for high-capacity transit in the study area include:

- Cumberland is primarily zoned for higher density residential uses along with a relatively large amount of parks and open space acreage. Zoning along the study corridors is primarily for commercial and medium-high density residential with smaller sections of light industrial uses.
- Central Falls is primarily zoned for residential, industrial, and commercial use. The immediate areas surrounding the study corridors are mainly commercial.
- Pawtucket is zoned for a wide variety of uses, with significant portions allocated for medium-high-density residential, mixed use, commercial, and industrial uses. The area along the study corridors is primarily high-density residential, with smaller patches allowing for mixed use development, commercial, and industrial uses.
- Providence’s zoning features the largest and most dense commercial downtown in the study area surrounded by residential, industrial, and institutional zones.
- Cranston is predominantly zoned for medium-high density residences along with pockets in the study area allowing for mixed use development, open space, and commercial use.
- Warwick is zoned for a mix of industrial, residential, and commercial uses, with a relatively large share of the town's footprint within the study area consumed by the T.F. Green Airport. A similar mix of uses exists along the path of the study corridors before they terminate in the City Center, which features two mixed-use districts designed to allow for convenient access to commerce and residence alike.
- Higher residential density is needed within the study area in Warwick and Cranston to support sustainable ridership.
- High-capacity transit corridors provide municipalities with an opportunity to rezone the areas surrounding the corridors to allow higher density residential and mixed-use development.