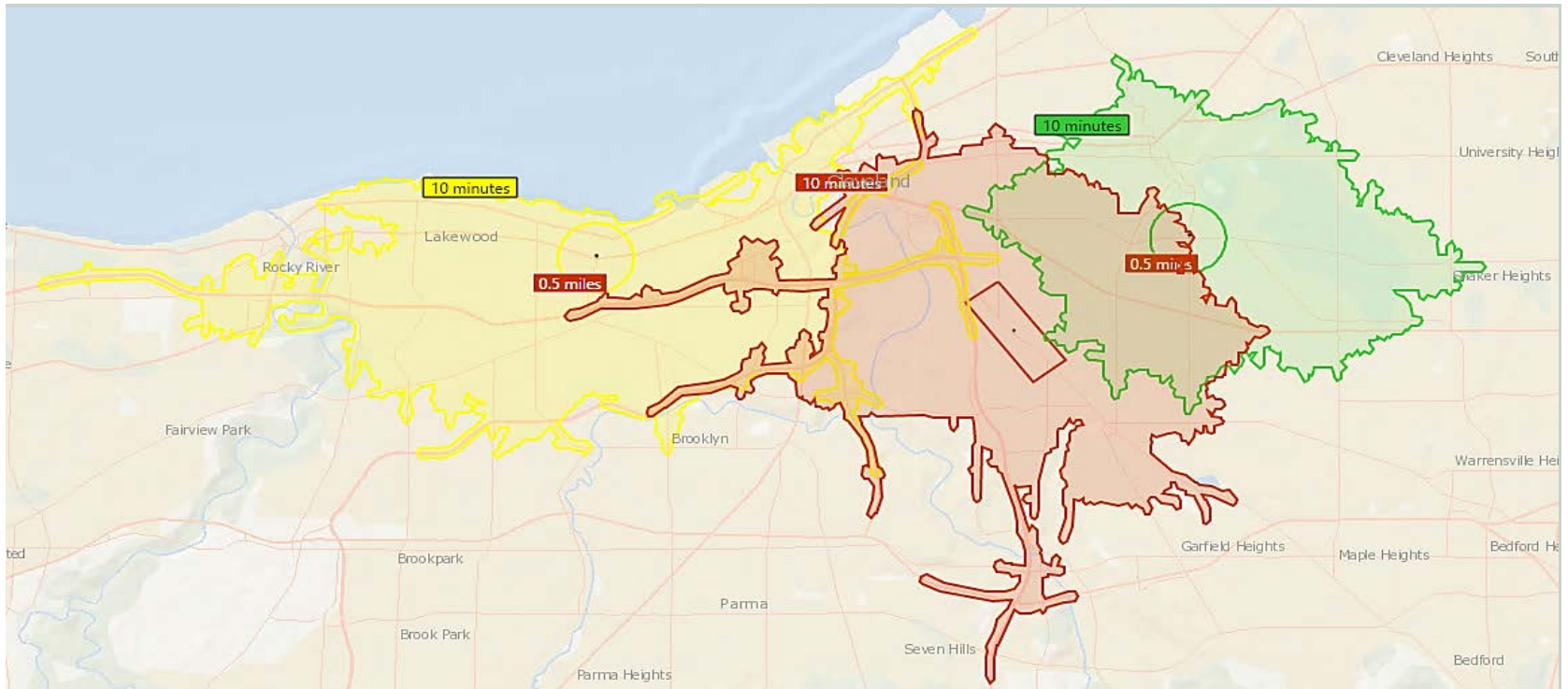




NOACA Market Analysis

Cleveland, OH

March 16, 2017



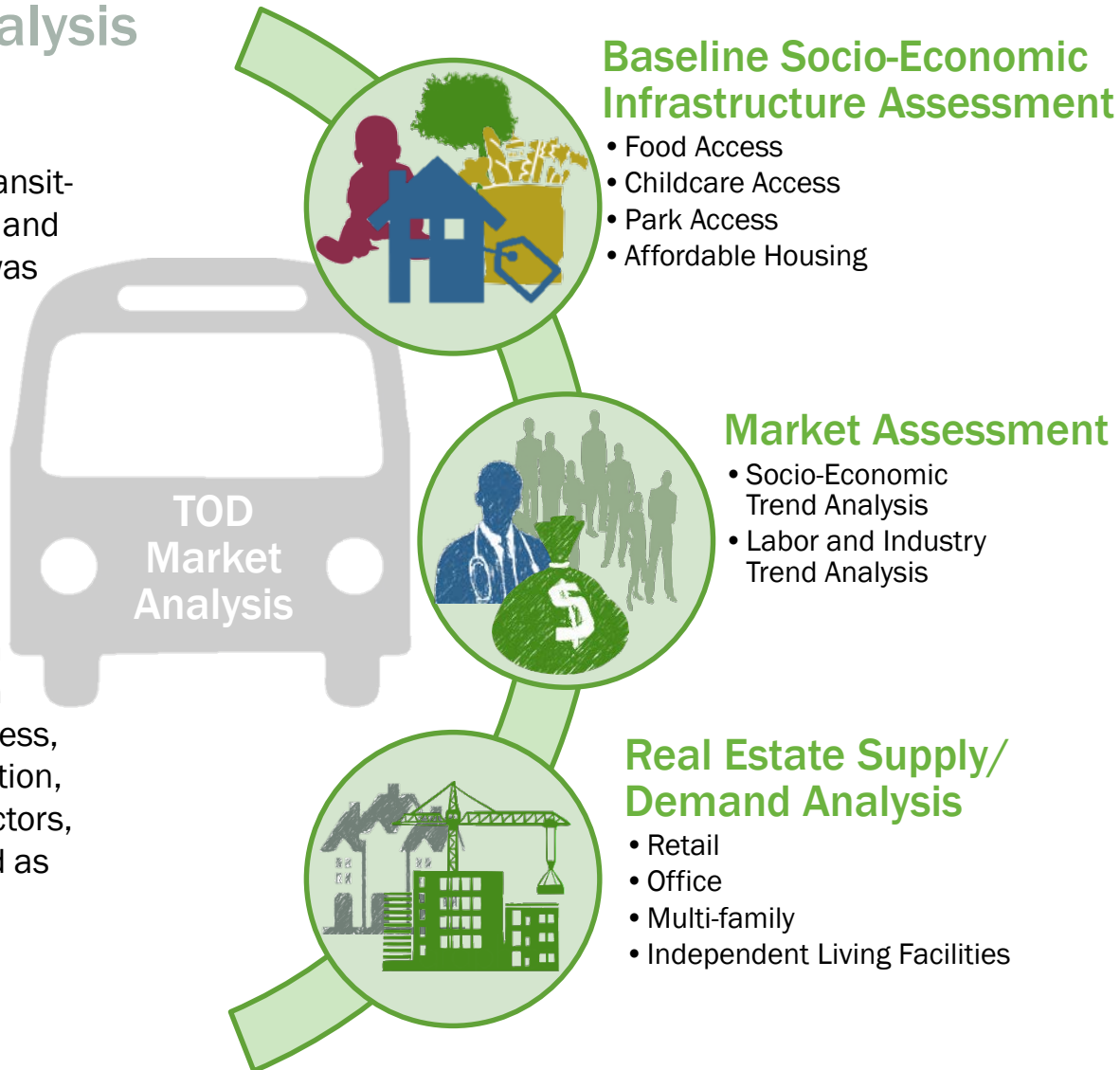
ECONOMIC AND REAL ESTATE ANALYSIS FOR SUSTAINABLE LAND USE OUTCOMES™

Background: Market Analysis

In support of the development of the Transit-Oriented Development (TOD) Scorecard and Implementation Plan, 4ward Planning was tasked by AECOM to conduct a market analysis for each of the three pilot TOD locations:

- West Blvd.-Cudell
- E. 116th Street
- Broadway-Slavic Village

The purpose of this analysis is to inform the TOD uses and densities proposed in the detailed plan. The analysis will address, as appropriate to each prospective location, the housing, retail, and employment sectors, and will seek to identify market demand as well as feasibility given prevalent development costs and rent levels.



Key Findings: Social Infrastructure Analysis

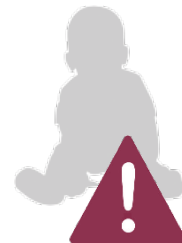
Adequate access to food and beverage stores

Based on data provided by the United States Department of Agriculture's Food Access Research Atlas, none of the three TOD study areas contain "food deserts" or a significant share of urban residents located more than a mile from a supermarket.



Inadequate access to licensed child care

According to data provided by the Ohio Child Care Resource & Referral Association, Child Care Center US, and Esri, the ratio of licensed childcare slots per preschool-age child within each TOD study area is considered below adequate service levels (one licensed childcare slot per every preschool-age child). Limited local childcare options may make it difficult for families to access high-quality early care and education, as well as realize the gains achieved from this access.



Inadequate access to parks in E. 116th Street

According to the Trust for Public Land's ParkScore, while West Blvd.-Cudell and Broadway-Slavic Village TOD study areas are relatively well-served by parks, the eastern portions of the half-mile radius surrounding the E. 116th Street TOD study area have high to very high park need.



High shares of cost-burdened renter households

According to HUD, families who pay more than 30 percent of their income for rent are considered "cost burdened" and may have difficulty affording basic necessities. Considering between 27 and 41 percent of renter households within the study areas paid more than 50 percent of their income on rent, there is a great need for affordable rental housing within the region.



Key Findings: Socio-Economic Analysis

Greatest transit-supportive densities in West-Bld.-Cudell

Greater population, employment, and housing densities are associated with more transit use. Currently, the West-Bld.-Cudell's half-mile radius area has the highest population density (10,560 persons per square mile), workforce density (4,300 adult workers 16+ years per square mile), and housing density (5,800 units per square mile) among all study areas. Absent major investment and in-migration, population growth and household formation within all study areas is expected to remain relatively flat through 2021.



Existing and potential transit-users in Broadway-Slavic Village

Currently, the Broadway-Slavic Village's half-mile study area contains the lowest median age (34 years) and greatest share of young persons under 35 (52 percent) among all study areas, as well as an existing proclivity towards public transit use (up to 16 percent of area workers commute via public transit) - which is a positive sign that additional transit investment may be well-received by local commuters. This is especially true for area households earning less than \$35,000 per year or unable to afford a car (70 percent of residents), or area workers spending more than 45 minutes per day traveling to work (14 percent).



Transit-dependent households and seniors within East 116th Street

Access to transit is particularly important for transit-dependent households such as those without a car (38 percent of residents within East 116th Street's half-mile study area), seniors who can no longer drive (seven percent of residents are over 75 years of age, some which may be less able to drive), and households with disabled persons (40 percent).

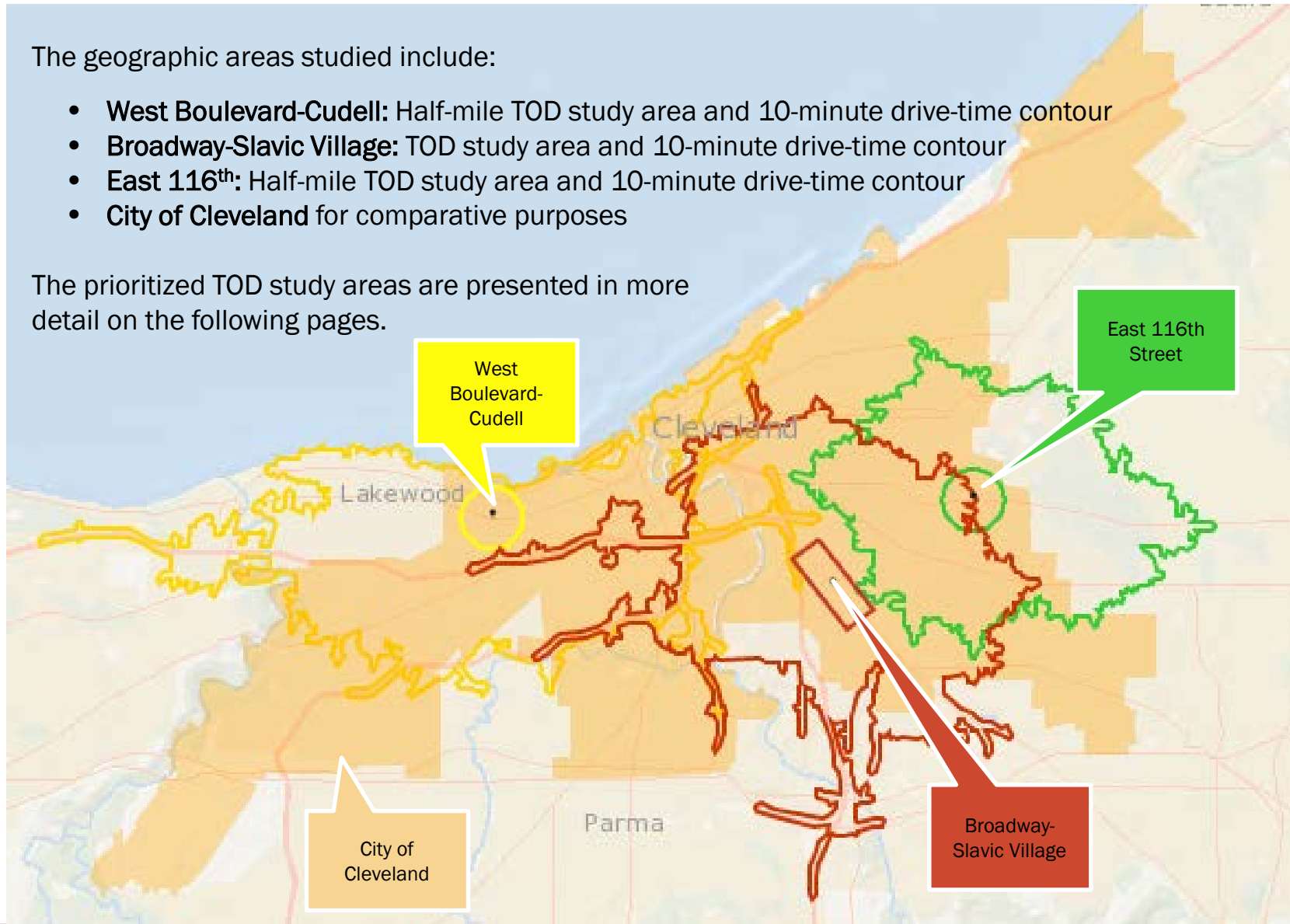


Methodology: Study Areas

The geographic areas studied include:

- **West Boulevard-Cudell:** Half-mile TOD study area and 10-minute drive-time contour
- **Broadway-Slavic Village:** TOD study area and 10-minute drive-time contour
- **East 116th:** Half-mile TOD study area and 10-minute drive-time contour
- **City of Cleveland** for comparative purposes

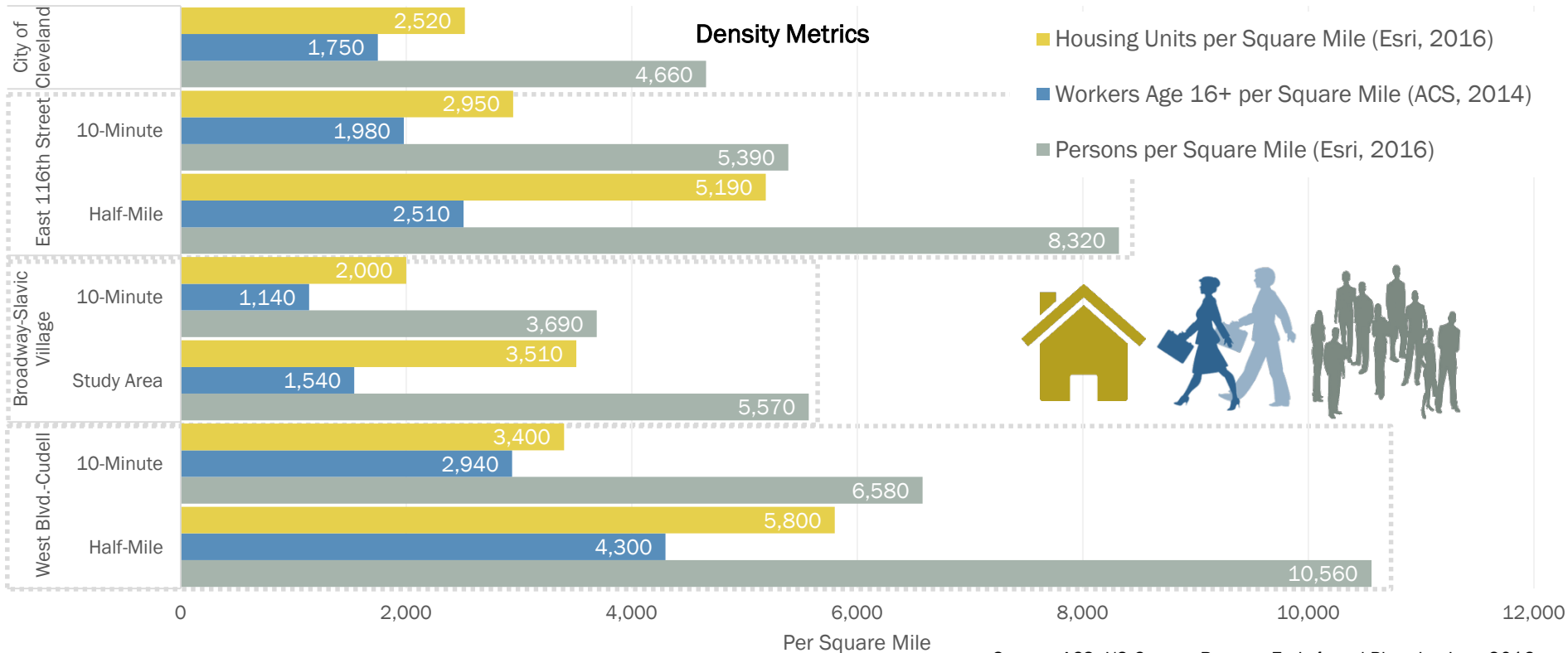
The prioritized TOD study areas are presented in more detail on the following pages.



Source: Esri

Density Metrics: All Study Areas

Greater population, employment, and housing densities are often associated with higher and more frequent transit use. The chart below compares existing population, workforce, and housing density metrics across all study areas. Currently, the half-mile radius area of the West-Blvd.-Cudell TOD study area has the highest population density (10,560 persons per square mile), workforce density (4,300 adult workers 16+ years per square mile), and housing density (5,800 units per square mile).



Source: ACS, US Census Bureau; Esri; 4ward Planning Inc., 2016

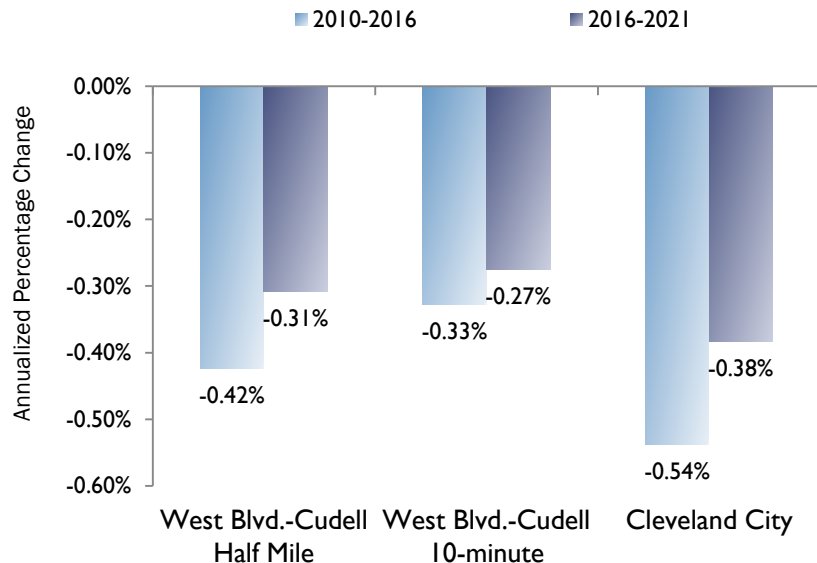
Near-Term Population Growth: West Boulevard-Cudell

Annualized Growth Rate Assumptions

Strong Positive Growth	Greater than	1.50%		annually
Modest Positive Growth	Between	1.50%	and 0.75%	annually
Flat Growth	Between	0.75%	and -0.75%	annually
Modest Negative Growth	Between	-0.75%	and -1.50%	annually
Strong Negative Growth	Less than	-1.50%		annually

As illustrated below, the half-mile radius and the 10-minute drive-time contour surrounding the West Blvd.-Cudell TOD study area both experienced relatively flat population growth from 2010 to 2016 (at -0.64 and -0.49 percent per year, respectively), while the City of Cleveland experienced weak negative population growth, overall, (-0.81 percent per year). Although total populations within each study area are projected to continue declining through 2021, absent major in-migration and development, they are expected to decline at slower rates and remain relatively flat (between -0.75 and 0.75 per year).

Annualized Percentage Change, Total Population



Population by Geography; West Blvd.-Cudell

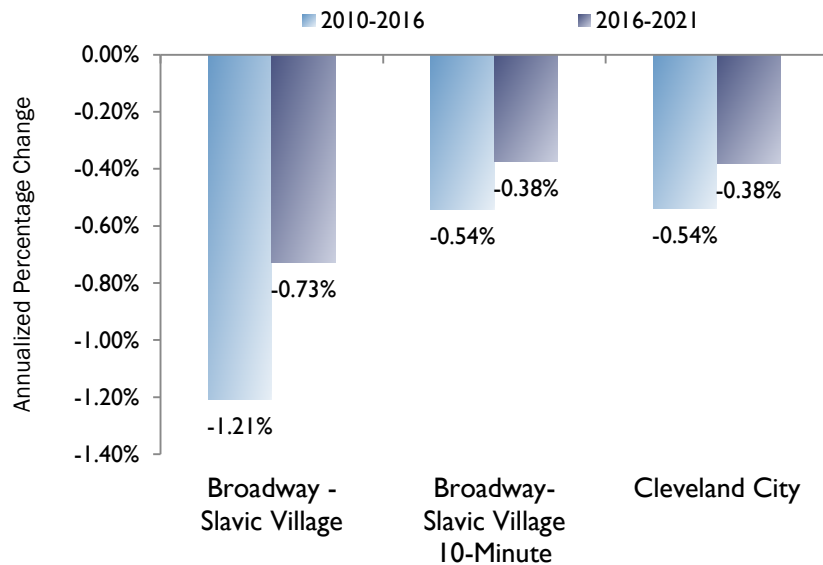
	2010	2016 (estimated)	2021 (forecasted)	Net Change (2016-2021)
Half-Mile	8,453	8,238	8,111	-127
10-Minute Drive-Time	161,745	158,566	156,388	-2,178
City of Cleveland	396,815	383,989	376,639	-7,350

Source: US Census Bureau; Esri; 4ward Planning Inc., 2016

Near-Term Population Growth: Broadway-Slavic Village

As illustrated below, from 2010 to 2016, the half-mile radius surrounding the Broadway-Slavic Village TOD study area experienced strong negative population growth (-1.81 percent per year), while the 10-minute drive-time contour and the City of Cleveland, overall, experienced weak negative population (-0.81 percent per year). Although total populations within each study area are projected to continue declining through 2021, absent major in-migration and new residential development, they are expected to decline at slower rates and remain relatively flat (between -0.75 and 0.75 per year).

Annualized Percentage Change, Total Population



Population by Geography; Broadway-Slavic Village

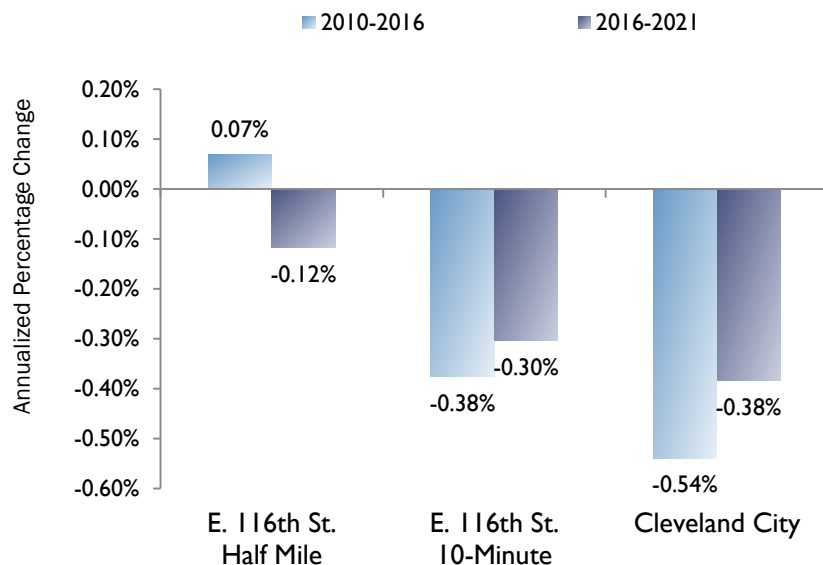
	2010	2016 (estimated)	2020 (forecasted)	Net Change (2016-2020)
Half Mile	4,688	4,348	4,190	-158
10-minute Drive	91,641	88,657	86,994	-1,663
City	396,815	383,989	376,639	-7,350

Source: US Census Bureau; Esri; 4ward Planning Inc., 2016

Near-Term Population Growth: East 116th Street

In contrast to the other TOD study areas, the half-mile radius surrounding the East 116th Street TOD study area experienced some population growth from 2010 to 2016, albeit a relatively flat 0.10 percent per year. While the 10-minute drive-time contour also experienced flat population growth (-0.56 percent per year) during this same period, the City of Cleveland experienced weak negative population growth (-0.81 percent per year). Although total populations within all geographies are projected to decline through 2021, absent major in-migration and residential development, population change will remain relatively flat (between -0.75 and 0.75 per year).

Annualized Percentage Change, Total Population



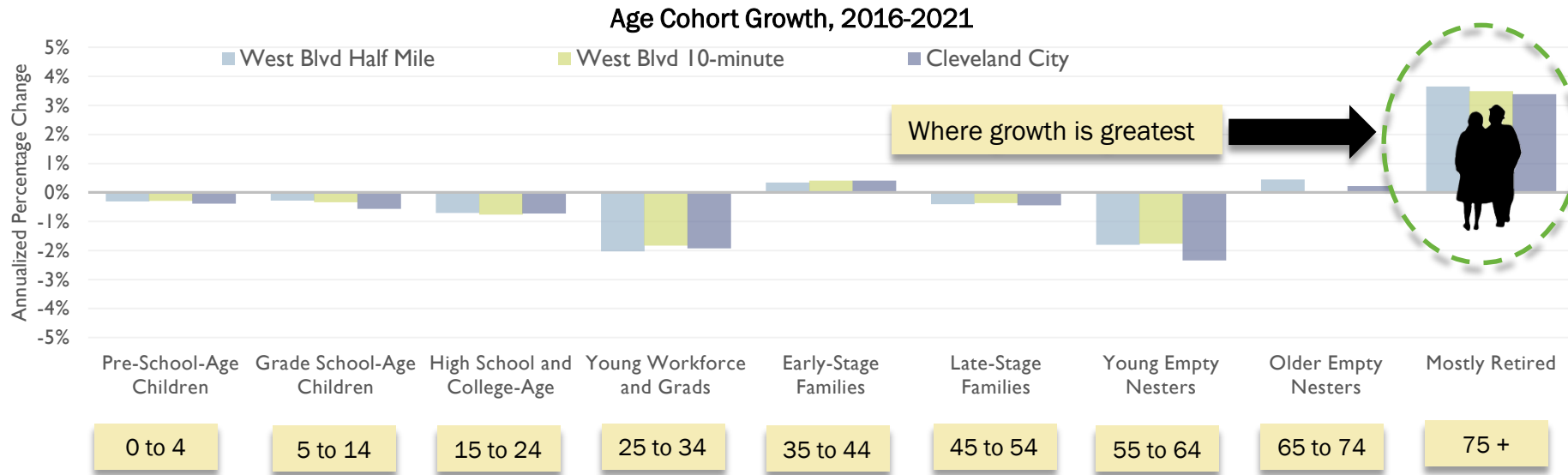
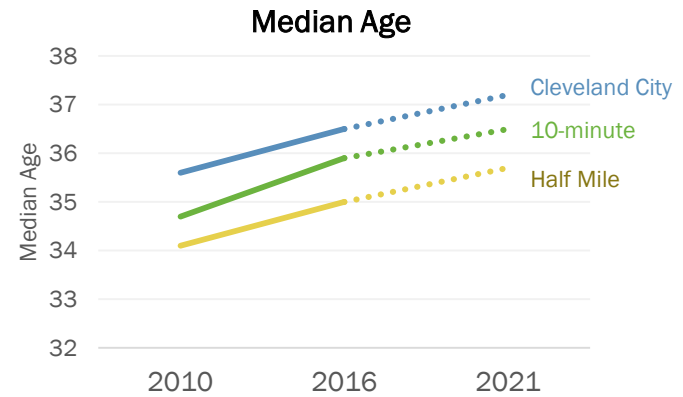
Population by Geography; East 116th Street

	2010	2016 (estimated)	2020 (forecasted)	Net Change (2016-2020)
Half Mile	6,461	6,488	6,450	-38
10-minute Drive	98,790	96,565	95,097	-1,468
City	396,815	383,989	376,639	-7,350

Source: US Census Bureau; Esri; 4ward Planning Inc., 2016

Age Cohort Growth Patterns: West Boulevard-Cudell

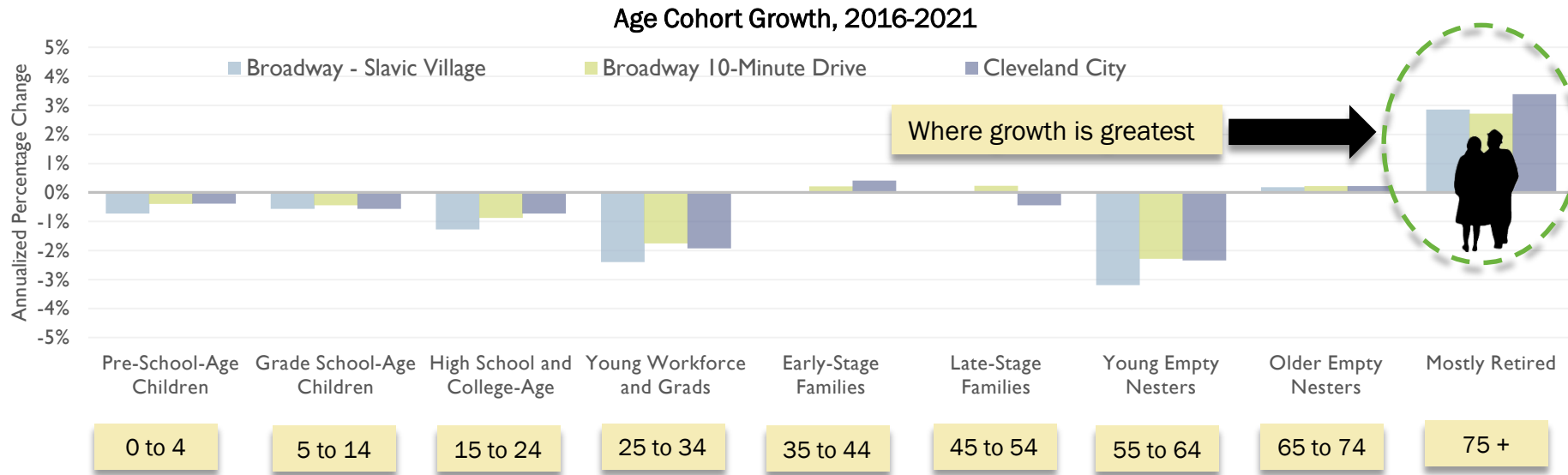
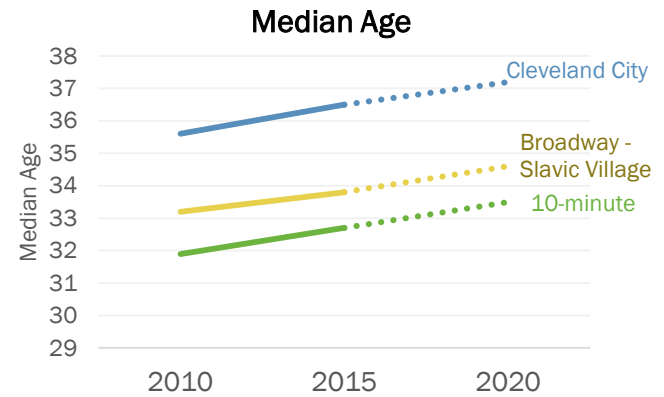
The median age of residents living within West Boulevard-Cudell’s half-mile study area (35 years) is slightly lower than that within the larger 10-minute drive-time area (36 years) and City (37 years), overall. Through 2021, the age group representing Mostly Retired individuals (age 75 years and older) is expected to grow at the greatest rate. As a result of the aging population trend, the median age within all geographies is also expected to increase through 2021. The aging of the region’s population will influence near-term housing and transit demand.



Source: US Census Bureau; Esri; 4ward Planning Inc., 2016

Age Cohort Growth Patterns: Broadway-Slavic Village

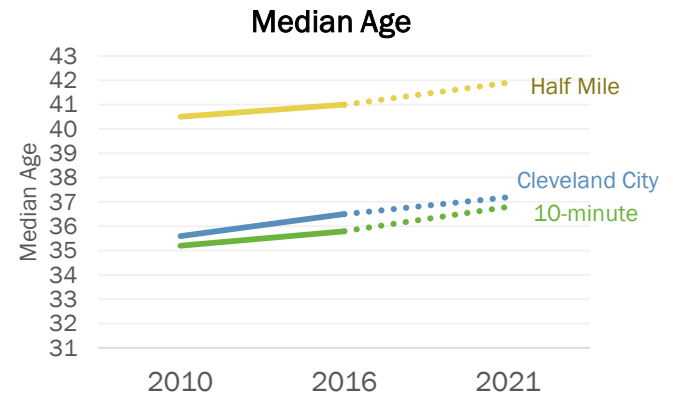
The median age of residents living within both Broadway-Slavic Village (34 years) and the 10-minute drive-time area (33 years) is, relatively, much lower than that within City (37 years), overall. Through 2021, the age group representing Mostly Retired individuals (age 75 years and older) is expected to grow at the greatest rate. As a result of the aging population trend, the median age within all geographies is also expected to increase through 2021. The aging of the region’s population will influence near-term housing and transit demand.



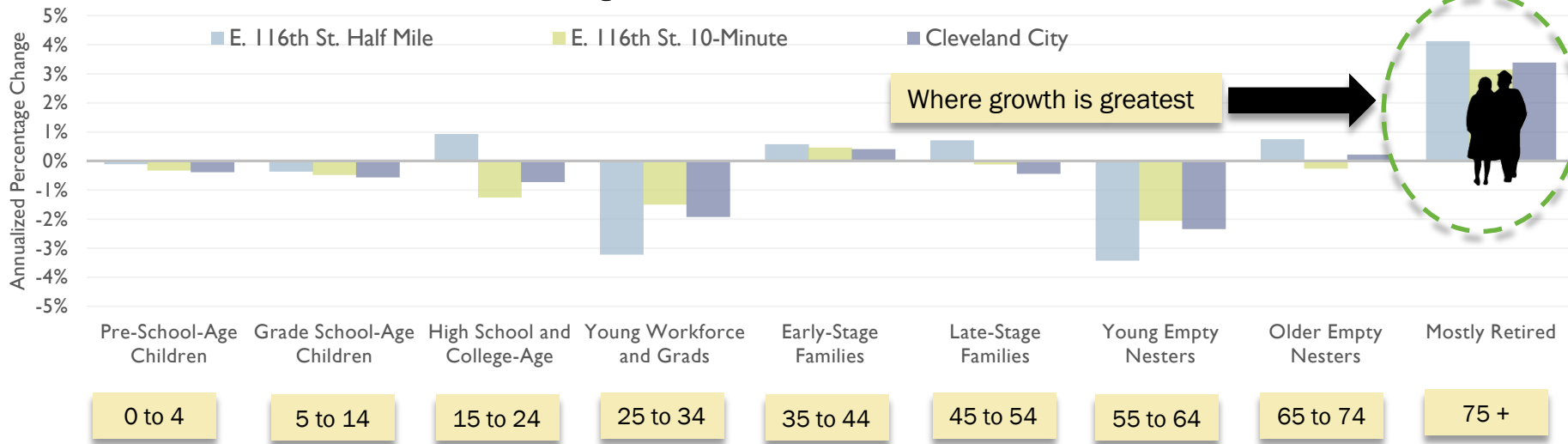
Source: US Census Bureau; Esri; 4ward Planning Inc., 2016

Age Cohort Growth Patterns: East 116th Street

In contrast to the other TOD study areas, the median age within the East 116th Street’s half-mile study area (41 years) is, relatively, higher than that within the larger 10-minute drive-time area (36 years) and City (37 years), overall. The age group representing Mostly Retired individuals (age 75 years and older) is expected to grow at the greatest rate within the study area through 2021. The median age within all geographies is also expected to increase through 2021. The aging of the region’s population will influence near-term housing and transit demand.



Age Cohort Growth, 2016-2021



Source: US Census Bureau; Esri; 4ward Planning Inc., 2016

Labor & Industry Analysis

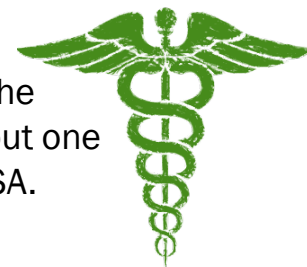
ECONOMIC AND REAL ESTATE ANALYSIS FOR SUSTAINABLE LAND USE OUTCOMES™



Key Findings: Labor & Industry Analysis

Dominated by health care and social assistance

Health Care and Social Assistance is the dominant industry in all study areas. This is particularly the case in the five-mile radius area surrounding the East 116th 10-minute TOD study area, where about one in three study area workers is employed in these sectors compared to one in five in the greater MSA. Manufacturing and Education Services are also major industry employers across all study areas.



Growth in healthcare and professional services, decline in manufacturing

According to labor projections provided by the Ohio Department of Job and Family Services, the Healthcare and Social Assistance sector is projected to be the fastest growing industry over the next decade, with an expected increase of 22 percent (bringing about 37,350 new jobs to the metro area) by the year 2025. The Professional, Scientific and Technical Service sector is also expected to add 9,945 new jobs in the metro, while the Administration & Support, Waste Management and Remediation sector will add another 10,000 jobs, during this same time period. Although the Manufacturing, is projected to decline seven percent by 2025, it will maintain its place as the second largest industry employer in the metro area.



An influx of mid-to-high wage range jobs

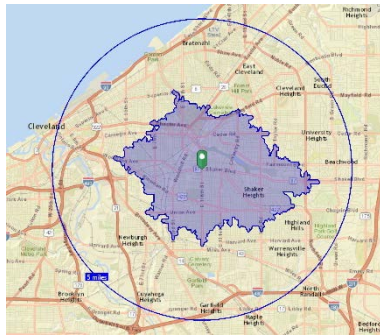
As the largest and fastest growing industry, Health Care and Social Assistance will continue to provide a substantial number of mid-wage jobs across a diversity of occupations, for example, from entry-level home care positions to highly-skilled roles for doctors and specialists. Overall, these occupations provide relatively higher paying work than, for example, the Administrative, Retail and Accommodation sectors also prominent in the study areas. Furthermore, Professional, Scientific and Technical Service occupations, the second fastest growing industry, are the highest paid among top area employers.



Methodology: Project Study Areas

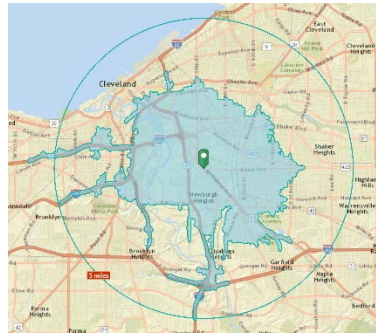
This section provides an overview of labor and industry trend data for the following study areas: a 10-minute drive time (approximated by a five-mile radius from the station address) for the Broadway-Slavic Village, East 116th Street, and West Boulevard-Cudell transit stations; the City of Cleveland; and the Cleveland-Elyria MSA.

East 116th Street



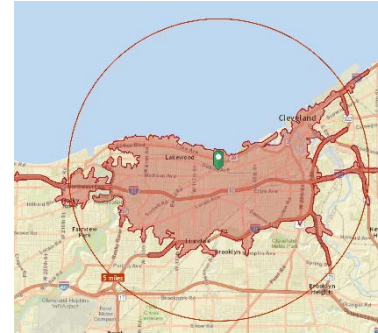
Total Employment: 235,769

Broadway-Slavic Village



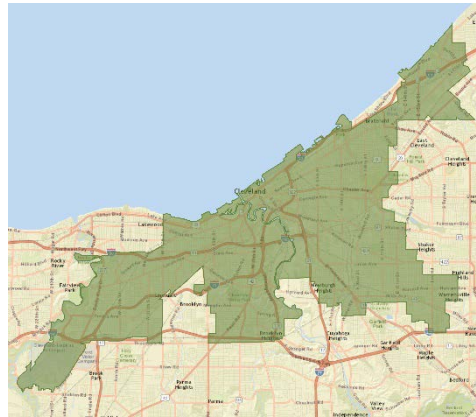
Total Employment: 115,169

West Boulevard-Cudell



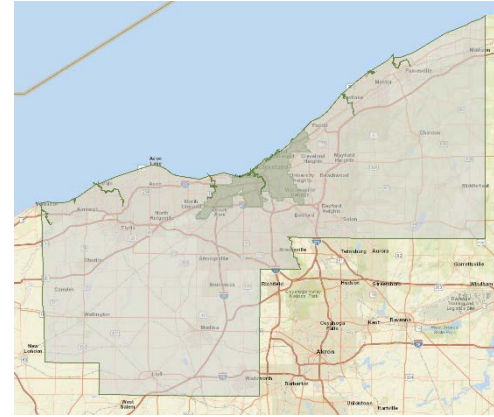
Total Employment: 183,484

City of Cleveland



Total Employment: 260,343

Cleveland-Elyria MSA



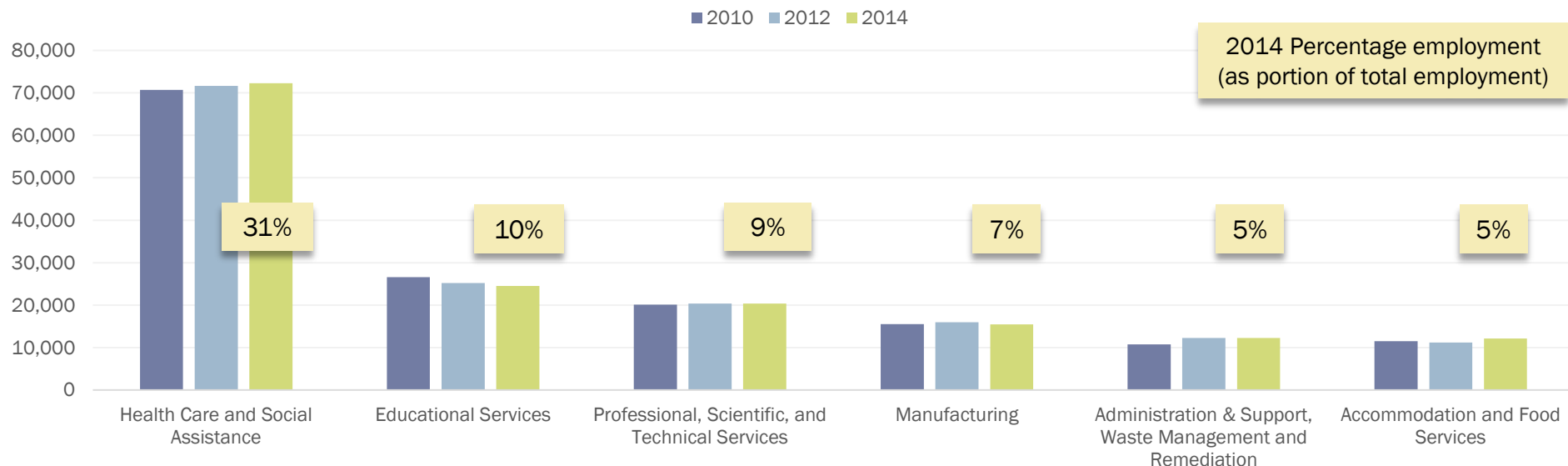
Total Employment: 938,890

Note: Due to data collection constraints, the 10-minute drive-time study areas were approximated by five-mile radii applied from each station address.

Top Six Industries by Total Employment: East 116th (5 mi)

The chart below depicts the top six industries, by employment, in the East 116th five-mile study area. Industry employment is dominated by the Health Care and Social Assistance sector, comprising 31 percent of total area employment. Growth in this sector was relatively flat between 2010 and 2014 (an increase of 2 percent or 1,561 jobs). Meanwhile, employment in Administration and Support, Waste Management and Remediation, the fifth largest industry, comprising 5 percent of total study area employment, increased by 14 percent (adding 1,500 new jobs) during this same time period. Employment in Educational Services saw a notable decrease in recent years, dropping 8 percent, a loss of 2,067 jobs, between 2010 and 2014.

E. 116th five-mile Radius - Top 6 Industries by Employment

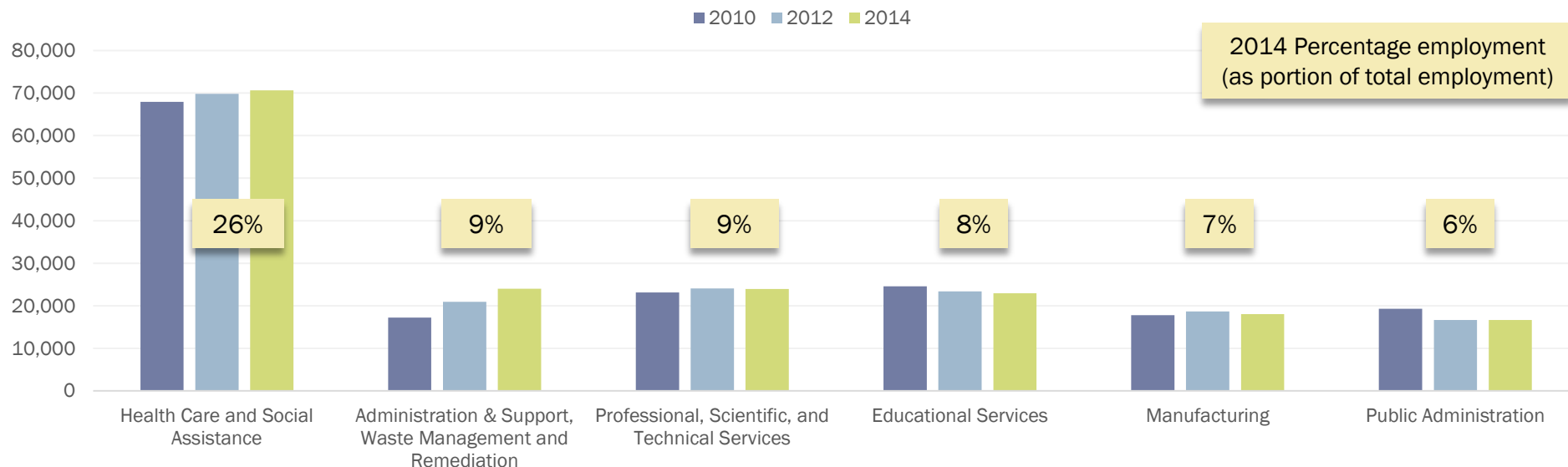


Source: OnTheMap

Top Six Industries by Total Employment: Broadway-Slavic Village (5 mi)

The chart below depicts the top six industries, by employment, in the Broadway-Slavic Village five-mile study area. Health Care and Social Assistance is the largest industry, comprising 26 percent of total study area employment; this industry saw modest growth (a 3 percent increase, the addition of 7,850 jobs) in recent years. Educational Services and Public Administration were the only industries among the top six to see any decline between 2010 and 2014, decreasing employment by 7 and 14 percent, respectively. The remaining top industries experienced some growth during this same time period: employment in Administration and Support and Waste Management and Remediation grew significantly, by 40 percent, and the Professional, Scientific and Technical Services by 4 percent. Manufacturing saw relatively flat growth with a 1 percent increase (234 jobs) between 2010 and 2014.

Broadway-Slavic Village five-mile Radius - Top 6 Industries by Employment

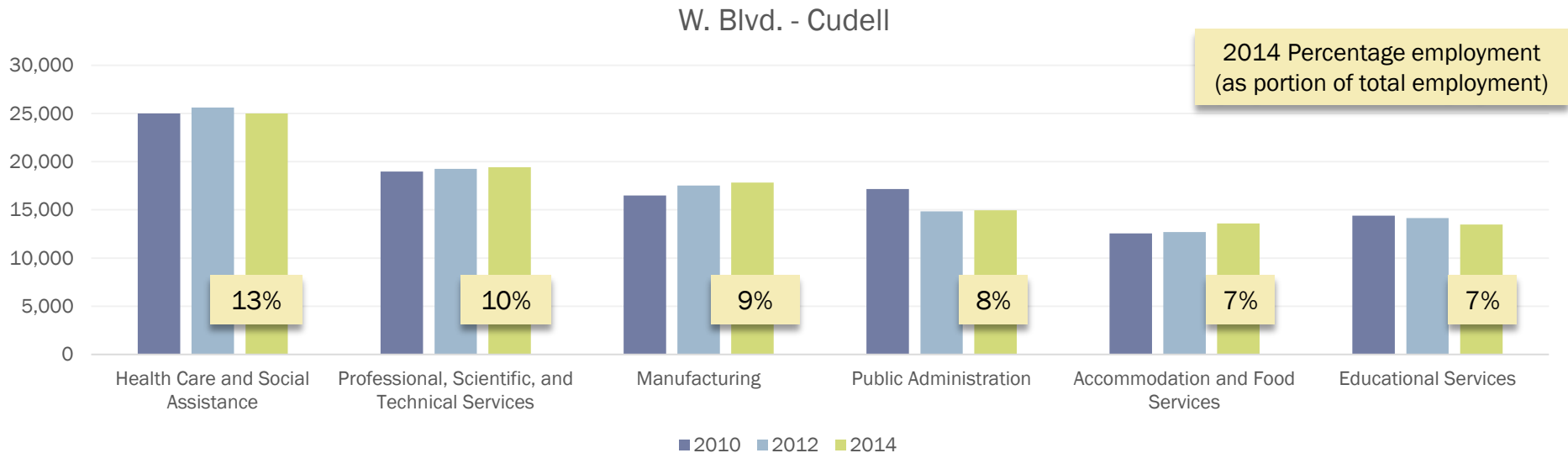


Source: OnTheMap

Top Six Industries by Total Employment: W. Blvd.-Cudell (5 mi)

The chart below depicts the top six industries, by employment, in the West Boulevard-Cudell five-mile study area. Health Care and Social Assistance is the largest industry, comprising 13 percent of total study area employment in 2014 (an industry proportion far below that of the East 116th Street and Broadway study areas). The second largest industry, by employment, Professional, Scientific and Technical Services, saw modest growth (2 percent) between 2010 and 2014 compared to Manufacturing, which increased 8 percent during this same time period. Public Administration and Educational Services both saw a decline in recent years, with employment in these industries dropping 13 and 6 percent, respectively.

W. Blvd.-Cudell five-mile Radius - Top 6 Industries by Employment



Source: OnTheMap

REAL ESTATE ANALYSIS

ECONOMIC AND REAL ESTATE ANALYSIS FOR SUSTAINABLE LAND USE OUTCOMES™



Key Findings: Retail Real Estate Analysis

West Blvd.-Cudell households leave to buy groceries and shop

According to data provided by Esri, the half-mile radius area surrounding the West Blvd.-Cudell TOD study area is experiencing a “leakage” of retail sales in almost all of the selected retail categories - meaning many households are making retail purchases outside of the trade area (whether through brick-and-mortar stores or online purchases). Grocery stores, in particular, are experiencing the most “leakage” of retail sales within the study area. Some local households are likely leaving the study area to purchase groceries at the Giant Eagle located approximately a mile from the study area.



Retail stores in Broadway-Slavic Village attract outside shoppers

According to data provided by Esri, Broadway-Slavic Village is experiencing a “surplus” of retail sales in most of the selected retail categories - meaning many households from outside the trade area are coming in to make selected retail purchases.



E. 116th Street households buy groceries locally but leave to shop

According to data provided by Esri, although many local households are purchasing groceries locally (likely at the Giant Eagle supermarket), the half-mile radius of the E. 116th Street TOD study area is experiencing a “leakage” of retail sales in special food services and stores, and drinking establishments- meaning many local households are making these purchases outside of the trade area. Further, the dearth of large shopping center space within the 10-minute drive contour suggests the existing market and/or site conditions within the 10-minute drive contour are inferior to other locations, for establishing a large retail center site.



Key Findings: Office Real Estate Analysis

Highly likely that new office space will need to be constructed

The five-mile radius surrounding the West Boulevard-Cudell TOD study area is projected to have more than 1.2 million square feet of net new office demand by 2025. Located within an office submarket which currently features 253,140 square feet of vacant office space, it is highly likely that new office space will need to be constructed within the submarket to meet the net new demand by 2025, a portion of which could be constructed within a half-mile of the West Boulevard-Cudell TOD Study Area.



Meeting Class A demand will likely require significant rehabilitation

By 2025, there is a projected net new demand for 2.3 million square feet of office space in the five-mile radius surrounding the Broadway-Slavic Village TOD Study Area. Located within Cleveland's Central Business District (CBD) office submarket, the study area's office submarket has a relatively high total vacancy rate (3.2 million square feet). It is likely that some of the projected net new demand will require Class A office space (e.g., a new or substantially rehabilitated office building with modern amenities and finishes, located in a superior location). Further, it is likely that a number of the buildings currently vacant may be in great disrepair and/or economically obsolescent to the extent that they will not attract any new office users, absent significant rehabilitation.



Some office space will likely be physically or economically unsuitable

The five-mile radius surrounding the East 116th Street TOD Study Area is projected to have net office space demand for more than 2.1 million square feet of space by 2025, in an office submarket which currently exhibits 584,141 square feet of vacant space. While all of the vacant space currently within the 10-minute drive corridor may prove to be physically and/or economically unsuitable for office occupancy, a portion of this space may be sufficient to meet the needs of the projected net demand through 2025.



Key Findings: Multi-Family Real Estate Analysis

120 to 190 units within West Blvd.-Cudell

Assuming between three and five percent of net housing demand within the 10-minute drive-time contours could be captured within each TOD study area, the West Blvd.-Cudell TOD study area has the opportunity to support the development of between 120 and 190 multi-family units by 2026. The adult population within this study area that is most likely to rent multi-family housing is relatively young, generates low-to-moderate household income, and have few persons per household.

110 to 180 units within Broadway-Slavic Village

By 2025, the Broadway-Slavic Village TOD study area has the opportunity to support the development of between 110 and 180 multi-family units. The adult population within this study area that is most likely to rent multi-family housing is relatively young; generates, principally, low household income; and represents a broad range of household size.

90 to 150 units within E. 116th Street

By 2025, the E. 116th Street TOD study area has the opportunity to support the development of between 90 and 150 multi-family units. In addition to being likely to rent, the adult population within this study area is relatively young, generates low-to-moderate household income, and has few persons per household.



Supply/Demand Analysis: West Blvd.-Cudell (10-Minute Drive-Time Area)

	2016	2020	2025
Housing Demand Metrics			
Population	158,570	156,360	154,180
<i>Households (each household in the area represents demand for one housing unit)</i>	69,690	69,270	68,860
Estimated Workers within 10-Minute Drive	85,530	87,490	90,870
Estimated Workers Residing Outside 10-Minute Drive (59%)	69,080	71,740	74,510
<i>Estimated Pent-Up Housing Unit Demand from Commuting Area Workers (1%)</i>	691	717	745
<i>Estimated Number of Vacant Housing Units (based on a currently observed 15% rate)</i>	<u>11,670</u>	<u>11,640</u>	<u>11,600</u>
<i>Estimated Aggregate Housing Unit Demand in 10-Minute Drive</i>	82,050	81,630	81,210
Housing Supply Metrics			
Estimated Housing Units in 10-Minute Drive (assumes no new units built)	81,880	81,880	81,880
<i>Subtract Physically Obsolescent Units (5% of total units, 1% annual obsolescence rate)</i>	4,090	4,300	4,520
<i>Estimated Net Marketable Housing Units in 10-Minute Drive</i>	77,790	77,580	77,360
Net Housing Demand/Supply Calculation			
<i>Estimated Aggregate Housing Unit Demand in 10-Minute Drive</i>	82,050	81,630	81,210
<i>Subtract Estimated Net Marketable Housing Units in 10-Minute Drive</i>	<u>77,790</u>	<u>77,580</u>	<u>77,360</u>
<i>Net Housing Unit Demand/(Excess Units) (Assumes no new housing beyond 2016)</i>	4,260	4,050	3,850

Source: 4ward Planning Inc. 2016

Prospective Build-Out Program: West Blvd.-Cuddell

	Dwelling	Average	Total	
West Blvd.-Cuddell	Units	Gross S.F. per Unit	Gross S.F.	Commercial
<i>Multi-family Rental</i>	150	900	135,000	NA
<i>Town Houses</i>	40	1,100	44,000	NA
<i>Service & Convenience Retail</i>	NA	NA	15,000	3 to 5
<i>Limited Service Dining</i>	NA	NA	6,000	2 to 3
<i>Office - Professional</i>	NA	NA	10,000	1 to 2
<i>Office - Medical</i>	<u>NA</u>	<u>NA</u>	<u>25,000</u>	<u>2 to 5</u>
Totals	190	NA	235,000	8 to 15

Note: The above identified build-out program assumes a multi-year build-out and stabilization period (that is, from site plan design through full occupancy). Further, it is assumed that construction will occur in phases, with residential development occurring as a first phase of development.

Prospective Build-Out Program: East 116th Street

	Dwelling	Average	Total	Commercial
East 116 Street	<u>Units</u>	<u>Gross S.F. per Unit</u>	<u>Gross S.F.</u>	<u>Units</u>
<i>Multi-family Rental</i>	90	900	81,000	NA
<i>Town Houses</i>	30	1,100	33,000	NA
<i>Service & Convenience Retail</i>	NA	NA	45,000	4 to 6
<i>Limited Service Dining</i>	NA	NA	12,000	4 to 6
<i>Office - Professional</i>	NA	NA	25,000	1 to 2
<i>Office - Medical</i>	<u>NA</u>	<u>NA</u>	<u>50,000</u>	<u>2 to 5</u>
Totals	120	NA	246,000	11 to 19

Note: The above identified build-out program assumes a multi-year build-out and stabilization period (that is, from site plan design through full occupancy). Further, it is assumed that construction will occur in phases, with residential development occurring as a first phase of development.

Prospective Build-Out Program: Broadway-Slavic Village

	Dwelling	Average	Total	
Broadway-Slavic Village	Units	Gross S.F. per Unit	Gross S.F.	Commercial
<i>Multi-family Rental</i>	160	900	144,000	NA
<i>Town Houses</i>	30	1,100	33,000	NA
<i>Service & Convenience Retail</i>	NA	NA	15,000	3 to 5
<i>Limited Service Dining</i>	NA	NA	6,000	2 to 3
<i>Office - Professional</i>	NA	NA	25,000	1 to 2
<i>Office - Medical</i>	<u>NA</u>	<u>NA</u>	<u>50,000</u>	<u>2 to 5</u>
Totals	190	NA	273,000	8 to 15

Note: The above identified build-out program assumes a multi-year build-out and stabilization period (that is, from site plan design through full occupancy). Further, it is assumed that construction will occur in phases, with residential development occurring as a first phase of development.