

MEMORANDUM REPORT

To: Phil Hoffman, Parsons

From: HR&A Advisors

Date: 10.17.14

Re: Development Impacts of a Dedicated-Lane Bus Rapid Transit and Mixed-Lane Rapid Bus West Valley Connector Segment in Ontario, California

Introduction

Parsons retained HR&A Advisors, Inc. (HR&A) on behalf of OmniTrans, to assess the relative value creation potential of a dedicated-lane bus rapid transit (BRT) system and a mixed-lane rapid transit bus along Holt Boulevard in the city of Ontario. Building off the success of its San Bernardino Express bus service, or sbX, OmniTrans is in the process of planning a new bus corridor in the Inland Empire, from Pomona to Fontana, the West Valley Connector (WVC). The WVC runs primarily along Holt Boulevard and Foothill Boulevard. The majority of the line will be a mixed-lane rapid transit bus, also commonly referred to as an “enhanced bus”, but alternatives running along Route 61 and West Valley Connector Alignment also consider a dedicated-lane bus rapid transit through portions of the route, including 3.5 miles of dedicated-lane BRT in the city of Ontario.

This study evaluates the comparative development value impacts of a dedicated-lane BRT and mixed-lane rapid bus for the portion of the WVC within the city of Ontario from Benson Avenue to Vineyard Avenue. This report provides a market assessment, demand analysis, literature review, case studies, and impact analysis that will help inform the future transit programming of the WVC in the city of Ontario.

The primary objectives of this study include:

- Understanding real estate market performance and assessing the overall potential for office, retail, and residential development along the Holt Boulevard corridor in the city of Ontario.
- Researching existing literature on BRT and rapid transit bus case studies to understand potential real estate value premium metrics for the two systems.
- Estimation of the range of major value impacts of BRT and rapid transit bus within the Holt Boulevard Corridor in the city of Ontario.
- Identification of potential funding sources to support transit improvements.

Summary of Key Findings

Market Analysis and Demand

The city of Ontario is a key employment and activity center within San Bernardino County, but like many Inland Empire cities, the Ontario real estate markets were hit hard by the recent recession. However, with future developments in the southern area of the city, the New Model Colony, and improvements in the economy in recent years, Ontario is expected to be a major area of residential and employment growth in coming years.

Market Overview

A half-mile buffer around the six WVC stations from Mountain Avenue to Vineyard Avenue (Half-Mile Study Area) was evaluated for office, retail, and residential land uses to understand the local real estate market context. It should be noted that the concentration of Ontario's economic activity is located near the Ontario Center/Interstate 15 Freeway area, which is west of the Half Mile Study Area. The study area is adjacent to important Ontario activity areas, including the Downtown and Civic Center area, the Convention Center and the western edge of the Ontario International Airport.

- **Office.** Ontario has the greatest concentration of Class A office space in San Bernardino County, but there is only one Class A office building within the Half Mile Study Area. The majority of office in the Half Mile Study Area is older and smaller, Class B & C office space and existing office spaces achieve fairly low rents. The Ontario market was overbuilt in office space at the start of the recession and the study area currently has a high vacancy rate of approximately 20 percent.
- **Retail.** The Ontario retail market was impacted by the recession, but performs better than most cities in San Bernardino County. There is a significant amount of retail located in the Half-Mile Study area, but the majority of retail, 1.7 million square feet, can be found outside of traditional multi-tenant shopping centers, in stand-alone buildings and smaller store fronts. Vacancy rates were extremely low before the recession, but almost tripled to a peak of 9 percent in 2009. Vacancy rates are currently at approximately 7 percent and are expected to continue to improve.
- **Residential.** While for-sale single family and multi-family development has contracted since the recession, the rental multi-family market has performed very well. Ontario is a more established city within San Bernardino County and has captured a smaller percentage of countywide residential growth across the last decade. Rental residential occupancy is extremely high, with vacancies of only 1.5 percent. The Ontario Square includes two recently built multi-family developments within the Half-Mile Study Area, renting from \$1,300 to \$1,500 for flats and townhomes from \$1,650 to \$1,950.

Market Demand

In evaluating future real estate market demand, HR&A focused on the market capture within a 500 foot buffer of the WVC corridor along Holt Boulevard, between Benson Avenue and Vineyard Avenue (500-Foot Study Area). As demonstrated by our research of comparable bus transit corridors, properties located adjacent to BRT and rapid bus routes receive the greatest transit benefits and also benefit from the public

realm investments made along the corridor. We anticipate that in case of the WVC, a combination of enhanced bus transit and public realm improvements along the corridor will drive real estate impacts. The 500-Foot Study Area reflects the area of influence of proposed bus transit along the corridor, and as a result is the appropriate geographic context to evaluate real estate impacts resulting from transit improvements.

Demand models were developed based on projections of employment and residents in the City of Ontario to estimate a range of demand for key land uses. The table below presents the results of the demand analysis.

Summary of Estimated 500 foot Study Area Demand

	2014 – 2025	2025- 2035	Total
Office	140,000 – 240,000 SF	220,000 – 360,000 SF	360,000-600,000 SF
Residential	170 - 400 Units	140 - 325 Units	310 - 725 Units
Retail	60,000 - 110,000 SF	30,000 - 70,000 SF	90,000 to 180,000 SF

Literature Review and Case Studies

To understand the impact differential between dedicated-lane BRT and mixed-lane rapid bus (commonly referred to as “enhanced bus”), HR&A reviewed available academic studies on BRT and rapid bus and prepared case studies of six BRT and rapid transit routes from across the nation. Case studies include the Los Angeles Metro Orange Line, the Pittsburgh MLK East Busway, the Boston Silver Line (Washington Street), the Kansas City MAX (Main Street), the Eugene-Springfield MAX (Franklin Corridor), and the Cleveland HealthLine.

The literature review and case studies show positive impacts from new transit amenities on surrounding real estate values. Transit-accessible properties attract an increasing share of regional demand, which leads to increased property value and new development. The scale of the property value increase and share of new development is dependent on the type and quality of transit system, as well as the underlying strength of local real estate market.

The real estate impacts attributed to transit improvements can result from two primary sources:

- 1) A premium on real estate values for all properties within close proximity to transit, and
- 2) The pace and value of new development resulting from real estate demand triggered by transit improvements.

Due to the nascent nature of BRT in North America, a limited number of studies have sought to quantify the impact of BRT or rapid bus/enhanced bus on adjacent properties. All have utilized hedonic price regression analyses to isolate the effect of BRT and rapid bus/enhanced bus proximity or access on residential property value. The following table summarizes available data on the property value premium.

Literature Review Value Premium Findings

Location	Mode	Product Type	Value Premium
Boston, MA	Enhanced Bus	Condominium	7.6% ¹
Eugene-Springfield, OR	BRT	Single-family	10.2% ²
Pittsburgh, PA	BRT	Single-family	11.0% ¹

In addition to these quantitative findings, the case studies suggest:

- The property value premium impacts were found to decrease the further properties were away from the transit route. Premiums were generally strongest within 100 feet and generally decayed thereafter. The Eugene-Springfield MAX BRT found a 0.18% decrease in value for every walking minute away from a station.
- Transit improvements can add value to immediately adjacent properties and shape the intensity and orientation of ongoing developments. However, there has to be significant market demand for BRT or rapid bus to be a major contributor to transit-oriented development and its ability to impact development is strongly influenced by the level of public policies and investments.
- Mixed-lane rapid bus and dedicated-lane BRT can provide significant transportation benefits and have the potential to increase property value, particularly when implemented with public realm improvements, however they are unlikely to be a primary catalyst for new development.

Impact Assumptions

In evaluating real estate impacts, HR&A estimated both a property premium, as well as a degree of build out of vacant properties supported by rapid bus and dedicated-lane BRT within the 500 foot Study Area.

It should be noted that estimates of property build out do not evaluate the “incremental” value of new development specifically attributed to each transit type. There is likely to be a level of development on vacant land with or without transit improvements. In terms of the development of vacant land, however there is not sufficient research data to isolate the new development increment that can be attributed to a specific bus transit type and the gross development value impacts presents a better understanding of funding potential. Thus, the analysis does not attempt to look at the incremental value of new development specifically attributed to each transit type, rather estimates total value of new development supported by each transit type between now and 2035.

Area of Impact

While light rail impact studies often evaluate a larger ¼ to ½ mile radius, the literature review and case studies suggest that the development impacts of BRT and mixed-lane rapid bus are concentrated towards

¹ Value premium of parcels immediately adjacent to a station relative to parcels approximately 1,000 feet away.

² Value premium for properties immediately adjacent to a stop relative to properties more than 3 miles away.

properties adjacent to the transit route. To approximate the properties adjacent to the transit corridor, a 500 foot buffer of Holt Boulevard (the 500-Foot Study Area) is used as the area of impact for this analysis. All impact results are based on value increases and premiums within the 500-Foot Study Area.

Property Value Premium Assumptions

HR&A's property value impact premiums are based on available metrics of real estate impact, as found in the literature review and case studies. Only two studies analyzed value premiums for new BRT improvements in North America, which found property value premiums of up to 10 to 11 percent for residential uses. A single study estimated value premiums associated with a new enhanced bus/rapid bus route, finding a value premium of roughly 7.5 percent (approximately 25 to 30% less than dedicated lane BRT) for residential uses. Commercial property value premiums from bus transit have not been evaluated as rigorously as residential premiums in the available research, but our literature reviews show a substantial differential when it comes to light rail systems. Based on national studies of light rail, commercial value premiums are estimated at roughly 50 percent of residential premiums.

Given the lower reliance on transit in Ontario relative to the case studies, the scale of residential and commercial centers connected by the WVC (most systems studied provided a connection to the region's largest central business district), and qualitative differences of the transit offered, we estimate the following value premiums attributed to a dedicated lane BRT and mixed-lane rapid bus in Ontario. These assumptions should be viewed in light of the limited independent research on bus transit impacts available and should be considered as illustrative estimates.

Property Value Premium Assumptions

Premium Estimates	Residential / MF	Commercial
Dedicated Lane BRT	4 - 8%	2 - 4%
Mixed Lane Rapid Bus (Enhanced Bus)	2 - 4%	1% - 2%

Potential Building Capacity Assumptions

To determine a scale of development for each transit type, the estimated range of demand within the broader transit corridor, irrespective of transit, was used to make assumptions about the amount of demand that BRT and rapid bus improvements would help the 500-Foot Study Area capture. A dedicated-lane BRT is expected to help support the capture of the high end of the range of demand for office, retail and residential uses, while a mixed-lane rapid bus is projected to support proportionally 30 percent less development than the dedicated-lane BRT, based on the variation in value premium of the case studies.

Impact Results

Property Value Impacts

Dedicated-lane BRT and mixed-lane rapid bus are expected to impact the overall property value throughout the 500-Foot Study Area and help support the development of vacant parcels throughout the study area. Using the estimated premium assumptions, the analysis first estimates the increase in property value throughout the 500-Foot Study Area (premium property value) by applying the anticipated premiums for dedicated-lane BRT and mixed-lane rapid bus to the total assessed value of the study area. Using the assumptions of 2035 build out supported by each transit alternative, we estimate the property value of potential new development under the dedicated-lane BRT and the mixed-lane rapid bus alternatives. The

illustrative property impact in the 500-Foot Study Area at 2035 build out is shown on the next page. The low and high values represent the low and high range of the property value premium assumptions.

Illustrative Total Property Value Impact at 2035 Build Out in 2014 Dollars

	Projected Value Low	Projected Value High
Mixed-Lane Rapid Bus		
Property Value Premium	\$ 5,203,000	\$ 10,406,000
New Development Build Out	\$ 218,738,000	\$ 222,076,000
Total	\$ 223,941,000	\$ 232,482,000
Dedicated-Lane BRT		
Property Value Premium	\$ 10,406,000	\$ 20,812,000
New Development Build Out	\$ 295,686,000	\$ 304,572,000
Total	\$ 306,092,000	\$ 325,384,000

Illustrative Tax Impacts

Illustrative annual tax impacts (at 2035) are derived from the growth in assessed valuation and the potential new retail build out under each transit alternative. The table below presents the projected 1 percent property taxes and the share to the City of Ontario based on the City's share of the 1 percent property tax. Sales taxes are estimated based on the anticipated 2035 build out of retail under each transit alternative and the City's 1 percent share of sales taxes.

Dedicated-lane BRT is projected to generate an approximate \$200,000 in additional annual tax impacts relative to the mixed-lane rapid bus alternative.

Projected City of Ontario Incremental Annual Tax Revenues at 2035 Build Out in 2014 Dollars

	Low	High
Mixed-Lane Rapid Bus		
Annual Property Tax	\$ 2,239,000	\$ 2,325,000
City of Ontario Share (16.7%)	\$ 375,000	\$ 389,000
Sales Tax	\$ 203,000	\$ 203,000
City of Ontario Total	\$ 578,000	\$ 592,000
Dedicated-Lane BRT		
Annual Property Tax	\$ 3,061,000	\$ 3,254,000
City of Ontario Share (16.7%)	\$ 512,000	\$ 545,000
Sales Tax	\$ 271,000	\$ 271,000
City of Ontario Total	\$ 783,000	\$ 816,000

Net Present Value of Estimated Taxes

To provide an understanding of the overall value incremental tax revenues, the following table presents the 30-year net present value (NPV) of incremental taxes to the City of Ontario at a 5 percent discount rate, assuming an average between the high and low property impacts estimates. This estimate takes into account absorption of new development over time and Proposition 13 inflation limitations.

Net Present Value of 30 Year Tax Revenues

Tax Revenue	Mixed-Lane Rapid Bus	Dedicated- Lane BRT
Property Tax	\$4,050,000	\$5,680,000
Sales Tax	\$4,510,000	\$6,010,000
Total Discounted Tax Revenue	\$8,560,000	\$11,690,000

Economic Impacts

In addition to the value and tax impacts of the dedicated-lane BRT and mixed-lane rapid bus, these alternative transit systems will also support construction and ongoing activities and jobs within Ontario and the County of San Bernardino. Economic impacts are measured in terms of jobs, earnings and output. Total economic impacts represent (1) the initial impacts in Ontario generated by the construction and commercial activities within the 500-Foot Study Area plus (2) the indirect and induced impacts generated in San Bernardino County as a result of the re-spending of the initial impact dollars within the county economy.

Construction impacts will occur throughout the construction period as a result of the construction of the systems, while ongoing impacts will be annual impact generated as a result of the new commercial activities occurring in the 500-Foot Study Area.

Economic Impact Summary

Construction Impacts				
	Employment	Labor Income		Output
Mixed-Lane Rapid Bus				
Direct Effect	1,100	\$	64,119,000	\$ 158,694,000
Indirect Effect	266	\$	10,929,000	\$ 24,615,000
Induced Effect	304	\$	11,727,000	\$ 33,589,000
Total Rapid	1,669	\$	86,775,000	\$ 216,898,000
Dedicated-Lane BRT				
Direct Effect	1,465	\$	85,413,000	\$ 211,374,000
Indirect Effect	354	\$	14,554,000	\$ 32,779,000
Induced Effect	405	\$	15,620,000	\$ 44,742,000
Total BRT	2,224	\$	115,587,000	\$ 288,895,000
Ongoing Annual Impacts				
	Employment	Labor Income		Output
Mixed-Lane Rapid Bus				
Direct Effect	1,501	\$	66,804,000	\$ 183,479,000
Indirect Effect	295	\$	10,059,000	\$ 26,329,000
Induced Effect	311	\$	12,005,000	\$ 34,390,000
Total Rapid	2,107	\$	88,868,000	\$ 244,197,000
Dedicated-Lane BRT				
Direct Effect	2,001	\$	89,072,000	\$ 244,638,000
Indirect Effect	393	\$	13,412,000	\$ 35,105,000
Induced Effect	415	\$	16,006,000	\$ 45,853,000
Total BRT	2,809	\$	118,491,000	\$ 325,596,000

Funding

With the amendment of California Redevelopment Law leading to the dissolution of the Redevelopment Agencies in 2012, municipalities are left with limited capacity to obtain funding for key public benefit projects. HR&A has identified some of the most relevant key development-based funding sources that can be used to support transit and related improvements.

Enhanced Infrastructure Financing Districts (Enhanced IFDs), Tax Subventions, and potential Cap and Trade funds are the most advantageous identified sources of funding for the project, in that they do not impose any new tax or fee burdens on new development and will not impact the financial feasibility of future development.

- **Enhanced IFD** is a recently approved tax increment financing tool. It allows an infrastructure district, approved on a 55 percent property owner's vote, to bond property tax increment net of education-related funds to repay bonds for up to 45 years.
- **Tax Subvention** is a value capture strategy where the developer/property owner provides a certain level of public benefit upfront and a city agrees to provide back a share of taxes generated by the project to the developer/property owner in exchange. These incentives are negotiated on a project by project basis.
- **Cap and Trade Program** is a state funding statute that distribute proceeds from the trade of rights to produce greenhouse gas emissions. Roughly 60 percent of the proceeds, which contribute over \$800 million to the 2014-2015 budget, are allocated to public transit, affordable housing and sustainability.

In addition to the sources discussed above, assessments and fees are an option. However, the disadvantage of these sources is that they will put an additional financial burden on any new developments. Given the recent recession and overall improving but still weak real estate dynamics in the Inland Empire, additional assessments and fees may put the feasibility of development at significant risk.

Illustrative Funding Potential

The following table compares the illustrative funding potential from the identified funding sources relative to total system costs for dedicated-lane BRT and mixed lane rapid transit. These are estimates of total potential. Note that sales tax subvention arrangements are made on a project by project basis.

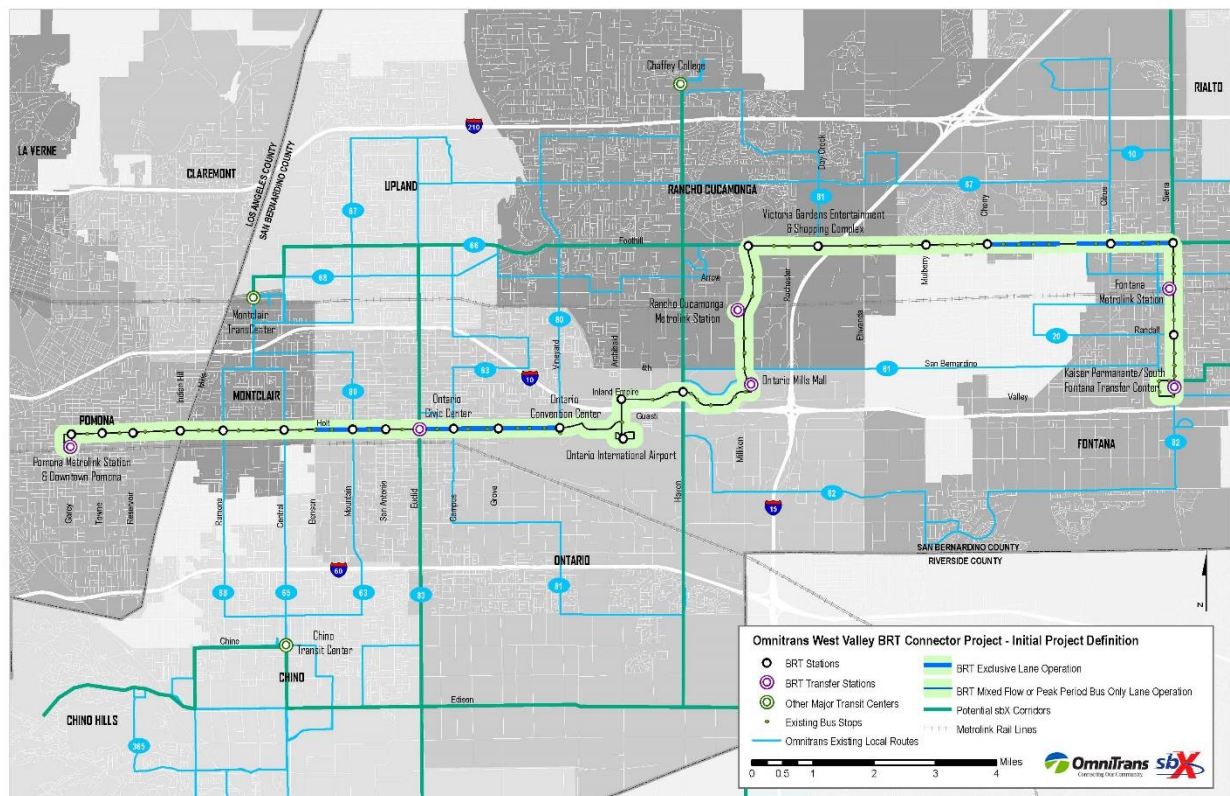
Potential Development Funding	Rapid Bus	BRT
Enhanced IFD Revenue Capacity	\$9.5 M	\$13.3 M
Sales Tax Subvention Value	\$2.9 M	\$3.8 M
Cap and Trade	TBD	TBD
Development Revenue Potential	\$12.4 M	\$17.6 M
Segment System Capital Costs	\$4.8 M	\$50M to \$70M
Funding Gap	-	\$32.4 M - \$52.4 M

Context

The WVC begins in Pomona and runs along Holt Boulevard until Archibald Avenue, where it turns north and eventually runs east on Foothill Boulevard and south on Sierra Avenue to its terminus at the Fontana Transit Center. The WVC combines the extensively used OmniTrans Route 61 and Route 66 existing bus routes.

The City of Ontario's existing streetscape plan for Holt Boulevard included dedicated lane BRT along the WVC segment in Ontario and as a result, one of the options for the WVC includes this portion of dedicated-lane BRT in the city of Ontario as part of the larger mixed lane system.

Figure 1: West Valley Connector Map



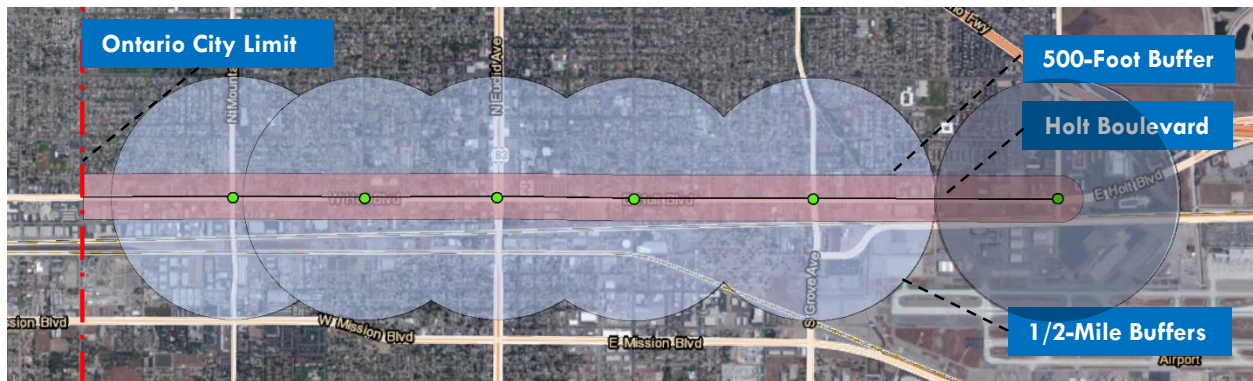
Source: OmniTrans West Valley Connector Corridor Alternatives Analysis Report

Study Areas

The project study area includes the portion of the WVC between Benson Avenue and Vineyard Avenue. This includes six WVC stations along Holt Boulevard at the intersections of Mountain Avenue, San Antonio Avenue, Euclid Avenue, Campus Avenue, Grove Avenue, and Vineyard Avenue.

The demographics, market analysis, and real estate analysis sections evaluate a half-mile buffer area of the six WVC stations from Mountain Avenue to Vineyard Avenue (Half-Mile Study Area). In the impact section we also evaluate impacts within a 500 foot buffer of Holt Boulevard, from Benson Avenue to Vineyard Avenue, to better understand the impacts within the immediate area of the corridor (500-Foot Study Area).

Figure 2: 500-Foot and 1/2 Mile Study Areas



Assets

The WVC connects western San Bernardino County's major economic nodes and many of these important assets are located in Ontario, including Ontario Airport, Downtown Ontario, and the Ontario Convention Center. Downtown Ontario has a historic core, with a more compact and pedestrian-friendly street grid than other neighborhoods within the city. There is a library, a range of retail and a diverse set of residential neighborhoods. Downtown Ontario is witnessing a revitalization. Higher-density residential communities have developed in the area close to Euclid Avenue. The Half-Mile Study Area passes through historic Downtown Ontario, the Civic Center, and the Ontario Convention Center. The Ontario Convention Center includes over 225,000 square feet of flexible space and hosts hundreds of events each year and there are many hotels near the Ontario Airport and Convention Center.

Figure 3: Map of Assets



Source: OmniTrans West Valley Connector Corridor Alternatives Analysis Report

The Ontario Airport is just west of the Half-Mile Ontario Holt Corridor. The Ontario Airport is home to eight airlines with 60 daily domestic and international flights, including nonstop flights to 14 cities. Passenger traffic to the airport peaked in 2007 with over 7.2 million passengers; in 2013 there was just under 4 million passengers. However, passenger traffic has increased 3 percent over the first eight months of 2014 as compared to the same period in 2013. The Vineyard Avenue station will provide access to airport hospitality uses, but is west of the key Ontario Airport entrance. The Ontario Airport will have a direct link to the Archibald Avenue exit. Beyond the Half-Mile Study Area, the future bus system will have stops with access to the 11,000-seat Citizens Bank Arena, Ontario Mills and the Cucamonga-Guasti Regional Park.

Ridership

The Half-Mile Study Area falls within Route 61 of OmniTrans' current network. Route 61 is the highest ridership route in the OmniTrans system, providing more than 1.86 million boardings in 2012 and approximately 5,800 boardings per average weekday. This represents approximately 11.5 percent of OmniTrans total system ridership. Route 61 serves 92 local stops along the corridor in each direction, with an average of 4.5 stops per mile in each direction in the corridor.

Route 61 has consistently generated the highest ridership of all OmniTrans routes since 2006, when a route restructuring took effect. Since 2006, ridership in the corridor has remained the highest in all of OmniTrans' service area and has remained steady, monthly and annually. The stops located along the Half-Mile Study Area are some of the busiest in the current system.

Figure 4: Ontario Route 61 Major Intersection/Activity Center

Ranking	Intersection	Boardings	Alightings
2	Ontario Mills TC	861	808
7	Holt at San Antonio	220	218
8	Ontario TransCenter (Holt and Euclid)	224	204
10	Holt and Vineyard	134	171
12	Holt and Mountain	108	129
14	Holt and Campus	108	123
18	Ontario Mills	79	69
20	Holt and Grove	56	72

Source: OmniTrans West Valley Connector Corridor Alternatives Analysis Report

Along the Route 61 Holt Boulevard, between Mountain Avenue and Vineyard Avenue in Ontario, traffic volumes are projected to more than double in both peak periods by 2035. It is anticipated that bus ridership will increase in kind.

Demographic Overview

The Inland Empire

The city of Ontario is located in the heart of the Inland Empire, a region east of Los Angeles comprising Riverside and San Bernardino Counties. With relatively inexpensive land compared to Los Angeles County and a prime location amidst a network of regional highways and railways, the Inland Empire was one of the fastest-growing regions of the country in the early 2000s, attracting many new residents from the coastal

counties. The Inland Empire achieved a high annual growth rate of 3.2 percent per year between 2000 and 2006.

The Inland Empire was severely impacted by the recent economic downturn and the annual population growth rate fell to almost half, 1.7 percent per year, between 2006 and 2010. Since the recession, the regional economy has improved and population growth continues, but at a slower pace, 0.8 percent per year. On the economic front, San Bernardino and Riverside counties are expected to be one of the top five economic growth regions in the next few years, according to a study prepared by IHS Global Insight.

Ontario Demographics

As a more established city, Ontario's population growth in the last decade was lower compared to the Inland Empire as a whole. The population of the city of Ontario, increased by almost 7,000 from 157,034 to 163,924 between 2000 and 2010, an annual growth rate of 0.43 percent. There are currently 45,874 households in Ontario, with a median annual household income of \$52,889. As compared to the rest of the city, the 7,943 households residing in the Half-Mile Study Area have a median of \$37,762, and 17.8 percent of these households earn less than \$15,000 annually.

Figure 5: Ontario City and Half-Mile Study Area Demographic Snapshot in 2014

	Half-Mile Ontario Holt Corridor	Ontario
Demographics		
Persons	31,263	167,663
Households	7,943	45,874
Persons / Square Mile	7,533	3,353
Age Distribution		
Percent 14 and Under	28.5	23.9
Percent 15 to 24	17.7	16.8
Percent 65 and Over	5.1	7.6
Household Income and Unemployment		
Percent Household Income <\$15k	17.8	9.6
Median Household Income (2014)	\$37,762	\$52,889
Percent Unemployed (16+)	14.9	12.1
Housing		
Percent Renter-Occupied	64.4	43.6
Total Housing Units	8,715	48,631
Housing Units / Total Acre	3.3	1.5

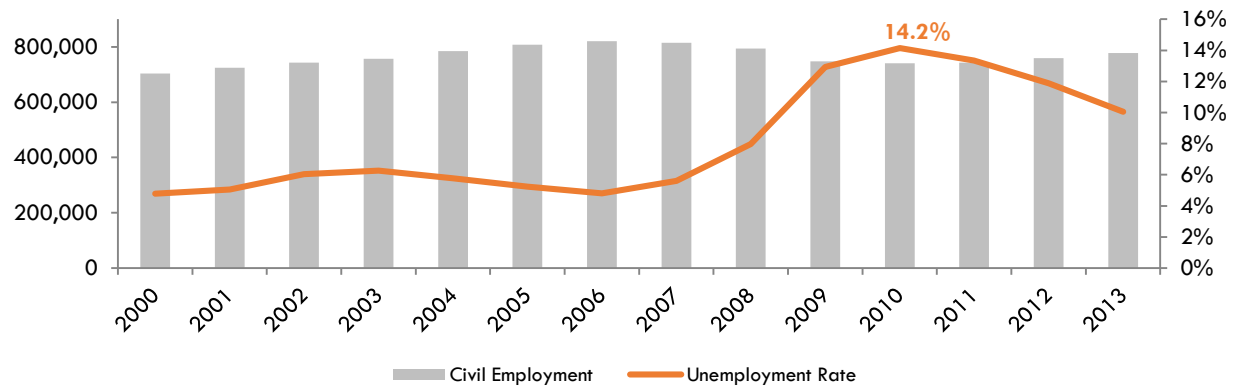
Source: ESRI Community Profile

Employment and Economic Overview

The Great Recession was closely tied to the housing crisis which led to a decline in housing prices across the nation, including a precipitous drop in the Inland Empire. With the substantial residential growth in the Inland Empire, its economy was hit particularly hard by the housing crisis and subsequent recession. The region had higher levels of unemployment relative to other Southern California counties during the recession. Over 146,000 jobs were lost between 2008 and 2010.

Since 2011, employment has begun to bounce back and the economy is improving. There are encouraging signs of growth in the region. Despite still lagging behind California and the nation, the unemployment rate in the region has improved. In August 2014, the unemployment rate was 8.7 percent in the Inland Empire according to data from the California Employment Development Department.

Figure 6: San Bernardino County Employment

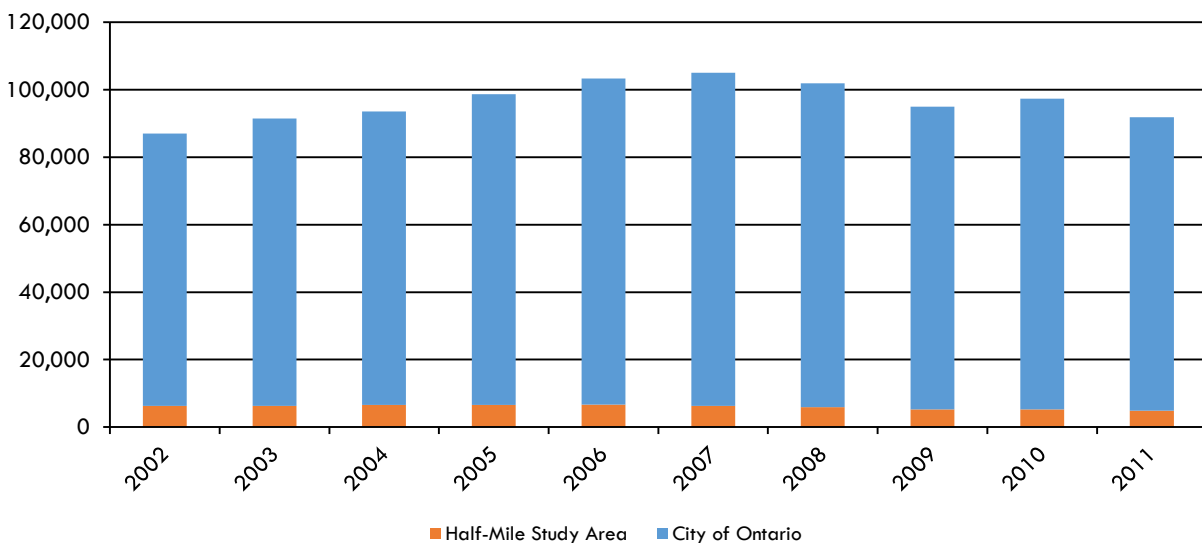


Source: California EDD

Ontario Area Employment

As of 2011, over 87,000 people worked in the city of Ontario, nearly 5,000 of whom worked within the Half-Mile Study Area. The number of jobs within the Half-Mile Study Area has been steadily declining. While there was growth in the city of Ontario between 2005 and 2007 and 2009 – 2011, this growth occurred outside of the Half-Mile Study Area.

Figure 7: Ontario City and Half-Mile Study Area Total Employment

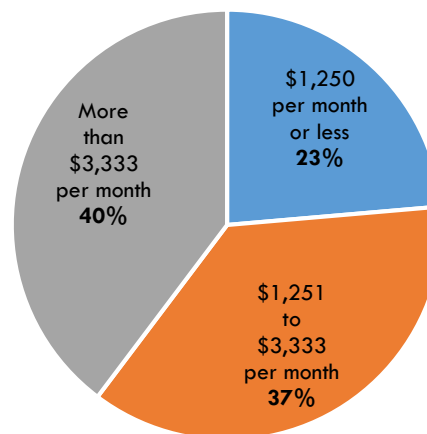


Source: Census on the Map

Approximately 42 percent of those employed in the city of Ontario make between \$15,000 and \$40,000 per year; by contrast, only 37 percent of those employed in the Half-Mile Study Area earn within that range.

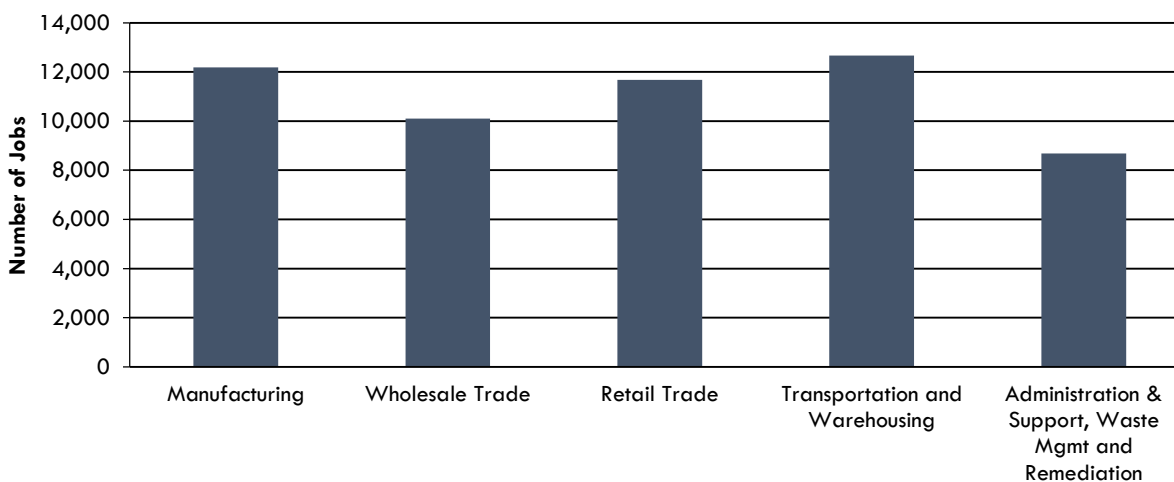
Over a quarter of the jobs in the city of Ontario are in transportation and warehousing or manufacturing.

Figure 8: Income Distribution of Jobs in the Half-Mile Study Area in 2011



Source: Census on the Map

Figure 9: City of Ontario Top Five Employment Sectors



Source: Census on the Map

Ontario Real Estate Overview

Office Market Conditions

Historically, the Inland Empire was a smaller employment center relative to Los Angeles and Orange counties, with many of its residents commuting to these counties for work. However, with the significant population growth that occurred in the Inland Empire since 2000, San Bernardino has become a major center of industry.

Throughout the Inland Empire, the office market is slowly beginning to improve after the Great Recession, particularly in the second quarter of this year. During the second quarter of 2014, there was 267,604 square feet of positive net absorption throughout the Inland Empire, and all submarkets experienced positive

net absorption. The average asking lease rate in the second quarter of 2014 was \$1.76 per square foot, the fourth of four consecutive quarters of increases. The vacancy rate decreased over the quarter from 18.0 percent to 17.1 percent.

The City of Ontario has the most office space in the Inland Empire, and is where the majority of Class A office space in the region is located. One of the largest concentrations of San Bernardino's Class A office space is located in Ontario in the Ontario Center/I-15 Freeway area.

There is 5.1 million square feet of office space in Ontario, 20 percent of which is located in the Half-Mile Study Area. As shown in the map in Figure 10 below, much of the office space in Ontario is concentrated along the Half-Mile Study Area and in the Ontario Center area between Archibald Avenue and Milliken Avenue.

The only new construction within Ontario since 2010 took place in the Half-Mile Study Area. In 2013, four buildings delivered a total of 76,374 square feet of new office space. A new 58,000 square foot Class A office building opened at the corner of Euclid Avenue and Holt Boulevard in 2014, the De Oro Professional Building, which is now entirely leased. The De Oro building represents the only Class A space within the Half-Mile Ontario Holt Corridor.

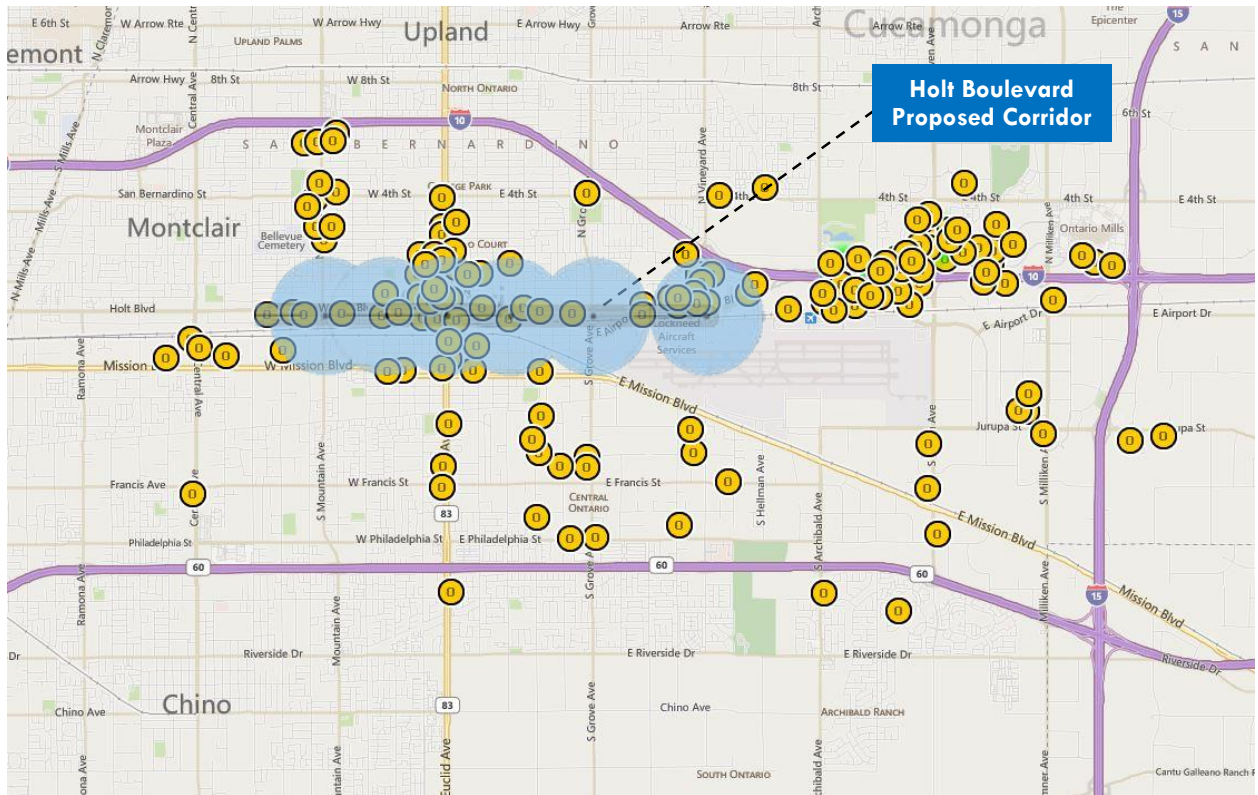
Within the Half-Mile Study Area, the average asking rent for office space across a range of currently available properties is \$16.74 per square foot. Office properties in the Half-Mile Study Area have a vacancy rate or roughly 20 percent.

Figure 10: Snapshot of Office Properties

	Half-Mile Study Area	Ontario
Total Rentable Area (SF)	1,043,860	5,130,003
Rent	\$16.74	\$19.95
Vacancy	20%	18%
Number of Buildings	115	312
Class A (% of SF)	6%	32%

Source: CoStar

Figure 11: Ontario Office Buildings



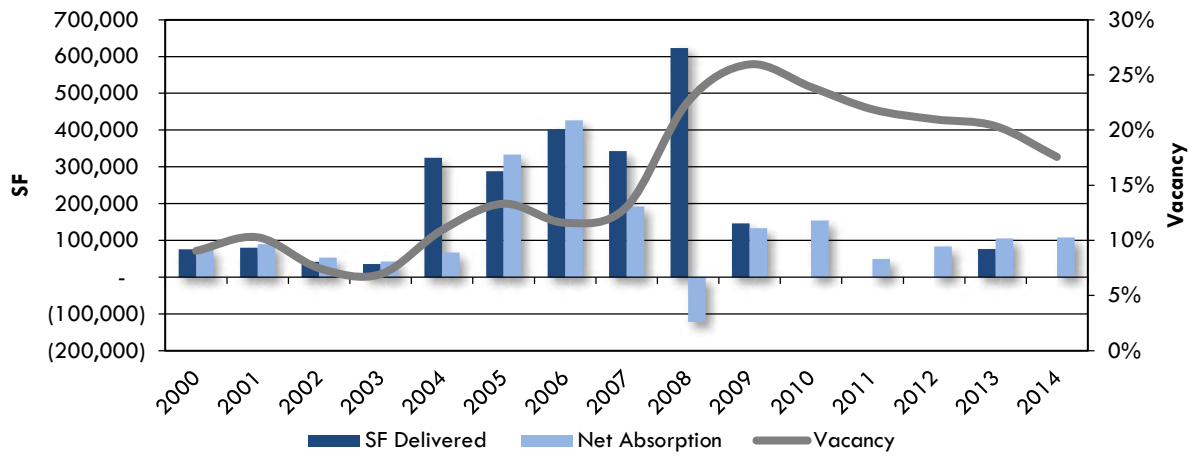
Source: CoStar

Office Performance Trends

As shown in Figure 12, between 2000 and 2006 the vacancy rate of the Ontario office market ranged between 5 and 12 percent. While absorption fell in 2007, 1.9 million square feet of office space was added to the market between 2004 and 2008. As a result, vacancy rates jumped to a high of almost 25 percent by 2009. Rates have been gradually falling since the peak in 2009 as more of the new space is absorbed.

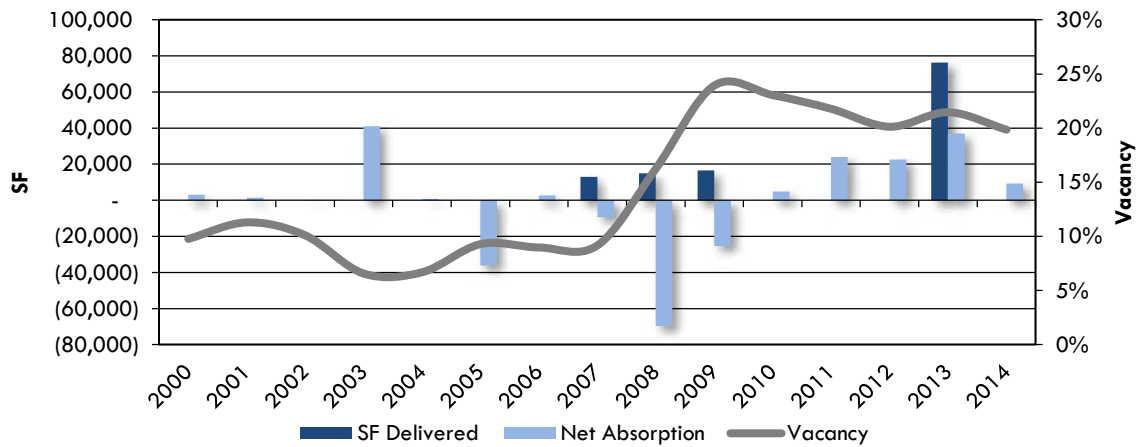
The office market has historically performed better in the city of Ontario than within the Half-Mile Study Area as shown in Figure 12 and Figure 13 on the next page. Net absorption, a measure of the amount of space leased less the amount of space vacated, within the city has remained positive other than in 2009 and vacancy rates have remained lower as compared to the Half-Mile Study Area. Net absorption within the Half-Mile Study Area has remained positive since 2010, including for the delivery of 76,374 additional square feet of office space in 2013.

Figure 12: Office Deliveries, Absorption & Vacancy in the City of Ontario



Source: CoStar

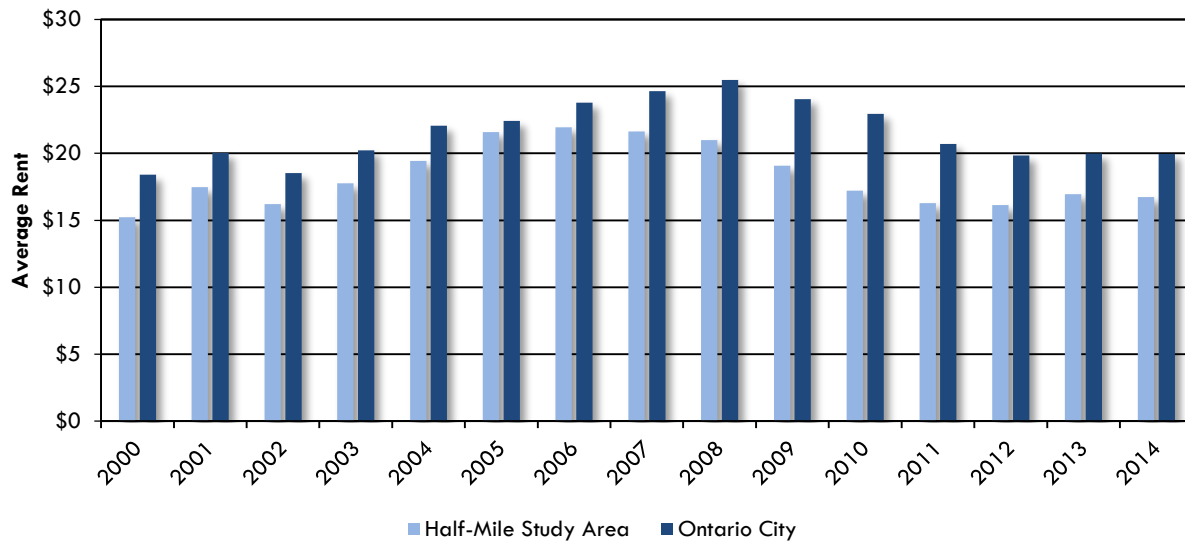
Figure 13: Office Deliveries, Absorption & Vacancy in the Half-Mile Study Area



Source: CoStar

As shown in Figure 14 below, rents in Ontario are consistently higher than within the Half-Mile Study Area, averaging \$19.95 per square foot in 2014, as compared to around \$16.73 in the Half-Mile Study Area.

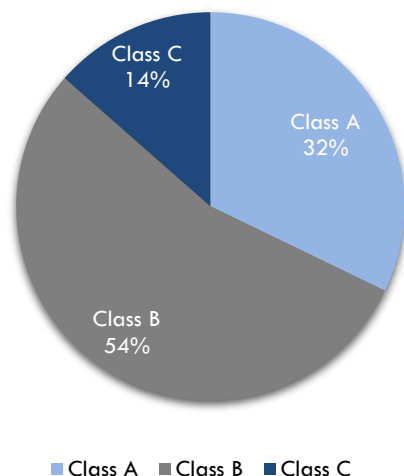
Figure 14: Average Office Rent Half-Mile Study Area and City of Ontario



Source: CoStar

Ontario Office Characteristics

Figure 15: Office Rentable Building Area by Class in the City of Ontario



The majority of the approximately 300 office buildings in the city of Ontario are relatively small – only 18 buildings are over 100,000 square feet. As shown in Figure 15, the city of Ontario office market consists predominantly of Class B office space (2.8 million square feet), with a sizable amount of Class A (1.7 million square feet) and Class C (701,439 square feet) office space.

Source: CoStar

The ten largest office buildings along the Half-Mile Study Area are listed below.

Figure 16: Office Buildings in the Half-Mile Study Area

Building Address	Year Built	Rentable Building Area	Building Class
430 N Vineyard Ave	1989	96,354	B
2151 E Convention Center Way	1984	73,778	B
337 N Vineyard Ave	1983	61,056	B
101 S Euclid Ave	2014	58,000	A
2143 E Convention Center Way	1986	51,523	B
211 W Emporia St	1952	40,000	C
1801 E Holt Blvd	2013	34,588	B
1627 E Holt Blvd	1993	33,000	B
1637 E Holt Blvd	1999	26,284	B
1647 E Holt Blvd	1999	26,250	B

Source: CoStar

Recent, Planned, and Proposed Office

One recent notable development in the city of Ontario is the Piemonte at Ontario Center. The site is northeast of the Half-Mile Study Area, located adjacent to the Ontario Mills Mall. The Piemonte District is a special zone within the Ontario Center Specific Plan. Located just north of the Citizens Bank Arena, it will include 830,000 square foot mixed-use development, to be built in three phases over 15 years. It is anticipated to have 400,000 square feet of retail, 550,000 square feet of Class A office space, and a 200-room hotel. The first phase, consisting of over 200,000 of square feet of retail and 125,000 of office space was completed in 2008.



Piemonte at Ontario Center

Source: Sierra US

Just west of the Half-Mile Study Area along Holt Boulevard at Benson Avenue, the Ontario Airport Corporate Park was completed in 2013 and houses over 75,000 square feet of Class B office space.



Ontario Airport Corporate Park

Source: CBRE

Retail Market Conditions

At the end of 2013, as the broader economy improved and national retail sales improved, there were modest improvement in the retail real estate sector throughout the Inland Empire. Vacancy rates throughout the Inland Empire decreased during the last quarter of 2013, and CBRE projects that the trend will continue. In the region generally, Ontario outperforms its neighbors. The retail vacancy rate throughout the Inland Empire West submarket (which includes the City) had a vacancy rate of 6.5 percent, significantly lower than other submarkets like the adjacent Inland Empire East submarket, which had a vacancy rate of 16.1 percent. Rental rates throughout the region are also showing signs of improvement, increasing by three cents in the last quarter of 2013 after holding steady for the two prior quarters.

Recently, there have been modest improvements in the retail sector in Ontario. Despite a small uptick in 2014 to date, vacancy rates in retail shopping centers have decreased since 2009. After peaking in 2007, rental rates in retail shopping centers in Ontario have steadily declined. Retail located outside of shopping centers has been more variable, but has broadly followed the same trends.

Ontario Shopping Center Retail

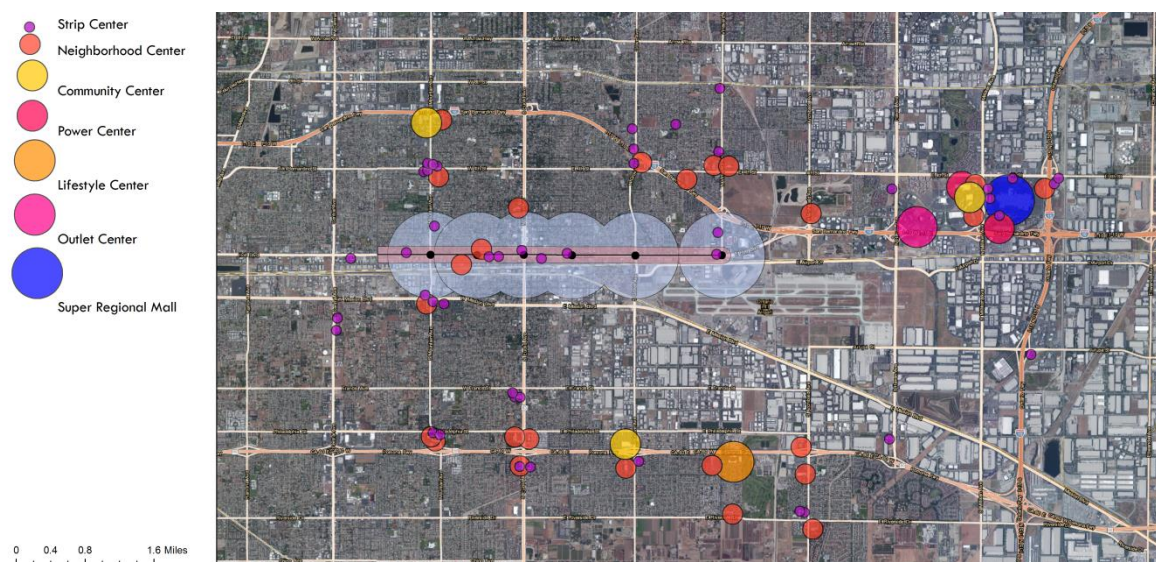
The Ontario retail market is largely driven by clusters of shopping centers. With over 200 stores, the most significant shopping center in the region is the Ontario Mills Mall, the largest outlet mall in California. Ontario Mills is located northeast of the Half-Mile Study Area, near the intersection of the Interstate 10 and 15 Freeways. Other significant shopping centers are clustered around Ontario Mills, including the Ontario Gateway Center and the Marketplace at Ontario Mills.

In the second quarter of 2014, there was 5.8 million square feet of retail located in shopping centers, mostly clustered near the 10 and 60 freeways.

The two shopping centers located within the Half-Mile Study Area are the Ontario Towne Center and Ontario Village. Both shopping centers are neighborhood centers, anchored by grocery stores. Ontario Towne Center was built in 2005 and is located on the south side of Holt Boulevard between Mountain Avenue and San Antonio Avenue. Ontario Village was built in 1988 and is located on the north side of Holt Boulevard between San Antonio Avenue and Vine Avenue.

Retail in shopping centers performs significantly better than retail not in shopping centers. The average asking rent for retail spaces in shopping centers within the Half-Mile Study Area is currently \$1.38 per month per square foot, whereas for properties that are not within shopping centers the rent is \$0.68 per month per square foot.

Figure 17: Retail Located in Shopping Centers in the City of Ontario



Source: CoStar, Google Maps

Figure 18 presents the distribution of corridor retail into shopping center and non-shopping center retail.

Figure 18: Distribution of Retail in the Half-Mile Study Area

	Total Rentable Area (SF)	Percentage of City of Ontario Retail
In Shopping Centers (SF)	291,516	4.8%
Outside Shopping Centers (SF)	1,669,738	29.6%

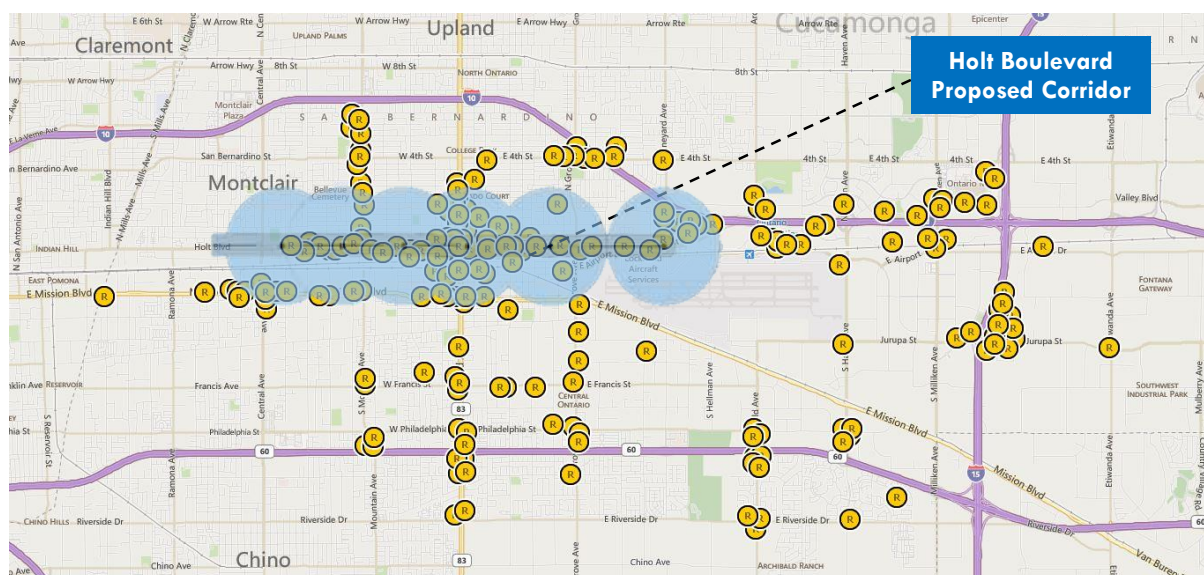
Source: CoStar

Ontario Non-Shopping Center Retail

There is nearly 4 million square feet of non-shopping center retail in the city of Ontario, a number which has been contracting since the end of 2008. This retail space is largely clustered close to Holt Boulevard. As shown below in Figure 19, the non-shopping center retail located within the Half-Mile Study Area has broadly performed in-line with the retail throughout the city. After dropping significantly during the Great Recession, lease rates have recently begun to recover. The average rent within the Half-Mile Study Area for non-shopping center retail is significantly lower than throughout the city, at \$8.87 per square foot, compared to \$12.55 per square foot in the city of Ontario.

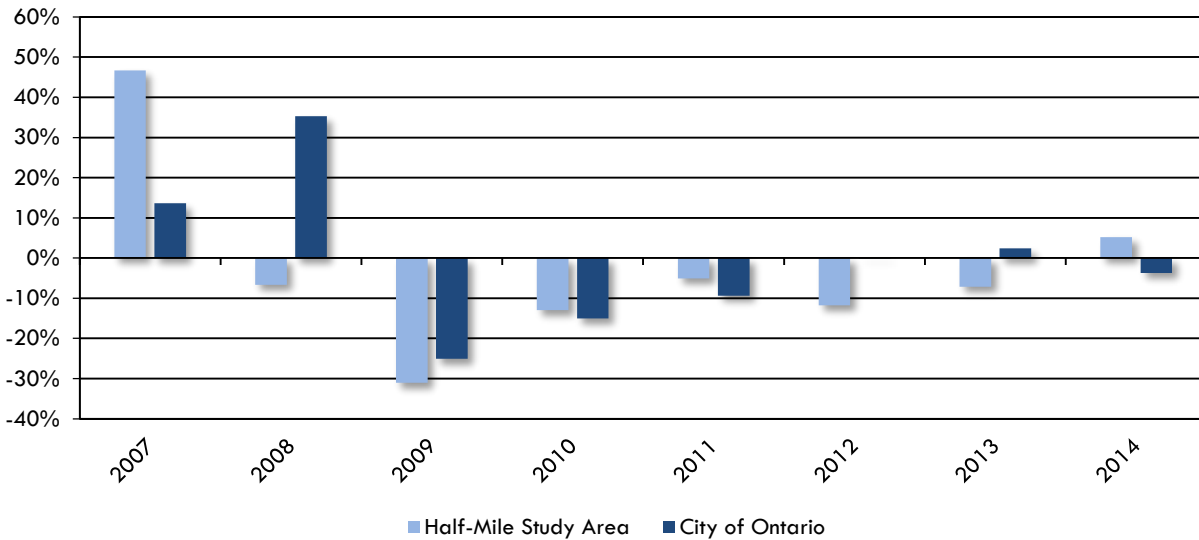
The vast majority of non-shopping center retail was built in the 1950s through 1980s, and there has been no new development since 2007. A significant portion of these retail properties are auto dealerships or auto repair shops.

Figure 19 Retail Not in Shopping Centers in Ontario



Source: CoStar

Figure 20: Retail Rent Growth (Not in Shopping Center)

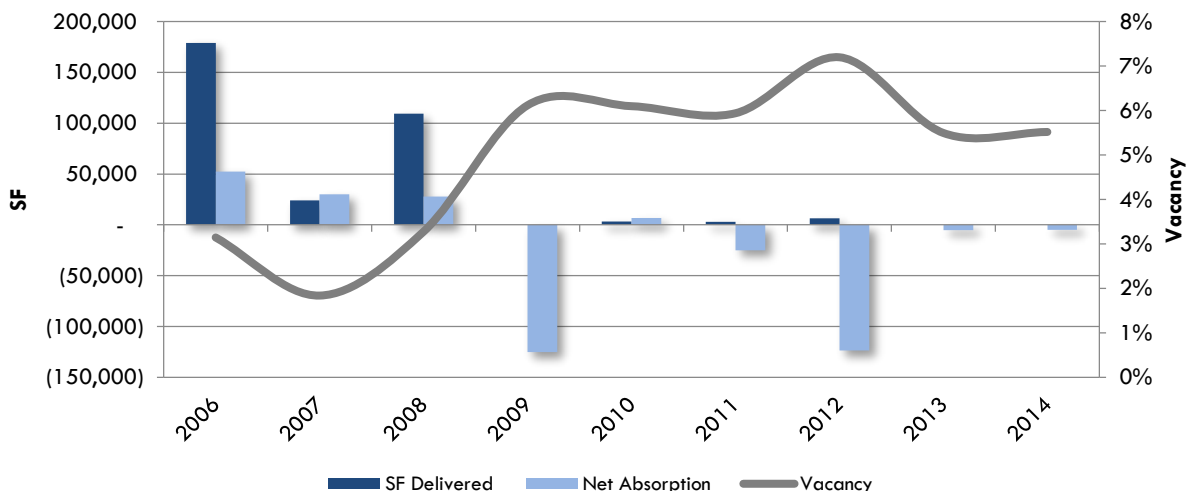


Source: CoStar

There has been very little new construction in either the Half-Mile Study Area or the city of Ontario. The most recent construction within the Half-Mile Study Area was in 2007, when 5,550 square feet of non-shopping center retail was delivered. Throughout the Ontario, there has been very little new retail construction, with only 12,939 square feet of non-shopping center retail and no shopping center retail delivered since 2010.

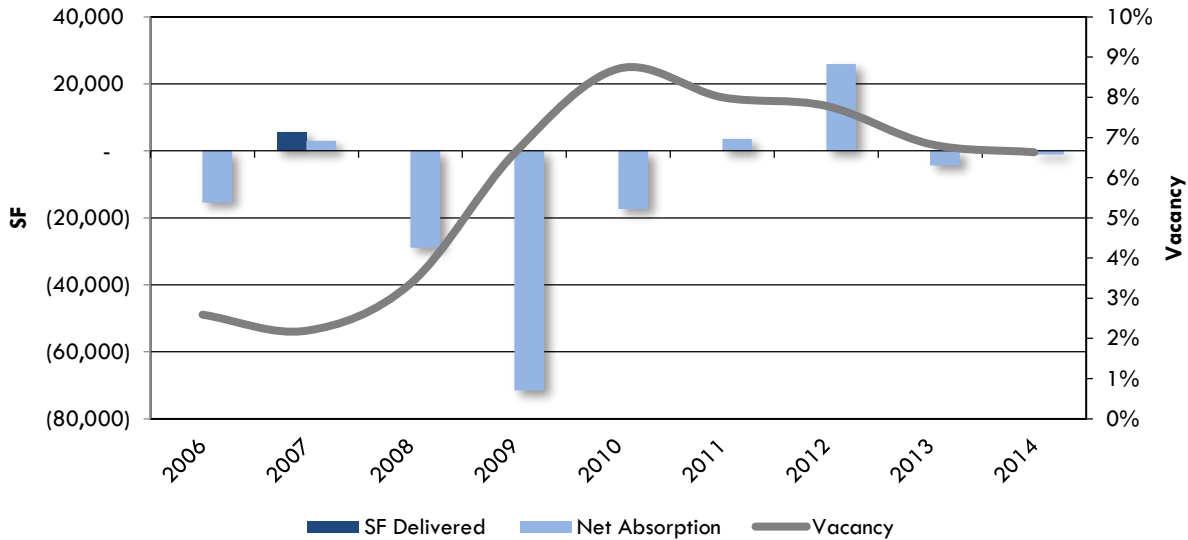
As shown below in Figure 21, non-shopping center retail vacancy rates within the Half-Mile Study Area have improved, and are now below 7 percent, down from their peak of nearly 9 percent in 2010. Within the broader City of Ontario, non-shopping center vacancy rates have been much more variable though they have generally been lower than the study area.

Figure 21: City of Ontario Deliveries, Absorption & Vacancy (Not in Shopping Center)



Source: CoStar

Figure 22: Half-Mile Study Area Deliveries, Absorption & Vacancy (Not in Shopping Center):

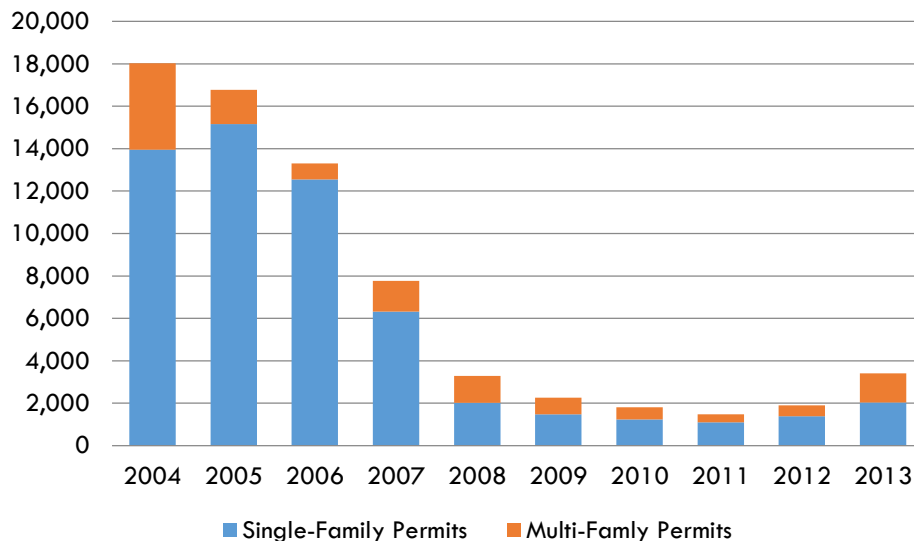


Source: CoStar

Residential Market Conditions

The Inland Empire housing market is affordable compared to neighboring Los Angeles and Orange counties, and it has the most available developable land in Southern California. Fueled by a growing economy and the creative mortgage products that were available, housing prices began to grow in Southern California between 2000 and 2007 and, as shown by building permit data, a significant amount of housing was developed within both San Bernardino and Riverside County.

Figure 23: County of San Bernardino Building Permits

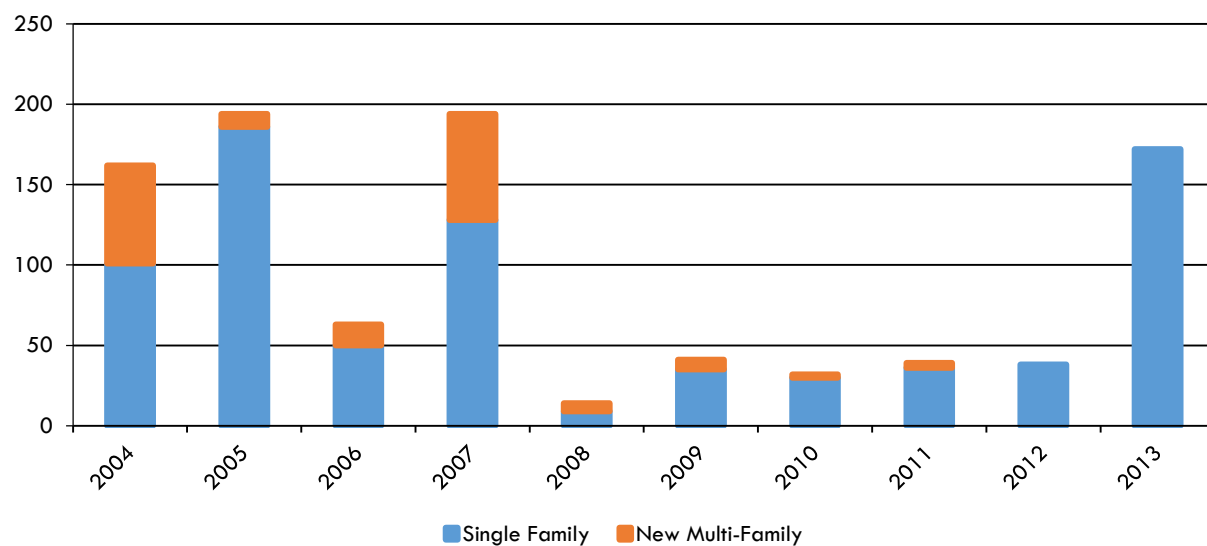


Source: U.S. Department of Housing and Urban Development

Building permit data reflects the scale of residential development being constructed in San Bernardino and the city of Ontario. Pre-2006, there was significant housing development in the Inland Empire, but as shown in Figure 23, San Bernardino County permits dropped substantially in 2007 and 2008, and are just beginning to grow. As an established city, Ontario made up a smaller share of countywide permits, but as a city located on the western edge of the Inland Empire, close to employment centers in Los Angeles and Orange counties as well as San Bernardino, Ontario is a desirable housing location.

As shown below in Figure 24, following a dip after the Great Recession, residential building permits in the City of Ontario have begun to pick up – in the 2012 calendar year, only 38 permits were issued for single-family housing, as compared with 172 permits this year.

Figure 24: City of Ontario Building Permits



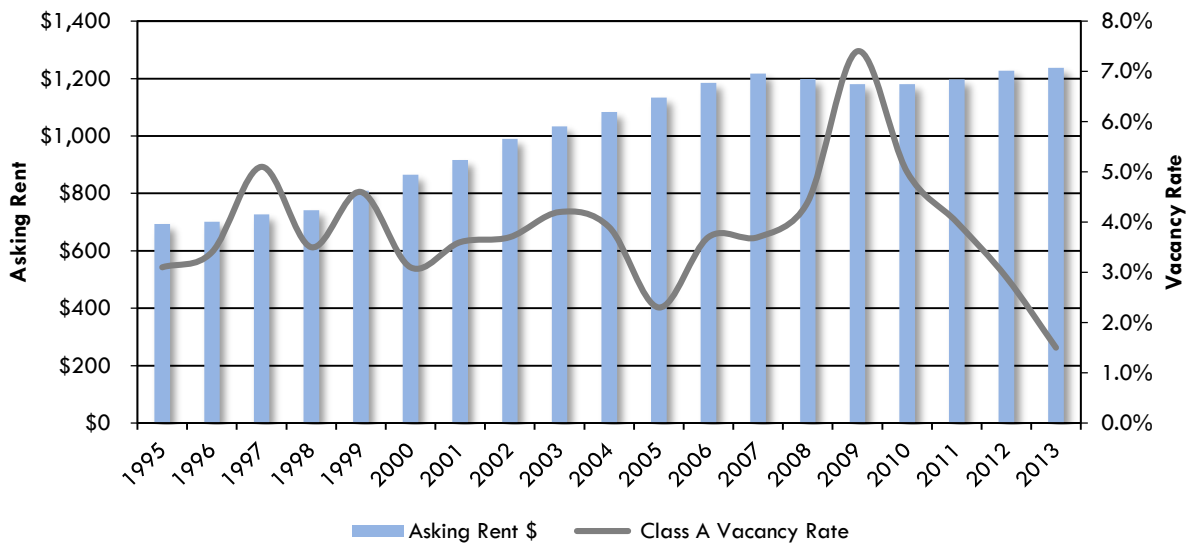
Source: City of Ontario Building Department

Rental Residential

Rental residential has been one of the best performing land uses in the Inland Empire since the recession.

REIS reports on the performance of Class A rental residential in the north Ontario submarket. Ontario vacancy rates are extremely low at, 1.5 percent. Vacancy rates peaked in 2009, but rental residential prices only declined slightly between 2007 and 2009. The average rent in 2013 was \$1,238, and has risen consistently following a slight dip during the recession years of 2008 and 2009. Since 2009, there has been a net absorption of 508 additional units, however, inventory has remained relatively constant, generating the current low vacancy rate.

Figure 25: N. Ontario Submarket, Asking Rent & Vacancy Rate (Class A)



Source: REIS

The Inland Empire has long been a site for single-family residential development. However, in recent years, there has also been a slate of new multi-family development. Located due south from the Half-Mile Study Area, the Grove at Philadelphia, a 258-unit apartment complex completed in 2009 has apartments ranging from one- to three-bedrooms, with rents between \$1,403 and \$2,085.

Located in Ontario's Downtown, the Ontario Town Square development project is a \$200 million pedestrian-oriented development including 800 housing units and 72,000 square feet of ground floor retail and a park. The Colony at Ontario Square is a luxury residential mid-rise, multi-family apartment complex completed in 2009 with 160 units, consisting of one- and two-bedroom apartments that range in size from 762 square feet to 1,115 square feet, with prices ranging from \$1,285 to \$1,512. Another project in the complex, the Ontario Town Square Kincaid Series Town Homes, consists of mid-rise townhomes of two-bedroom units with loft spaces. The complex was built in 2009 and has 140 units. These units consist of two bedroom triplex townhomes ranging in size from 1,421 square feet to 1,647 square feet, with prices ranging from \$1,649 to \$1,949.

The Grove at Philadelphia and the Ontario Town Square developments all boast occupancies of between 96 and 99 percent.



The Grove at Philadelphia Apartments



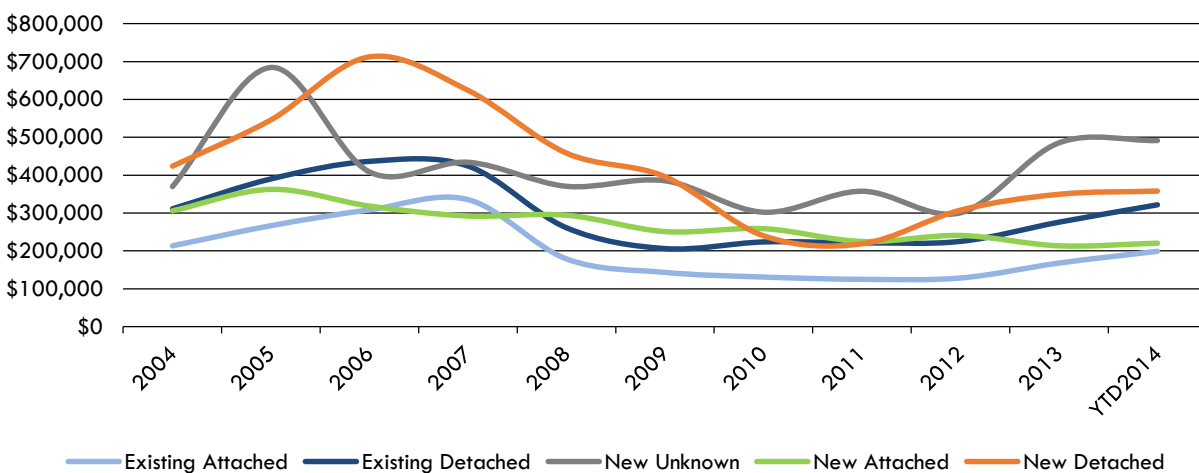
The Colony at Ontario Square

For-Sale Residential

Home prices suffered during the Great Recession, but have begun to recover. Very few multifamily projects are for sale within the Half-Mile Study Area, with no properties available that were built since 1982. The median price per square foot for the properties currently available is \$183. As shown in Figure 26 below, home prices are beginning to recover since the recession, but have not reached the peak levels seen in 2005 and 2006 for new home construction.

As shown in Figure 26 below, home prices for new single-family homes peaked in 2007 at an average sale price of \$624,000, and have been slow to recover. 2014 sales prices are \$358,000 – still only 57 percent of the peak in 2007. New multifamily homes peaked in 2005 at \$363,000, and hit a low of \$251,000 in 2009. 2014 sales prices for new multifamily housing are now \$220,000 – 61 percent of the peak values from 2006. Existing home prices did not suffer as dramatically – peak prices for existing single family and multifamily homes were \$437,000 and \$335,000, respectively, and are now \$322,000 and \$199,000.

Figure 26: City of Ontario Home Prices



Source: DataQuick; DQNews.com

Planned and Proposed Residential

The New Model Colony development is a large master planned community that will be home to about 120,000 new residents and include approximately 30,000 new homes and nearly a dozen schools as it is developed over the next several decades. The site is located south of the Half-Mile Study Area, on 13 square miles at Riverside Drive and Euclid Avenue. Infrastructure development is currently underway at the site.

Demand Analysis

The demand analysis estimates the support for key land uses within the 500-Foot Study Area based on current anticipated employment and residential growth within the city of Ontario.

Office Demand

Office demand is estimated based on the anticipated growth of employment within the city of Ontario. US Census OntheMap data is used to benchmark current city of Ontario employment and historical employment growth. Historical city growth by industry and projected County employment growth by industry are both evaluated to estimate Ontario's future employment growth (Appendix Figure 1).

Using estimated industry growth rates and an assumption of office employment by industry, we estimate future office employment growth. Future office employment growth is translated into projected office demand within the city of Ontario based on an estimate of 300 square feet per employee. Ontario currently has a high vacancy rate of approximately 17.6 percent and much of this vacant space is likely to be absorbed before new office is developed. Assuming a structural vacancy of approximately 10 percent, existing vacant space above 10 percent is subtracted from the gross demand.

Capture rates are then applied to estimate the share of office that can be captured within the Corridor. Currently the Half-Mile Ontario Holt Corridor represents 20 percent of office space. The Corridor is adjacent to the airport, but a few miles away from the concentration of Class A office located near the Ontario Center and I-15 Corridor. It should be noted that the Corridor is not a major office area and, at this time may not achieve sufficient rents to support new development. However, as other areas get built out, office near the airport may build out. We estimate that the Half-Mile Study Area capture may range from a low of 7.5 percent to 12.5 percent of the city of Ontario.

We anticipate the majority of office and commercial development to occur specifically adjacent to Holt Boulevard within the 500-Foot Study Area and thus the Half-Mile Study Area capture is consistent with the capture of new office anticipated within the 500-Foot Study Area.

Office Results

The office demand analysis is shown in Figure 27. Based on the methodology described above we project that office employment will grow by 17,000 jobs throughout the city of Ontario in 2035, supporting up to 4.8 million square feet of new office space. Once financially feasible, the Corridor may capture an aggregate 360,000 to 600,000 square feet of space by 2035.

Figure 27: Office Demand

Projected Office Employment	Office Using	2014	2015	2020	2025	2035	Change '14 - '20	Change '20 - '25	Change '25 - '35	Cumulative (2014 - 2035)
Agriculture, Forestry, Fishing and Hunting	5%	36	35	28	22	14	0	0	0	0
Mining, Quarrying, and Oil and Gas Extraction	5%	0	0	0	0	0	0	0	0	0
Utilities	20%	140	145	172	205	290	32	33	85	150
Construction	20%	574	583	628	677	785	54	49	109	211
Manufacturing	10%	1,146	1,108	938	793	567	0	0	0	0
Wholesale Trade	15%	1,648	1,683	1,869	2,076	2,560	221	207	485	912
Retail Trade	10%	1,309	1,329	1,433	1,546	1,798	124	112	252	488
Transportation and Warehousing	10%	1,443	1,481	1,685	1,918	2,484	242	233	566	1,041
Information	60%	1,128	1,115	1,050	990	879	0	0	0	0
Finance and Insurance	100%	2,346	2,402	2,705	3,045	3,860	359	340	815	1,514
Real Estate and Rental and Leasing	90%	1,090	1,095	1,122	1,151	1,209	33	28	58	119
Professional, Scientific, and Technical Services	95%	3,581	3,739	4,637	5,751	8,845	1,056	1,114	3,094	5,264
Management of Companies and Enterprises	100%	2,263	2,292	2,442	2,603	2,956	179	160	353	693
Administration & Support, Waste Management and Remediation	80%	8,165	8,308	9,060	9,881	11,752	895	821	1,871	3,587
Educational Services	15%	748	755	789	825	902	41	36	77	154
Health Care and Social Assistance	40%	1,657	1,739	2,218	2,828	4,598	561	610	1,770	2,941
Arts, Entertainment, and Recreation	15%	113	114	124	134	158	11	10	23	45
Accommodation and Food Services	1%	68	68	72	76	84	4	4	8	17
Other Services (excluding Public Administration)	15%	465	473	515	561	665	50	46	104	200
Public Administration	10%	101	104	118	134	174	17	16	40	73
Total Office Employment		28,021	28,568	31,606	35,214	44,579	3,880	3,819	9,710	17,409
							Change '14 - '20	Change '20 - '25	Change '25 - '35	Cumulative (2014 - 2035)
Office Square Feet per Employee							300	300	300	300
Ontario Supportable SF							1,164,048	1,145,573	2,912,973	5,222,594
Less Current Vacant Office Space ¹							232,690	155,126	0	0
Net Supportable SF							931,359	990,446	2,912,973	4,834,778
Low Corridor Area Capture							69,852	74,283	218,473	362,608
Medium Corridor Area Capture							93,136	99,045	291,297	483,478
High Corridor Area Capture							116,420	123,806	364,122	604,347

Source: HR&A

Residential Demand

Residential demand was estimated based on projections of new households within the city of Ontario and households looking to “move up” to better housing. The Southern California Association of Governments (SCAG) projects there will be approximately 26,000 new households in the city of Ontario between 2014 and 2035. New households are income-qualified to understand how many new residents would be able to purchase a new home.

The share of households that can afford a new home are based on estimates of the total home price households can afford and household income distribution in the market. New for-sale prices are estimated based on a down payment of approximately 15 percent and a home payment of a max of 30 percent of total income. Households making above \$50,000 are broadly able to afford a for-sale home price of approximately \$245,000 and a rental lease rate of approximately \$1,250. Assuming households making between \$50,000 and \$75,000 and above are able to afford new home construction, 35 percent of new households are expected to be able to afford a new for-sale home and 19 percent of new households are expected to be able to afford a new rental unit. For Move Ups we also consider the number of existing households that earn above \$50,000.

Figure 28: City of Ontario Home Affordability Estimate

Household Income	Owner-Occupied Units			Rental Residential Units		
	Home Sale Price Affordability	No. of HHs	% of all HH	Rental Rent Affordability	No. of HHs	% of all HH
Total		23,979	54%		20,276	46%
Less than \$15,000	Less than \$74,000	1,516	3%	Less than \$375	2,665	6%
\$15,000 to \$25,000	\$74,000 to \$125,000	1,283	3%	\$375 to \$625	2,619	6%
\$25,000 to \$35,000	\$125,000 to \$170,000	2,178	5%	\$625 to \$875	2,740	6%
\$35,000 to \$49,999	\$170,000 to \$245,000	3,480	8%	\$875 to \$1,250	3,832	9%
\$50,000 to \$74,999	\$245,000 to \$370,000	5,351	12%	\$1,250 to \$1,875	4,813	11%
\$75,000 to \$99,999	\$370,000 to \$490,000	4,416	10%	\$1,875 to \$2,500	1,852	4%
\$100,000 to \$149,999	\$490,000 to \$735,000	4,046	9%	\$2,500 to \$3,750	1,483	3%
\$150,000 or more	More than \$735,000	1,709	4%	More than \$3750	272	1%
Total of HH earning \$50,000 and above		15,522	35%		8,420	19%

Source: ACS 2010-2012, HR&A

Additionally, we anticipate the residential units developed in the study area will be primarily multi-family. Not all households able to afford a new home are going to be willing to locate in a multi-family development. The share of households willing to locate in a multi-family unit was estimated based on existing Census data of multi-family/single family rental and owner-occupied units in Ontario. Of new owner households, an estimated 15 percent currently live in multi-family units and may be interested in purchasing a multi-family home. A higher share of renters, approximately 70 percent, are currently located in multi-family units and are estimated to be interested in renting multi-family units. Given that Move Up households are often looking for larger new homes, we estimate that half the amount of new residents are willing to locate in a multi-family housing.

The Half-Mile Study Area represents 18.6 percent of Ontario’s households and population. The New Model Colony will be a major competitor for new residential units with the corridor and is expected to contain 30,000 new households at build out. Given the amount of planned and proposed in the Model Colony master plan, we estimate the Corridor’s high capture rate of new units will be less than half of this 20 percent fair share. We estimate a capture range of 3 to 7 percent of demand within the Half-Mile Study Area.

Unlike commercial uses, that are likely to be concentrated closer to Holt Boulevard, new residential may be located throughout the Half-Mile Study Area. Thus, we use a second capture to represent the share of households captured within the 500 foot buffer.

Residential Results

Of new residents looking for for-sale units, a total of 1,400 new households between 2014 and 2035 can afford new units and are interested in multi-family units. Between 2014 and 2035 a total of 2,000 residents, willing to live in multi-family for-sale units, will look to move. Based on our estimated capture rates, a projected 100 to 230 units may be captured within the Half-Mile Study Area and 60 to 140 new units of demand can be captured within the 500-Foot Study Area.

Of new residents looking for rental units, a total of 3,500 new households between 2014 and 2035 can afford new rental units and are interested in multi-family units. Between 2014 and 2035 a total of almost 10,000 residents currently renting are estimated to move and are willing to live in multi-family units. We estimate that a cumulative 420 to 980 units may be captured within the Half-Mile Study Area and approximately 250 to 590 new units of demand can be captured within the 500 foot Corridor Buffer.

In total we estimate there is demand for approximately 310 to 730 for-sale or rental multi-family units within the 500 foot Corridor Buffer between 2014 and 2035.

Figure 29: Residential Demand

			2014 - 2020	2020 - 2025	2025 - 2035
<i>Incremental New Households</i>			6,550	9,867	9,867
For-Sale Units					
<u>Cumulative New Resident Ontario Corridor Capture</u>					
Income Qualified Households		35%	2,297	3,461	3,461
Willingness to locate in MF Development		15%	345	519	519
<u>Growth from Move Up</u>					
Current income qualified owner occupied units			15,522		
Annual Turnover Share		4.0%	614		
Turnover During Period			3,683	3,070	6,139
Willingess to Locate in MF Development		15.0%	553	460	921
Total Incremental New Households and Move Up			897	980	1,440
			897	1,877	3,317
Cumulative Corridor Capture	Low	3%	27	56	99
	Mid	5%	45	94	166
	High	7%	63	131	232
Cumulative 500 ft Study Area Capture Rate @ 60%					
	Low		16	34	60
	Mid		27	56	99
	High		38	79	139
Rental Residential					
<u>Cumulative New Resident Corridor Capture</u>					
Income Qualified Rental Residential		19%	1,246	1,877	1,877
Willingess to locate in MF Development		70%	872	1,314	1,314
<u>Growth from Move Up</u>					
Current income qualified rental occupied units			8,420		
Annual Turnover Share		17%	1,422		
Turnover During Period			8,532	7,110	14,220
Willingess to Locate in MF Development		35%	2,986	2,488	4,977
Total Incremental New Households and Move Up			3,859	3,803	6,291
<i>Cumulative</i>			3,859	7,661	13,952
Cumulative Corridor Capture	Low	3%	116	230	419
	Mid	5%	193	383	698
	High	7%	270	536	977
Cumulative 500 ft Study Area Capture Rate @ 60%					
	Low		69	138	251
	Mid		116	230	419
	High		162	322	586
Cum. For-Sale & Rental Residential (New Residents & Move Ups)					
	Low		86	172	311
	Mid		143	286	518
	High		200	401	725

Source: SCAG, HR&A

Retail Demand

With the significant super-regional shopping center, the Ontario Mills Mall, located within its borders, the city of Ontario captures a significant share of Inland Empire shopping dollars. However, the 26,000 new households projected by SCAG between 2014 and 2035, as well as new employees, are likely to support additional retail within the city of Ontario and along Holt Boulevard.

Retail demand is estimated based on average per household and per worker spending and the anticipated amount of new households and workers. As shown in Appendix Figure 2, 2012 California Board of Equalization taxable sales data for San Bernardino County is used to estimate total average per household spending in San Bernardino. San Bernardino's average per household spending is adjusted to account for the Ontario's lower household incomes, using Bureau of Labor statistics Consumer Expenditure Data. Also, the analysis accounts for retail sales that would support stores.

Figure 30: Retail Store Sales Per Household Estimate

Type of Business	San Bernardino County			City of Ontario
2010 Income	\$54,849			\$52,889
	Taxable Sales Per Capita	Taxable Share	Est. Total Per Capita Sales	Income Adjusted per Capita Spending
Per Capita Spending by Type of Business				
Retail and Food Services				
Auto. Parts, Accessories and Tire Stores	\$775	100%	\$775	\$747
Home Furnishings	\$708	100%	\$708	\$692
Electronics and Appliance Stores	\$770	100%	\$770	\$753
Bldg. Matrl. And Garden Equip. and Supplies	\$2,029	100%	\$2,029	\$1,984
Food and Beverage Stores	\$1,915	40%	\$4,788	\$4,688
				0
Clothing and Clothing Accessories Stores	\$2,424	100%	\$2,424	\$2,354
General Merchandise Stores	\$4,859	95%	\$5,114	\$4,995
Health and Personal Care Stores	\$784	60%	\$1,307	\$1,277
Food Services and Drinking Places	\$4,005	80%	\$5,006	\$4,918
Other Retail Group	\$2,927	100%	\$2,927	\$2,846
Total Retail and Food Services	\$21,195		\$25,847	\$25,254

Source: HR&A

Per worker spending is estimated based on a detailed study of office worker spending, but is adjusted to account for the variety of workers in Ontario. We used a conservative average worker spending of approximately \$3.70 per day (Appendix Figure 3). Per household and per worker annual spending estimates are then applied to SCAG's projections of new residents and employees in Ontario to estimate new spending.

Projected residential spending and employee spending within the study area are then translated into retail square feet demand based on estimates of sales per square foot.

Finally, capture rates are applied to estimate the share of spending that will occur within the 500-Foot Study Area. Assuming that much of Ontario's new residential growth may occur in the Model Colony area, but that

new retail can also be supported by existing residents, we estimate that approximately 4 to 8 percent of new resident and employee spending occurs within the 500-Foot Study Area.

Retail Results

As presented in Figure 31, new Ontario residents are expected to generate \$660 million in new spending while new Ontario employees are estimated to generate an additional \$76 million in spending between 2014 and 2035.

Figure 31: Projected New Ontario Resident and Employee Spending

	Income Adj. per Capita Spending	2014 - 2025	2025- 2035
New Resident Spending			
Population Growth		16,417	9,867
Estimated Spending			
Retail and Food Services			
Auto. Parts, Accessories and Tire Stores	\$747	\$12,257,142	\$7,366,729
Home Furnishings	\$692	\$11,363,418	\$6,829,587
Electronics and Appliance Stores	\$753	\$12,357,987	\$7,427,339
Bldg. Matrl. And Garden Equip. and Supplies	\$1,984	\$32,570,545	\$19,575,393
Food and Beverage Stores	\$4,688	\$76,962,323	\$46,255,528
Clothing and Clothing Accessories Stores	\$2,354	\$38,641,641	\$23,224,215
General Merchandise Stores	\$4,995	\$81,993,529	\$49,279,359
Health and Personal Care Stores	\$1,277	\$20,967,226	\$12,601,622
Food Services and Drinking Places	\$4,918	\$80,738,232	\$48,524,907
Other Retail Group	\$2,846	\$46,729,904	\$28,085,384
Total Estimated Retail Spending (Excluding Vehicles & Gas)		\$414,581,947	\$249,170,063
	Income Adj. per Capita Spending	2014 - 2025	2025- 2035
New Employees Spending			
Employment Growth		51,183	31,733
Estimated Spending			
Retail and Food Services			
Auto. Parts, Accessories and Tire Stores		\$0	\$0
Home Furnishings		\$0	\$0
Electronics and Appliance Stores	\$96	\$4,928,826	\$3,055,840
Bldg. Matrl. And Garden Equip. and Supplies		\$0	\$0
Food and Beverage Stores	\$127	\$6,481,744	\$4,018,639
Clothing and Clothing Accessories Stores	\$78	\$3,983,572	\$2,469,788
General Merchandise Stores	\$148	\$7,562,034	\$4,688,412
Health and Personal Care Stores	\$99	\$5,063,862	\$3,139,562
Food Services and Drinking Places	\$227	\$11,613,124	\$7,200,061
Other Retail Group	\$152	\$7,764,589	\$4,813,994
Total Estimated Retail Spending (Excluding Vehicles & Gas)	\$926	\$47,397,749	\$29,386,296

Source: HR&A

Retail spending is translated into supportable retail square feet in Figure 32. Applying typical sales per square foot estimates to the resident and employee spending, Ontario new residents are expected to support over 2 million square feet of new space while new employees support an additional 230,000 square feet of space.

Figure 32: Estimated Supportable Retail Square Feet in Ontario

New Resident Ontario Retail Support		2014 - 2025	2025- 2035	Total
	Est. Sales per			
Retail and Food Services	SF	Retail Space (SF)		
Auto. Parts, Accessories and Tire Stores	\$300	40,857	24,556	65,413
Home Furnishings	\$350	32,467	19,513	51,980
Electronics and Appliance Stores	\$400	30,895	18,568	49,463
Bldg. Matrl. And Garden Equip. and Supplies	\$275	118,438	71,183	189,622
Food and Beverage Stores	\$400	192,406	115,639	308,045
Clothing and Clothing Accessories Stores	\$350	110,405	66,355	176,760
General Merchandise Stores	\$275	298,158	179,198	477,356
Health and Personal Care Stores	\$375	55,913	33,604	89,517
Food Services and Drinking Places	\$350	230,681	138,643	369,323
Other Retail Group	\$300	155,766	93,618	249,384
Total Estimated Retail Square Feet Supported		1,265,986	760,877	2,026,862

New Employee Ontario Retail Support		2014- 2020	2020-2035	Total
	Est. Sales per			
Retail and Food Services	SF	Retail Space (SF)		
Auto. Parts, Accessories and Tire Stores	\$300	0	0	0
Home Furnishings	\$350	0	0	0
Electronics and Appliance Stores	\$400	12,322	7,640	19,962
Bldg. Matrl. And Garden Equip. and Supplies	\$275	0	0	0
Food and Beverage Stores	\$400	16,204	10,047	26,251
Clothing and Clothing Accessories Stores	\$350	11,382	7,057	18,438
General Merchandise Stores	\$275	27,498	17,049	44,547
Health and Personal Care Stores	\$375	13,504	8,372	21,876
Food Services and Drinking Places	\$350	33,180	20,572	53,752
Other Retail Group	\$300	25,882	16,047	41,929
Total Estimated Retail Square Feet Supported		139,972	86,782	226,754

Source: HR&A

The 500-Foot Study Area is estimated to capture approximately 90,000 to 180,000 square feet of retail space based on our capture rate assumptions.

Figure 33: Estimated 500-Foot Study Area Retail Demand

Ontario New Resident and Employment Support			2014-2025	2025-2035	Total
Retail Category					
Retail and Food Services		Estimated Retail Space Supported			
	Auto. Parts, Accessories and Tire Stores		40,857	24,556	65,413
	Home Furnishings		32,467	19,513	51,980
	Electronics and Appliance Stores		43,217	26,208	69,425
	Bldg. Matrl. And Garden Equip. and Supplies		118,438	71,183	189,622
	Food and Beverage Stores		208,610	125,685	334,296
	Clothing and Clothing Accessories Stores		121,786	73,411	195,198
	General Merchandise Stores		325,657	196,246	521,903
	Health and Personal Care Stores		69,416	41,976	111,393
	Food Services and Drinking Places		263,861	159,214	423,075
	Other Retail Group		181,648	109,665	291,313
Total Estimated Retail Square Feet Supported			1,405,958	847,659	2,253,617
Estimated 500 ft. Study Area Capture					
	Low	4%	56,238	33,906	90,145
	Med	6%	84,357	50,860	135,217
	High	8%	112,477	67,813	180,289

Source: HR&A

Demand by Land Use

The following table summarizes the estimated land use demand for key land uses within the 500-Foot Study Area.

Figure 34: Demand Summary

	2014 – 2025	2025- 2035	Total
Office	140,000 – 240,000 SF	220,000 – 360,000 SF	360,000-600,000 SF
Residential	170 - 400 Units	140 - 325 Units	310 - 725 Units
Retail	60,000 - 110,000 SF	30,000 - 70,000 SF	90,000 to 180,000 SF

Source: HR&A

Literature and Case Studies

In order to evaluate the impact of dedicated-lane BRT and mixed-lane rapid transit service, HR&A undertook a literature review of precedent studies examining the real estate impact of dedicated-lane BRT and mixed-lane rapid bus (commonly referred to as enhanced bus) service. Due to the relative newness of BRT service in North America and timespan required to observe real estate impacts, the majority of existing academic literature focused on the impact of BRT systems abroad.³ HR&A has focused on the studies of North American systems, which provide a more comparable policy and development context for the Holt Boulevard corridor. The following is a summary of key findings:

A best-practice BRT, with key features such as dedicated lanes and enhanced stations, will provide stronger real estate impacts compared to enhanced bus service. A 2013 study by the Institute for Transportation and Development Policy (ITDP) evaluated transit-oriented development (TOD) investment along 21 transit corridors.⁷ The report found that, under similar political and market context, BRT implemented with “best practices” generally outperformed enhanced bus service in terms of TOD impact.¹⁰ ITDP also assisted in the development of the BRT Standard, which provides a ranking system for bus services and seeks to differentiate enhanced bus service, more common in North America, from true BRT.⁴ In contrast with enhanced bus service, a best-practice BRT typically provides dedicated lanes, central road alignment, signal priority, off-board fare collection, and platform-level boarding. These key features increase BRT’s competitiveness compared to other modes and enhance its value for nearby residents or commercial tenants. In multiple studies, developers have reported a preference for “permanent” right-of-ways and stations, in addition to higher frequencies and speed, to help differentiate BRT from enhanced or conventional bus service, which has limited real estate impact.^{1,7,8,10}

BRT and enhanced bus have both generally generated value premiums for surrounding properties, with preliminary research suggesting a higher premium for BRT. Due to the nascent nature of BRT in North America, a limited number of studies have sought to quantify the impact of BRT or enhanced bus on adjacent properties. All have utilized hedonic price regression analyses to isolate the effect of BRT proximity or access on residential property value.⁵ Literature for non-residential uses are even more limited but preliminary studies for the Eugene EmX BRT suggests positive impacts similar to residential use.⁶ Corresponding with developer preference, preliminary research suggests that BRT may provide a higher premium versus enhanced bus. Along Boston’s Silver Line Washington Street corridor, an enhanced bus service, condos adjacent to Washington Street sold for 7.6 percent more per square foot than those located 870 feet

³ Stokenberga, Aiga. “Does Bus Rapid Transit Influence Urban Land Development and Property Values: A Review of the Literature.” *Transport Reviews: A Transnational Transdisciplinary Journal*. April 2014.

⁴ Institute for Transportation and Development Policy. *The BRT Standard (2014 Edition)*. 2014.

⁵ A hedonic price regression analysis utilizes a statistical model to assess how much each of a property’s characteristics (size, condition, neighborhood amenities, transit access, etc.) contributes to its total value. Researchers use this model to identify property value changes due to proximity or accessibility to a transit node if all other characteristics are held constant. The quantity or percentage of this difference is said to be the “value premium” associated with transit.

⁶ Eli Goodwin and Zack Snyder (University of Oregon). *Hedonic Evaluation of the Effects of EmX Routes on the Value of Commercial and Mixed Use Properties*. June 2013.

away.⁷ Best-practice BRTs have provided higher value premiums for adjacent corridors. In Eugene and Springfield, a 2012 University of Oregon study found that single-family homes directly adjacent to a stop along the Franklin EmX corridor sold for 10.2% higher than homes 3 miles away, with all other characteristics being equal, with a value premium of up to 0.18% for every walking minute closer to the station.⁸ Along the MLK East Busway in Pittsburgh, a study sponsored by the Federal Transit Administration found an 11% premium for the fair market value of homes within 100 feet of stations versus those located more than 1,000 feet away.⁹ The value premium declines with distance until it fully disappears at 1,000 feet.

Figure 35: Property Value Premiums from BRT/Enhanced Bus

Location	Mode	Product Type	Value Premium
Boston, MA	Enhanced Bus	Condominium	7.6% ⁷
Eugene-Springfield, OR	BRT	Single-family	10.2% ⁸
Pittsburgh, PA	BRT	Single-family	11.0% ⁹

While BRT generally encourages a higher quantity of TOD investment, the amount of investment is largely driven by a corridor's policy and market context. Numerous studies have sought to evaluate quantitatively and qualitatively BRT and enhanced bus's ability to attract TOD investment. Both transit modes have the ability to encourage TOD, but there is a general consensus that supportive land use policy and market strength are necessary in conjunction to the introduction of transit.¹⁰ The amount of TOD caused solely by transit is difficult to determine as transit investment is often part of a broader effort to redevelop corridors, which may include rezoning, public realm improvements, and, in some cases, financial incentives. In North America, the ITDP study found that BRT has generated slightly higher range of impacts on TOD investment (up to \$5.8 billion) versus enhanced bus (up to \$5.2 billion), but similar to fixed-rail transit modes, public and market support were the strongest predictors for the amount of impact rather than the mode of transit. Past studies on the experiences of North American and international BRT systems have also affirmed BRT's ability to encourage TOD but did not find a direct correlation to the amount of investment as it varied widely depending on the local context.^{11,12} A Federal Transit Administration-sponsored study for BRT-oriented development also concluded that BRT has the ability to encourage TOD but that public support and developer interest were critical for TOD in addition to BRT's presence.¹³

⁷ Federal Transit Administration and National Bus Rapid Transit Institute (Victoria A. Perk, Martin Catala, and Steven Reader). *Land Use Impacts of Bus Rapid Transit: Phase II—Effects of BRT Station Proximity on Property Values along the Boston Silver Line Washington Street Corridor*. July 2012.

⁸ Peter Hodel & Megan Ickler (University of Oregon). *The Value of Bus Rapid Transit: Hedonic Price Analysis of the EmX in Eugene, Oregon*. 2012.

⁹ Federal Transit Administration and National Bus Rapid Transit Institute (Victoria A. Perk and Martin Catala). *Land Use Impacts of Bus Rapid Transit: Effects of BRT Station Proximity on Property Values along the Pittsburgh Martin Luther King, Jr. East Busway*. December 2009.

¹⁰ Institute for Transportation and Development Policy (Hook, Lotshaw, and Weinstock). *More Development for your Transit Dollar: An Analysis of 21 North American Transit Corridors*. Institute for Transportation Development and Transportation Policy. 2013.

¹¹ Breakthrough Technologies Institute. *Bus Rapid Transit and Transit Oriented Development: Case Studies on Transit Oriented Development Around Bus Rapid Transit Systems in North America and Australia*. April 2008.

¹² Transportation Research Board. *Bus Rapid Transit Volume 1: Case Studies in Bus Rapid Transit*. 2003.

¹³ Federal Transit Administration and National Bus Rapid Transit Institute (Cheryl Thole and Joseph Samus). *Bus Rapid Transit and Development: Policies and Practices that Affect Development Around Transit*. December 2009.

Case Studies

In addition to the literature review, HR&A conducted case study research on comparable U.S. BRT and enhanced bus services to identify the ingredients and policies needed to support TOD along the Holt Boulevard corridor. The case studies are intended to (a) provide lessons on how to successfully foster TOD through transit investment, and (b) inform the evaluation of dedicated-lane or mixed-lane service impact on TOD potential.

To select systems most relevant to the Holt Boulevard corridor, HR&A focused on U.S. systems with context and features similar to the proposed service. Due to the span of time required for real estate impacts to be fully realized and the relative newness of BRT and enhanced bus in the U.S., there were a limited number of systems available for review. While some selected systems are not directly comparable to the WVC context, they provide a stronger baseline for evaluating mid- to long-term real estate impacts than newer systems in a similar context.

For example, the Los Angeles region is a natural candidate given its history of enhanced bus and BRT service, including the El Monte Busway (opened 1971), the Metro Orange Line (opened in 2004), and the recently introduced San Bernardino Express (sbX; opened in April 2014). While the El Monte Busway is heavily used by 49 different bus lines, including the Metro Silver Line and Foothill Transit's Silver Streak, it operates along the median of a limited-access highway, a feature which significantly limits its real estate impact and does not provide a comparable context for Holt Boulevard. sbX provides a similar context to the proposed corridor. However, it began operations in April 2014 and its real estate impacts are unlikely to be fully realized at the time of this study. For these reasons, we excluded the two systems from the following case studies.

Based on these criteria, HR&A selected the following U.S. systems for further research:

- Pittsburgh MLK East Busway
- Boston Silver Line (Washington Street)
- Kansas City MAX (Main Street)
- Los Angeles Metro Orange Line
- Eugene-Springfield MAX (Franklin Corridor)
- Cleveland HealthLine

For each selected corridor, HR&A conducted background research and in-depth literature review to identify best practices and lessons learned. A summary of key characteristics is below, followed by brief case studies of each corridor. A bibliography of sources is provided in Appendix B.

Figure 36: Comparable Rapid Transit Systems

	Pittsburgh (MLK East Busway)	Boston Washington Street (Silver Line)	Kansas City (MAX Main Street)	Los Angeles (Orange Line)	Eugene-Springfield (EmX Franklin)	Cleveland (HealthLine)
Overview						
Transit Type	Bus Rapid Transit	Enhanced Bus	Enhanced Bus	Bus Rapid Transit	Bus Rapid Transit	Bus Rapid Transit
Completion	1983; 2003*	2002	2005	2005; 2012*	2007	2008
Capital Cost (\$2014)	\$362.5	\$145.8	\$26.1	\$606.9	\$28.1	\$186.0
Length (Miles)	9.1	2.2	6.0	18.0	4.0	7.1
Dedicated Lanes (Miles)	8.7	0.0	3.1	17	2.4	4.4
Stations	9	13	21	18	10	21
Ridership (Weekday Avg)	24,000	21,000	6,000	25,000	4,700	16,000
BRT Features						
Dedicated Lanes	Yes	Yes	Partial	Yes	Partial	Partial
Enhanced Stations	Yes	Yes	Yes	Yes	Yes	Yes
Specialized Vehicles	No	Yes	Yes	Yes	Yes	Yes
Off-Board Fare Collection	No	No	No	Yes	Yes	Yes
Intelligent Transport System	Yes	Yes	Yes	Yes	Yes	Yes
Branding Elements	Partial	Yes	Yes	Yes	Yes	Yes
Corridor Context						
MSA	Pittsburgh, PA	Boston-Cambridge- Newton, MA-NH	Kansas City, MO-KS	Los Angeles-Long Beach-Anaheim, CA	Eugene, OR	Cleveland-Elyria, OH
MSA 2013 Population	2,360,867	4,684,299	2,054,473	13,131,431	356,212	2,064,725
Corridor Context	Connects Downtown to low- and mid-rise neighborhoods and key institutions	Connects Downtown to established mid- rise neighborhoods oriented towards a former transit line	Connects Downtown to mid-rise neighborhoods and suburban employment and retail centers	Connects suburban employment center to low-rise suburbs and an emerging mixed-use district	Connects mid-size Downtown to university campus, low-rise residential, and small business district	Connects Downtown to rezoned industrial district, major institutions, and low- rise neighborhoods
Real Estate Impact						
Price Premium	11.0%	7.6%			10.2%	
Development (millions)	\$805	\$650	\$5,200	\$3,000	\$100	\$4,300

*Expansion

**It should be noted that the realization of development investment occurred across different periods for each case study and, thus, the reported development investment may not be directly comparable.*

MLK East Busway, Pittsburg, Pennsylvania

The MLK East Busway is one of the first busways in the United States, beginning operations in 1983. It was further expanded in 2003 by 2.3 miles to Wilkinsburg and Swissvale, two inner-ring suburban neighborhoods. Designed as a commuter line for workers commuting to Downtown Pittsburgh, it has dedicated lanes and express service for the full length of the corridor. Over 30 bus routes provide service using the busway, with local buses entering and exiting the main line at key stations. The busway does not provide off-board fare collection, platform-level boarding, or branding elements to differentiate the service from other buses. In 2013, the busway carried 24,000 passengers on an average weekday, making it one of the most popular BRT lines in the U.S., after the M15 SBS in New York City and Orange Line in Los Angeles.



The public sector did not proactively plan for TOD when the line first opened in 1983, but has recognized the busway as an asset for redeveloping two adjacent communities, East Liberty and Shadyside. Since the line first opened, at least \$805 million of development has occurred along the corridor, with

development occurring at a faster pace following public intervention and the introduction of major retail anchors in East Liberty. The busway's key features, dedicated lanes and widely spaced stations, allows for greater speed and strengthens East Liberty's regional accessibility and appeal to new residents and office tenants. The busway's location in a below-grade railroad right-of-way has allowed for the construction of a 9-mile long dedicated lane, a highly unusual feature for most BRT service. **However, subterranean route reduces TOD potential in adjacent sites by isolating the station from the neighborhood** and making bicycle and pedestrian access difficult.

Washington Street Silver Line, Boston Massachusetts

The Washington Street Silver Line began operations in 2002, replacing an elevated train that ran along the corridor until 1987. The corridor was formerly host to the Orange Line, an elevated train that provided vital transit service but was also perceived as a source of blight due to its noise and dominating presence. The Washington Street line, opened in 2002 in response to community demand and effectively operates in mixed-traffic. The bus has a dedicated lane outside of downtown but effectively operates in mixed-traffic due to its design as



its lane doubles as a bike lane and right-turn lane, with limited physical separation between regular traffic and bus traffic. As a result, running times were only marginally improved over the previous route.

However, there are several features that distinguish the Washington Street Silver Line from regular bus service, including low-floor boarding, limited stops, signal prioritization, specialized buses, and more prominent bus stops. **Ridership increased significantly largely because of these BRT-like features and perceived reliability, despite limited improvements in running times,** with an average of 21,000 weekday riders. New development along the Washington Street Silver Line has largely occurred near Downtown, but properties throughout the corridor appreciated in value. The Institute for Transportation and Development Policy estimates that over \$650 million of real estate investment has occurred along the line since opening, though it is difficult to attribute the new development directly to the introduction of transit. An FTA-sponsored study conducted by the National BRT Institute in 2012 found evidence that enhanced bus provided value for properties immediately adjacent to the corridor. In 2001, condos immediately adjacent to Washington Street sold for 22 percent less compared to homes further away, while in 2008, **six years after the introduction of the enhanced bus, condos immediately adjacent to stations sold for 7.6 percent more compared to similar homes further away.**

Metro Area Express Main Street Line, Kansas City, Kansas

The Metro Area Express (MAX) Main Street line began service in 2005 and connects Downtown Kansas City with adjacent neighborhoods.

The MAX offers enhanced bus service with low-floor entry, signal priority, stop consolidation, and specialized vehicles. However, it lacks enhanced stations, off-board fare collection, which allows for faster boarding and shorter stops, and only 52 percent of the route features dedicated bus lanes. Nevertheless, the MAX has been highly successful. Since 2005, the enhanced bus service has carried an average of 6,000 riders per day, nearly 90 percent more compared to the regular bus line it replaced.



The majority of development along the corridor occurred in Downtown and appears to be incidental to transit investment. Approximately \$5.2 billion of development has occurred along the MAX corridor, although patterns of development show that while significant development coincided with the opening of the project, it had minimal effect on the form of this growth. Other neighborhoods south of Downtown, also well served by the Main Street MAX, have experienced limited development activity. **Voters approved the construction of a Downtown streetcar line in 2012, citing the desire for a more visible and permanent form of transit to spur economic development.** Despite the presence of the MAX service, there was significant support for a new streetcar along the same Main Street corridor.

Orange Line, Los Angeles, California

The Orange Line began operations in 2005 and expanded in 2012, connecting San Fernando Valley to the regional metro network via an abandoned railway corridor. When the Metro Orange Line opened in 2005, it became one of the first modern BRT systems in the United States, traveling along a dedicated busway to Warner Center, the third largest employment center in the region. In 2012, Metro opened a 4-mile extension from Warner Center north to Chatsworth, where it connects with Amtrak and Metrolink. The system also



features signal priority, level boarding, off-board fare collection, and specialized stations and fleet to differentiate itself from Metro's regular and enhanced bus services.

The Orange Line is branded as a Metro line, similar to other rail services in the Metro system. During the first year of operations, ridership more than tripled over previous routes. Today, the Orange Line carries over 25,000 passengers every weekday and there is emerging community support for conversion to light rail service. **Since 2005, at least \$3 billion of development has been completed or proposed near the line, largely concentrated in Warner Center and North Hollywood, both areas experiencing development prior to the Orange Line.** Residential developers have cited the advantage of the Orange Line's ability to attract

younger buyers and renters, who value transit access and the ability to live close to their work and entertainment destinations.

The Orange Line was much more impactful than regular or enhanced bus service because of the speed enabled by a dedicated guideway. A Metro survey found that 70 percent of riders exiting the Orange Line at North Hollywood transferred to the Red Line, meaning that riders are utilizing the Orange Line as an extension of the fixed-rail Metro system.

EmX, Eugene-Springfield, Oregon

The first phase of EmX began service in 2007, connecting downtown Eugene and downtown Springfield with the University of Oregon. As part of its 1996 Regional Transportation Plan, the Eugene-Springfield region selected BRT as its preferred transit mode given its cost effectiveness versus traditional rail. Approximately 60 percent of the corridor features dedicated, landscaped bus-only lanes, mostly along the Eugene portion of Franklin Boulevard. The system also provides for queue jump lanes, signal priority, near-level



boarding, off-board fare collection, and specialized vehicles and stations, features which raise service quality and help position the EmX as a light rail alternative rather than a bus service. The corridor was one of the most popular bus routes operated by the Lane Transit District, serving roughly 2,700 passengers per day. **The BRT line now carries on average of 4,700 passengers, an increase of over 74 percent.**

It is clear that the corridor benefits from transit-supportive land use policies at the regional level. The regional plan emphasizes mixed-use and higher-density development in downtown Eugene and transit station areas, including those along the Green Line corridor. The line also runs through the Downtown and Riverfront urban renewal districts, which redirect local tax increments for public infrastructure and amenities meant to spur redevelopment. **Over \$100 million of development has occurred along the corridor since 2007, largely in Eugene and driven by demand from the University of Oregon.** In contrast to Eugene, station areas in Glenwood and downtown Springfield remain largely unchanged with the notable exception of an affordable mixed-use building immediately adjacent to the Springfield EmX station. Development largely occurred in station areas served by dedicated lanes, suggesting high-quality transit access is only an amenity that can help unlock development potential rather than the driver for development. Other factors such as market demand, favorable public policy, and existing amenities were key to the successes of Downtown Eugene and the University area.

HealthLine, Cleveland, Ohio

The HealthLine began service in 2008 and provides service between two of the regions' major employment centers. The HealthLine features 4.4 miles of dedicated lanes from Downtown Cleveland to University Circle, built along the median of Euclid Avenue, and transitions into mixed-traffic for the remainder of the line to East Cleveland. At the majority of intersections, regular vehicles are forbidden from turning across the busway and interrupting the BRT traffic. In addition, the system also features platform level boarding, off-board fare collection, higher frequencies, BRT-specific buses, and branded stations. **In 2013, the HealthLine carried 16,000 passengers every weekday, an increase of 60 percent over the former bus line.**



In conjunction with transit improvements, the City developed a comprehensive set of policy tools and incentives to encourage TOD. Despite a tepid regional economy, the Euclid Avenue corridor is somewhat attractive to new development given its strategic location between the region's employment centers¹⁴ and a critical mass of historical and abandoned properties available for development. **Since 2008, \$4.3 billion of development has occurred along the corridor, with the majority located in Downtown and University Circle.** The line was introduced along with a comprehensive set of public sector interventions, ranging from streetscape improvements to financial incentives, which increased the desirability and feasibility of development in the area. Many projects were built for institutional use, which may have occurred with or without the HealthLine, but the line was nevertheless instrumental in channeling development towards Euclid Avenue, with nearly all new projects directly facing or in close proximity to the corridor. While BRT, in particular the permanence, quality, and frequency of the service, added value to adjacent buildings and parcels, it was not significant enough to support mid-rise construction costs outside of downtown and university-centric areas.

Key Takeaways

Of the case studies described above, the Eugene-Springfield EmX corridor bears the closest resemblance to the study area dedicated-lane BRT, in that it connects relatively low-density areas. Other case studies capitalize on BRT efficiencies to connect a downtown radially to suburbs or peripheral residential areas. As with other case studies, development associated with the EmX route was still concentrated in higher-density areas with significant amenities and associated market demand.

The case studies show that transit improvements can add value to adjacent properties and shape the intensity and orientation of ongoing developments. However, there has to be significant market demand for BRT to be a major contributor to transit-oriented development and its ability to impact development is strongly

¹⁴ It should be noted that the HealthLine includes connections to the Cleveland Clinic, which is widely considered one of the top four hospitals in the United States.

influenced by the level of public policies and investments. The Los Angeles Orange Line, the closest BRT system in proximity to Ontario, originally terminated in areas designated as high-density, mixed-use areas, and those areas have seen the most significant development. In addition to market demand, public support is necessary to spur redevelopment, in the form of policy guidance and assistance in land assemblage. Redevelopment is more likely to occur in station areas with available vacant or significantly underutilized parcels, as in the case of the Ontario WVC stations.

Dedicated-lanes BRT can enhance speed and access to regional destinations, providing a key amenity for attracting potential tenants and residents if other TOD ingredients are in place, but must be physically and visually separate from other traffic lanes to be effective. Mixed-lane rapid bus can provide significant transportation benefits and has the potential to increase property value, particularly when implemented with public realm improvements, however it is unlikely to be a primary catalyst for new development, as seen in the case of the Boston Washington Street Silver Line where value has increased in areas but development paralleled existing regional real estate trends. Dedicated-lane BRT is likely to have more substantial development impacts than mixed-lane rapid bus.

In addition to transit-specific improvements, station area planning should begin well in advance of construction to provide certainty for the community and private stakeholders, as TOD is most likely to occur in areas that are development-ready. Goals should include creating integrated stations with strong neighborhood visibility and connectivity, which can maximize TOD. Financing and implementing these improvements may require significant time.

Impact Analysis

The literature review and case studies show positive impacts from new transit amenities on surrounding real estate values. The development impacts of transit-accessible properties is expected as home buyers, renters, employers, and customers appreciate the mobility and amenity benefits of transit and an increasing share of regional demand is attracted to these locations. Property owners respond by raising prices and rents and, across time, property values increase. The scale of the property value increase and new development attracted is dependent on the type of transit system and the quality and efficiency of the system, as well as the underlying strength of the real estate markets in question.

Light rail systems and other fixed guideways are widely acknowledged to have substantially higher development impacts than non-fixed guideways. However, improved transit access and the related public investment from BRT and mixed-lane rapid bus are also expected to provide some level of development impacts. The real estate impacts attributed to transit improvements can result from two primary sources: (1) A premium on real estate values for all properties within close proximity to transit; and (2) The pace and value of new development resulting from real estate demand triggered by transit improvements.

The following analysis evaluates the impacts from the above two sources along Holt Boulevard with respect to a dedicated-lane BRT and a mixed-lane rapid bus. Specifically, the analysis provides a comparative estimate of value creation from the two transit alternatives from (1) property value premiums for all properties within close proximity to the proposed transit corridor, and (2) the potential development value of vacant properties within close proximity of the proposed transit corridor.

Ontario Impact Assumptions

Based on the literature review and case studies, we benchmark the two key impact drivers described above, a property premium generated by dedicated-lane BRT or mixed lane rapid bus/enhanced bus and the estimated build out of vacant properties supported by each transit option. There is likely to be a level of development on vacant land with or without transit improvements. In terms of the development of vacant land, however there is not sufficient research data to isolate the new development increment that can be attributed to a specific bus transit type. As a result, the analysis does not attempt to look at the incremental value of new development specifically attributed to each transit type, rather estimates total value of new development supported by each transit type between now and 2035.

Area of Impact

The literature review and BRT and rapid bus research suggest that the development impacts of these transit types are concentrated within close proximity to the transit route. Properties located adjacent to BRT and rapid bus routes obtain the greatest transit benefits and also benefit from the public realm investments made along the corridor.

The designated WVC dedicated-lane segment is from Benson Avenue to Vineyard Avenue on Holt Boulevard. To approximate the properties adjacent to the transit corridor, a 500 foot buffer of Holt Boulevard from Benson Avenue to Vineyard Avenue (the 500-Foot Study Area) is used as the area of impact for this analysis.

All impact results are based on value increases and premiums within the 500-Foot Study Area.

Property Value Premium Assumptions

Through the literature review and case studies we benchmarked existing studies documenting the property value premiums associated with BRT and mixed-lane rapid bus/enhanced bus. There are a limited number of dedicated-lane BRT and mixed-lane rapid bus/enhanced bus routes that have been in existence long enough to adequately measure development impacts in the United States and, thus, there are a limited number of studies available that quantify the direct impact of BRT and enhanced bus routes on property values. However, as shown in the previous section, the two available BRT studies demonstrate residential property value premiums of up to 10 to 11 percent for dedicated lane BRT.

The single estimate of mixed-lane rapid bus/enhanced bus was found in Boston. The Silver Line Washington Street service provided a value premium of 7.6 percent (approximately 25 to 30% less than dedicated lane BRT). As described in the literature review and comp summary, the Boston route was unique in that it was the extension of a subway, provides a key connection to the Boston Central Business District (CBD) and is located in an area with a robust housing market and thus may perform better than standard enhanced bus routes.

The majority of the case studies illustrate systems that act as radial connectors between a primary central business district within a metropolitan area and a peripheral neighborhood. In the case of Ontario, while the WVC Corridor is one of the most highly used bus routes in the Inland Empire, it does not service the primary regional business district. In addition, given the lower reliance on transit in Ontario, relative to the comparable areas and suburban nature of the WVC area, we estimate that a quality dedicated lane BRT in Ontario may be able to achieve a 4 to 8 percent value premium for residential uses. Adjusting for qualitative differences between the Boston Silver Line and the WVC, we estimate that residential property premiums from a mixed lane rapid bus will be approximately half of the BRT premiums at 2 to 4 percent higher than surrounding properties.

While there is limited available research for commercial property premiums for bus systems, our literature reviews of light rail transit show a substantial premium differential for commercial uses and residential uses when compared across various light rail systems. Assuming a similar premium differential exists for BRT and enhanced bus we have assumed commercial premiums at 50 percent of residential premiums for both system types.

Figure 37 reflects our estimation that the mixed lane rapid bus alternative will achieve a premium of up to approximately half of a dedicated lane BRT. These estimates and results should be considered illustrative in light of the limited research data available on the magnitude real estate value premiums of impacts from bus transit systems.

Figure 37: OmniTrans West Valley Connector Premium Assumptions

Ontario West Valley Connector Premium Estimates	Residential / MF	Commercial
Dedicated Lane BRT	4 - 8%	2 - 4%
Mixed Lane Rapid Bus (Enhanced Bus)	2 - 4%	1% - 2%

Potential Vacant Parcel Building Capacity Assumptions

The development of the dedicated-lane BRT and mixed-lane rapid bus is expected to support new development along Holt Boulevard. Again, the analysis does not attempt to isolate the amount of incremental development solely attributed to each transit system, but estimates the total volume of new development supported by each of proposed bus transit options.

To understand the development capacity for each alternative we estimated the total development capacity of vacant land in the 500-Foot Study Area based on the floor to area ratios and land uses reflected in City of Ontario's General Plan, and compared this to estimated market supportable demand projections.

In the Demand Analysis section, HR&A estimated the expected range of demand within the corridor, irrespective of transit. For purposes of this analysis, we assume that the dedicated-lane BRT will help the 500-Foot Study Area to capture the high end amount of the demand range for each land use while the mixed-lane rapid bus achieves a proportionally lower share of demand relative to the dedicated-lane BRT.

Figure 38: Demand-based 2035 Build Out Estimate

	Cumulative 2014 - 2035 Demand	Vacant Land Development Capacity¹	2035 Demand Build Out Share
High Office Capture	604,347 SF	1,478,992 SF	41%
High Retail Capture	180,000 SF	215,468 SF	84%
High Residential Capture	725 Units	574 Units	126% ²

¹Estimation of the building capacity of vacant land is described in the following section.

²Residential demand outstrips the building capacity of vacant land, suggesting that underutilized land may be redeveloped for residential.

Source: HR&A

Based on the value premium differential found for rapid bus/enhanced bus and dedicated-lane BRT (approximately 25 to 30%), we estimate that with the mixed-lane rapid bus, the 500-Foot Study Area is likely to capture approximately 30 percent less development than with a dedicated lane BRT system.

Figure 39: Ontario 500-Foot Study Area 2035 Build Out Assumption

Assumption of 2035 Build Out	Office	Retail	Residential
Dedicated Lane BRT	40%	80%	125%
Enhanced Bus	30%	60%	94%

It should be noted that these assumptions are illustrative of the potential impacts and represent the upper limit of impacts from a dedicated-lane BRT and mixed-lane rapid bus.

Base Corridor Values and Projected Build Out of Vacant Land

As shown in Figure 40, the 500-Foot Study Area, contains roughly 1,100 parcels across 365 acres, with a total assessed value of roughly \$404 million in 2014 per the San Bernardino County Assessor's Office. In this area, the greatest existing land use is single-family residential, followed by auto-related industries, apartments and retail trade respectively.

Figure 40: 500-Ft. Study Area Total Existing Land and Improvements (including Vacant)

	Improved Value	Land Value	Parcels	Lot Area (Acres)
Commercial				
General Commercial	\$ 11,573,319	\$ 7,512,770	45	19.21
Industrial	\$ 3,602,084	\$ 2,560,474	36	8.93
Business Park	\$ 60,777,893	\$ 39,567,319	217	131.64
Hospitality	\$ 35,261,350	\$ 11,441,497	18	19.31
Neighborhood Commercial	\$ 7,402,112	\$ 4,607,380	70	10.69
Residential				
High Density Residential	\$ 34,097,551	\$ 12,727,642	138	29.51
Low Density Residential	\$ 17,764,779	\$ 9,464,403	173	25.85
Medium-Density Residential	\$ 16,492,434	\$ 7,999,228	64	18.32
Urban Mixed-Use*				
Mixed-Use Downtown	\$ 68,115,253	\$ 18,920,752	224	51.92
Mixed-Use East Holt	\$ 20,038,034	\$ 14,689,022	102	49.64
Grand Total	\$275,124,809	\$ 129,490,487	1087	365.02

Source: San Bernardino County Assessor's Office, CoreLogic

In total **70.6 acres** of private land within the 500-Foot Study Area are either developable or vacant¹⁵, a total of **190 parcels** with a current land value of roughly **\$27.7 million**. The vast majority, approximately 52.5 acres, is designated for commercial uses by the 2010 Land Use Plan contained within the City of Ontario's General Plan (General Plan). Of this area, almost 90 percent is specifically designated for business park land uses. Another 3.1 acres of the developable and vacant land within the 500-foot buffer are designated for high, medium and low-density residential, with the majority intended for high-density residential with up to 45 dwelling units per acre. The remaining 15 acres are designated for mixed-use development of varying intensity.

Based on the allowable development densities specified by the City of Ontario's General Plan, HR&A estimated the capacity for development on the parcels noted above. A small fraction of the sites specified as developable or vacant currently have minor built improvements, which were not included in capacity calculations. Based on the different commercial floor area ratio (FAR) included in the Land Use Plan, HR&A estimates there is a total entitled capacity for roughly 1.3 million square feet of new commercial space within the 500-Foot Study Area, as shown below in Figure 41. The parcels designated as residential within the 500-Foot Study Area have the capacity for just over 100 residential units. The two mixed-use designations do not have designated densities in the Land Use Plan; HR&A reviewed The Ontario Plan's projections for mixed-use development to determine average FAR and dwelling units per acre (DU/ac). Across the two

¹⁵ HR&A includes parcels identified as vacant by the San Bernardino County Assessor (with adjustments for properties that were misidentified and include significant improvements) as well as parcels designated as "developable" by the San Bernardino Association of Governments (SANBAG), much of which overlap with the vacant properties.

mixed-use districts,¹⁶ HR&A estimates that there is an entitled capacity of roughly 380,000 square feet of new commercial space and just over 450 dwelling units.¹⁷

It is important to note that a sizable number of the parcels in the 500-Foot Study Area could be considered “underutilized,” meaning their current density is significantly lower than the allowable density (as determined by specified FAR). HR&A has not included the redevelopment potential of underutilized parcels in this capacity estimate.

Totaling mixed use, residential and commercial properties, there is capacity for **1.7 million square** feet of commercial space and **558 dwelling units** in the 500-Foot Study Area. HR&A reviewed the current distribution of office and retail space within the Half-Mile Study Area to determine potential distribution of office and retail space within mixed-use districts and parcels designated as general commercial. HR&A estimates that there is a capacity for roughly 1.5 million square feet of office space and an additional 215,000 square feet of retail space.

Figure 41: 500-Foot Study Area Developable and Vacant Land Capacity

Developable and Vacant Land Capacity (500 foot buffer)									
General Plan Categories	Land Value	Parcels	Built Area (SF)	Lot Area (SF)	Lot Area (Acres)	FAR	Max DU/Ac	Unbuilt Capacity (SF)	Unbuilt Capacity (Units)
Commercial				2,285,539	52.5			1,313,762	
General Commercial	\$ 790,544	8	-	92,280	2.1	0.4		36,912	
Industrial	\$ 301,774	10	-	57,226	1.3	0.55		31,474	
Business Park	\$ 15,014,026	67	8,830	2,002,500	46.0	0.6		1,192,670	
Hospitality	\$ -	1	-	-	-	1			
Neighborhood Commercial	\$ 1,370,115	20	708	133,533	3.1	0.4		52,705	
Residential				135,249	3.1				101
High Density Residential	\$ 686,136	7	2,976	85,009	2.0		45		85
Low Density Residential	\$ 243,672	5	-	26,800	0.6		5		3
Medium-Density Residential	\$ 250,115	2	-	23,440	0.5		25		13
Urban Mixed-Use*				655,865	15.06			380,699	457
Mixed-Use Downtown	\$ 1,488,295	20	7,195	158,989	3.6	0.32	35	43,681	122
Mixed-Use East Holt	\$ 2,631,463	22	10,163	496,876	11.4	0.7	30	337,018	335
Grand Total	\$ 22,776,140	162	29,872	3,076,653	70.7			1,694,461	558

Source: San Bernardino County Assessor's Office, CoreLogic, The Ontario Plan,

*Mixed Use assumes residential units are not counted against FAR

As described in the Impact Assumptions section, HR&A estimates the marked-demand supported share of total development capacity that is projected to be built by 2035 under a dedicated-lane BRT and a mixed-

¹⁶ Downtown District and East Holt District

¹⁷ The densities in Figure 41 table for mixed-use parcels do not include residential units, the densities of which are shown as DU/ac. The actual allowable FAR for these sites would be significantly increased if including built residential area. However, the densities shown reflect urban development with one or two stories of retail or office space (for Downtown and East Holt respectively) and two stories of residential use above.

lane rapid bus scenario. Figure 42 presents the 2014 – 2035 500-Foot Study Area build out based on these assumptions.

Figure 42: 500-Foot Study Area Projected Build Out 2014-2035

	Retail SF	Office SF	Residential Units
Entitled Development Capacity*			
Gross Building Area	215,000	1,479,000	560
Mixed-Lane Rapid Bus			
Projected demand share of capacity	60%	30%	94%
Projected buildout	129,000	443,700	526
Dedicated-Lane BRT			
Projected demand share of capacity	80%	40%	125%
2035 Buildout	172,000	591,600	700

**Vacant or developable land built to capacity per 2010 Ontario General Plan density*

It should be noted that there is already a significant amount of vacant, recently-built office space within the 500-Foot Study Area and the area has historically shown stronger absorption of light-industrial, flex space. As such, HR&A expects that the demand for space shown above will be split between roughly 70 percent office and 30 percent flex uses. All further rents, occupancies, cap rates and capitalized values reflect this breakdown.

Revenue Impact Estimates

Property Value Premiums from Existing Development

As described in the Impact Assumptions section, HR&A expects that the development of transit will generate additional property value for parcels in close proximity to Holt Boulevard.

Based on the dedicated-lane BRT and mixed-lane rapid bus premium assumptions, dedicated-lane BRT route is estimated to increase property values of existing developed properties in the 500-Foot Study Area between **\$10.4 million and \$20.8 million**, while the maximum impact for the same properties from a mixed-lane rapid bus would likely fall between **\$5.2 million and \$10.4 million**.

Figure 43: Transit-Related Property Value Premiums

	Assessed Value (2014)	Estimated Value Premium	Projected Value Low	Projected Value High
Mixed-Lane Rapid Bus				
Commercial	\$ 243,500,000	1%-2%	\$ 2,435,000	\$ 4,870,000
Residential	\$ 138,400,000	2%-4%	\$ 2,768,000	\$ 5,536,000
Total			\$ 5,203,000	\$ 10,406,000
Dedicated-Lane BRT				
Commercial	\$ 243,500,000	2%-4%	\$ 4,870,000	\$ 9,740,000
Residential	\$ 138,400,000	4%-8%	\$ 5,536,000	\$ 11,072,000
Total			\$ 10,406,000	\$ 20,812,000

**All figures in 2014 dollars*

2035 New Development Impacts

To determine the base values for new development, HR&A reviewed comparable and representative properties within the 500-Foot Study Area, including retail, office, flex and rental apartment uses. Taking monthly rent, building efficiency, occupancies and operating/expense ratios, HR&A determined net income per square foot or unit. As noted previously, because of the poor condition of the office market and likely tenants for newly constructed office space in the area, HR&A blended office and flex uses at a ratio of 70 and 30 percent respectively. Although monthly rents for flex space are lower than those of office space, their occupancies are significantly higher in Ontario. HR&A used generally recognized capitalization rates for Ontario and the Inland Empire as a proxy for assessed value. It is important to note that there is a close margin between office/flex capitalized values and construction costs (not shown below) which indicates that office is not likely to be developed in the near term. Speculative office or flex development will not be likely to occur until rents rise to a more profitable level.

Figure 44: New Development Characteristics

	Mo. Rent /SF	Building Efficiency	Occupancy Rate	Operating/ Admin Cost	Net Income/SF	Cap Rate	Capitalized Value*	Type of Rent
Retail	\$1.38	75%	90.0%	5%	\$10.62	7.4%	\$144 Per SF	NNN
Office / Flex**	\$1.65***	90%	88.8%	20%	\$12.66	7.2%	\$177 Per SF	Modified Gross
	Avg. Monthly Rent/Unit	Avg. Annual Rent/Unit		Gross Expense Estimate	Net Income/Unit	Cap Rate	Assessed Value	Average Unit Size
Rental Apartments	\$1,550	\$18,600	95%	30%	\$ 12,369	5.5%	\$224,891 Per Unit	1250

Sources: CBRE, CoStar, Marshall & Swift, Vail Real Estate, HR&A

*As representative of assessed value **Blended 70% Office, 30% Industrial

***Office/flex rent is not reflective of current market, but rather a future value that would support new construction.

By applying the property value premiums described above in relation to the capitalized value of existing development, HR&A estimated a range of values of development supported by new transit development. In total, HR&A expects that the value of development in vacant or otherwise “developable parcels” within the 500-Foot Study Area for mixed-lane rapid bus route could range between \$218.8 million and \$222.1 million by 2035, as shown below in Figure 45.

Figure 45: Rapid Bus New Development Value at Build Out (2035)

	Capitalized Value		Capitalized Value	Estimated Value Premium	Projected Value (Low)	Projected Value (High)
Commercial						
Retail	\$144	per square foot	\$ 18,500,000	1%-2%	\$ 18,700,000	\$ 18,900,000
Office	\$177	per square foot	\$ 78,500,000	1%-2%	\$ 79,300,000	\$ 80,100,000
Total			\$ 97,000,000		\$ 98,000,000	\$ 99,000,000
Residential						
Multi-Family Residential	\$225,000	per unit	\$ 118,400,000	2%-4%	\$ 120,800,000	\$ 123,100,000
Total			\$ 312,400,000		\$ 218,800,000	\$ 222,100,000

*All figures in 2014 dollars

Higher estimated value premiums, combined with HR&A’s projections of a greater amount of built area, indicates that the value of development in the 500-Foot Study Area with a dedicated-lane BRT route could be over \$80 million greater than the rapid bus alternative. Residential uses will likely account for the majority

of value, with an estimated range of \$163.8 million to \$170.1 million and a total development value of between \$295.7 million and \$304.6 million.

Figure 46: BRT New Development Value at Build Out (2035)

	Capitalized Value		Capitalized Value	Estimated Value Premium	Projected Value (Low)	Projected Value (High)
Commercial						
Retail	\$144	per square foot	\$ 24,700,000	2%-4%	\$ 25,200,000	\$ 25,700,000
Office	\$177	per square foot	\$ 104,600,000	2%-4%	\$ 106,700,000	\$ 108,800,000
Total			\$ 129,300,000		\$ 131,900,000	\$ 134,500,000
Residential						
Multi-Family Residential	\$225,000	per unit	\$ 157,500,000	4%-8%	\$ 163,800,000	\$ 170,100,000
Total			\$ 416,100,000		\$ 295,700,000	\$ 304,600,000

**All figures in 2014 dollars*

Total Tax Revenue Impacts

Both the property value premium and build out of new development translate into additional property tax revenues received the City of Ontario. Factoring the City of Ontario's 16.7 percent share of overall 1% property tax revenue, the City could expect to receive between **\$375,000 and \$389,000** in annual property tax revenue in 2035 from the 500-Foot Study Area with a mixed-lane rapid bus route. A BRT line may generate significantly higher property tax revenue, with estimates ranging between **\$512,000 and \$545,000** in the 500-Foot Study Area.

HR&A also estimated sales taxes to the City of Ontario based on projected retail area, factoring in building efficiencies as well as an estimated share of taxable sales. Applying a an estimate of \$300 in annual sales per square foot, HR&A projects that sales tax revenue from rapid-bus associated development could account for roughly \$200,000 annually, with BRT-related development generating as much as \$270,000 by 2035. At build out, HR&A estimates that combined sales and property tax revenue to the City of Ontario related from a new dedicated-lane BRT route will be approximately **\$200,000 greater annually** as compared to a mixed-lane rapid bus route.

Figure 47: Annual Impacts at Build Out (2035)

	Low	High
Mixed-Lane Rapid Bus		
Annual Property Tax	\$ 2,239,000	\$ 2,325,000
City of Ontario Share (16.7%)	\$ 375,000	\$ 389,000
Sales Tax**	\$ 203,000	\$ 203,000
City of Ontario Total	\$ 578,000	\$ 592,000
Dedicated-Lane BRT		
Annual Property Tax	\$ 3,061,000	\$ 3,254,000
City of Ontario Share (16.7%)	\$ 512,000	\$ 545,000
Sales Tax**	\$ 271,000	\$ 271,000
City of Ontario Total	\$ 783,000	\$ 816,000

**All figures in 2014 dollars*

***Assumes 70% of sales are taxable, roughly \$300 annual sales psf)*

To better compare the tax revenue impact to the City of Ontario, HR&A discounted projected tax revenue over the next 30 years, through 2043. These values include a 20-year development timeline for retail, office and residential development, as well as a 2 percent annual inflation, the cap for property values in the State of California imposed by Proposition 13. Factoring in a 5 percent discount rate, roughly similar to the cost of public money, Figure 48 indicates the City's possible return on a BRT or rapid-bus transit investment. It is important to note, however, that these estimates are primarily for comparative purposes, indicating the relative benefit discounted to 2014, of each transit type. HR&A estimates that the value of dedicated-lane BRT to the City of Ontario is roughly \$3.1 million greater than a mixed-lane rapid bus system.

Figure 48: Net Present Value of 30-Year Incremental Tax Revenue to the City of Ontario

Rate	Rapid Bus		BRT	
5% Net Present Value				
New Development Property Tax	\$	3,800,000	\$	5,180,000
Existing Incremental Property Tax	\$	250,000	\$	500,000
Subtotal Property Tax	\$	4,050,000	\$	5,680,000
Sales Tax	\$	4,510,000	\$	6,010,000
Total Discounted Tax Revenue	\$	8,560,000	\$	11,690,000

Source: HR&A

Economic Impacts

Economic impacts provide a measure of the economic benefits that the projected new development identified in the 500-Foot Study Area will generate to the San Bernardino County economy. Total economic impacts include direct Ontario impacts, as well as the subsequent re-spending of these initial dollars through business and household purchases within the San Bernardino economy (the indirect and induced impacts). Economic impacts are measured in terms of jobs, earnings, and output in the economy.

The economic impacts of the dedicated-lane BRT and mixed-lane rapid bus are expected to be generated as result of: (1) construction of the new development supported by each transit alternative, and (2) the ongoing office and retail activities that occur within the new development in the 500-Foot Study Area. HR&A used the IMPLAN analysis tool to estimate direct, indirect and induced impacts.

Construction Impacts

HR&A determined construction-related impacts based on estimates of local construction costs for the new development supported by each alternative. Estimated construction costs for development supported under the mixed-lane rapid bus is approximately \$187 million and \$249 million for dedicated lane BRT.

Figure 49 presents the construction impacts anticipated from development under the mixed-lane rapid bus. Assuming approximately 85 percent of construction purchases are made in San Bernardino County, HR&A determined that construction related to new development in the 500-Foot Study Area with a mixed-lane rapid bus transit route could create approximately 1,100 direct jobs in Ontario, supporting \$64 million in earnings. All construction job-related figures are spread over the construction period¹⁸. Throughout San

¹⁸ A person-year job is a job for one person for one year. Four person-year jobs across a two-year construction period can be two jobs for two years or four jobs in one year.

Bernardino County, development associated with the bus rapid transit alternative will support a total of 1,670 jobs and \$87 million in earnings across the construction period.

Construction impacts related to development in the 500 foot Study Area with a dedicated-lane BRT route are roughly one-third higher than rapid bus impacts. HR&A estimates that development in the 500-Foot Study Area with a new dedicated-lane BRT line could create 1,470 direct Ontario jobs with earnings of \$85 million and total San Bernardino impacts of 2,220 jobs with earnings of \$116 million across the construction period.

**Figure 49: Construction-Related Impacts of New Development
Within 500 Feet of New Transit in Ontario**

	Employment	Labor Income	Output
<i>Mixed-Lane Rapid Bus</i>			
Direct Effect	1,100	\$ 64,119,000	\$ 158,694,000
Indirect Effect	266	\$ 10,929,000	\$ 24,615,000
Induced Effect	304	\$ 11,727,000	\$ 33,589,000
Total Rapid	1,669	\$ 86,775,000	\$ 216,898,000
<i>Dedicated-Lane BRT</i>			
Direct Effect	1,465	\$ 85,413,000	\$ 211,374,000
Indirect Effect	354	\$ 14,554,000	\$ 32,779,000
Induced Effect	405	\$ 15,620,000	\$ 44,742,000
Total BRT	2,224	\$ 115,587,000	\$ 288,895,000

*Source: IMPLAN, HR&A

Ongoing Economic Impacts

HR&A estimated the ongoing impacts of employment in new commercial space developed 500-Foot Study Area. To do so, HR&A first estimated the amount of employees generated based on industry-standard square footage ratios, with roughly 300 square feet per office employee and 450 square feet of built space per retail employee. The 500-Foot Study Area is projected to support 1,500 new jobs under the mixed-lane rapid bus alternative and 2,000 new jobs under the dedicated-lane BRT alternative.

For bus rapid transit, HR&A estimates an additional 600 indirect and induced jobs in San Bernardino County for a total annual impact of 2,100 ongoing jobs with \$89 million in earnings (Figure 50). A dedicated-lane BRT route would stimulate roughly 33 percent more employment, income and overall output over the mixed-lane rapid bus system and is expected to generate annual ongoing impacts supporting 2,800 jobs with \$118 million in earnings.

**Figure 50: Ongoing Annual Impacts of New Development
Within 500 Feet of New Transit in Ontario**

<i>Mixed-Lane Rapid Bus</i>				
Direct Effect	1,501	\$	66,804,000	\$ 183,479,000
Indirect Effect	295	\$	10,059,000	\$ 26,329,000
Induced Effect	311	\$	12,005,000	\$ 34,390,000
Total Rapid	2,107	\$	88,868,000	\$ 244,197,000
<i>Dedicated-Lane BRT</i>				
Direct Effect	2,001	\$	89,072,000	\$ 244,638,000
Indirect Effect	393	\$	13,412,000	\$ 35,105,000
Induced Effect	415	\$	16,006,000	\$ 45,853,000
Total BRT	2,809	\$	118,491,000	\$ 325,596,000

*Source: IMPLAN, HR&A

Funding

Key Funding Sources

With the amendment of California Redevelopment Law leading to the dissolution of the Redevelopment Agencies in 2012, municipalities were left with limited tools to obtain funding for key public benefit projects. Since 2012, a number of new potential funding sources have emerged. Some of these tools are new, and their application and adoption remains to be seen.

HR&A has identified some of the most relevant funding sources that can be used to support transit and related improvements, including innovative tools, new programs, and existing tools:

- **Innovative Tax Funding Sources**
 - **Enhanced Infrastructure Financing Districts (Enhanced IFDs)** are a new financing tool with lower requirements than traditional infrastructure financing districts, which require two-thirds of property owners' approval. Enhanced IFDs can be approved with a simple majority and can use tax increments net of education-related funds to repay bonds for up to 45 years. Further detail, including estimated funding capacity related to rapid bus and BRT-related development is included below.
 - **Tax Subventions.** New taxes need to be approved by a two-thirds majority which is a major challenge to get approved. However, a tax subvention is a value capture strategy where the developer/property owner provides a certain level of public benefit upfront and a city agrees to provide back a share of taxes generated by the project to the developer/property owner in exchange.
- **New State Programs**
 - **Cap and Trade** takes advantage of State statutes that distribute proceeds from the trade of rights to produce greenhouse gas emissions. Roughly 60 percent of the proceeds, which contribute over \$800 million to the 2014-2015 budget, are allocated to public transit, affordable housing and sustainability. A handful of State authorities distribute the money annually, described in detail below.
- **Fees and Assessments**
 - **Assessment districts** are permitted in the State of California for projects that provide a particular and distinct benefit beyond general benefits to real property or the public at large. Assessments must be proportional to the benefit conferred on each parcel, rather than the value of the parcel, and become a lien on the properties. Assessment districts require a weighted majority vote of property owners within the district.
 - **Development impact fees** are monetary exactions that are charged, typically to offset costs associated with providing public services to a new development. These fees must relate to the impact created by the development, otherwise they may be considered a special tax, which would be subject to a two-thirds voter approval.

The top three sources, Enhanced IFD, Tax Subvention, and Cap and Trade are the most advantageous sources of funding for the project, in that they do not impose any new tax or fee burdens on new development and will not impact the overall feasibility. Enhanced IFDs are new and have not been used, but are approved

and can provide Tax Increment Financing that can be bonded. Cap and trade funds are equivalent to grant funds and would be a clear benefit to either alternative but the criteria for municipalities to qualify and capture these funds is unclear at this time. Tax subvention can be used to help support public improvements, but since sales taxes will likely comprise a majority of a subvention package, they may have a significant impact on the discretionary revenues available to a City during the subvention period. Additionally, sales tax subventions are better used for a specific large-scale development that generate significant local taxes. Otherwise, property owners with retail are supporting a greater share of public benefits relative to other users. Potential revenues from Enhanced IFDs and sales tax subventions are described in the following sections.

Assessment and fees are an option. However, the disadvantage of these sources is that they will put an additional financial burden on any new developments that may impact the overall feasibility of new development within the Corridor. In a strong real estate market where rents provide a high enough return to developers to absorb new fees or assessment, assessments and developer fees can be a reasonable option. Given the recent recession and overall improving but still weak real estate dynamics in the Inland Empire, additional assessments and fees may put the feasibility of development at risk.

Cap and Trade

California's Cap and Trade program is a tool for helping the State achieve its legislatively adopted goal return to 1990 levels of greenhouse gas emissions by 2020. The program sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas (GHG) emissions and then allows entities to trade the right to produce those emissions. Cap and Trade establishes a financial incentive for industries subject to the statewide cap to make long-term investments in cleaner fuels, more efficient energy use, and transformational technological and scientific innovations.

Proceeds from the market for greenhouse gas emissions is allocated in the statewide budget each year. Chapter 830, Statutes of 2012 (SB 535), requires that the State invest at least 10 percent of the emission auction proceeds within the most disadvantaged communities and at least 25 percent of the proceeds must be invested to benefit these communities. The 2014-2015 State Budget provides \$832 million of Cap and Trade proceeds to support existing and pilot programs that will reduce GHG emissions. The Budget permanently allocates 60 percent of future auction proceeds to public transit, affordable housing, sustainable communities, and high-speed rail. The Affordable Housing and Sustainable Communities Program (AHSC) within Cap and Trade has been allocated \$130 million to support the implementation of Sustainable Communities Strategies required by Chapter 728, Statutes of 2008 (SB 375), and to provide similar support to other areas with GHG reduction policies, but not subject to SB 375 requirements.

The Strategic Growth Council, which is composed of secretaries from numerous state agencies, coordinates this program. The Council's Sept 23, 2014 draft guidelines propose that 40 percent of its estimated \$130 million in cap-and-trade funds be devoted to transit-oriented development (TOD) projects and that another 30 percent be devoted to a variety of infrastructure-related programs that may include housing. Projects that benefit disadvantaged communities will be given priority, as well as projects that will reduce GHG emissions by increasing transit ridership, active transportation (walking/biking), affordable housing near transit stations, preservation of agricultural land, and local planning that promotes infill development and reduces the number of vehicle miles traveled. The California State Budget also provides an ongoing

commitment of 20 percent of future auction proceeds for this program and requires that at least half of the expenditures be allocated for affordable housing projects.

City of Ontario Implications

This is the first year of Cap and Trade and the amount of funding available through Cap and Trade funds is not clear. There is also likely to be strong competition for this source of funding.

SB 628 Enhanced Infrastructure Financing District

Enhanced Infrastructure Financing Districts are a new financing tool approved by the Governor in September of this year. Infrastructure Financing Districts have been in existence for several years in California, but there has been limited use of these districts due to the 2/3 property owner voting requirement as well as the limited use of the funds. The Enhanced Infrastructure Financing Districts (Enhanced IFDs) broadens the capability of the infrastructure financing district by allowing a city or county to establish a district, adopt a financing plan, and issue bonds on the approval of only 55 percent of voters.

Enhanced IFDs allow the authority to bond tax increment revenues and use funds to finance public capital facilities or other specific projects of community wide significance, including transit priority projects, and projects to implement a sustainable community’s strategy. The tax increment financing would allow the IFD authority to use the tax increment net of moneys payable to a K-12 school districts, community college districts, county office of education, or to the Educational Revenue Augmentation Fund to repay bonds for up to 45 years from the date of the issuance of the bonds, with the agreement of all taxing entities.

City of Ontario Implications

Enhanced IFDs are a significant potential new tool to help support the West Valley Connector. Figure 51 shows illustrative 30-year funding capacity of incremental property tax revenue net of the share to education within the 500-foot buffer around Holt Boulevard in Ontario¹⁹. This estimate assumes that 39.2 percent of the 1 percent property tax on incremental assessed value within the 500-Foot Study Area can be applied towards Enhanced IFD bonds.

Figure 51: Illustrative Enhanced IFD Funding Capacity within the 500-Foot Study Area

30-Year Funding Capacity	Rapid Bus	BRT
Enhanced IFD Revenues @5% NPV	\$9,520,000	\$13,340,000

Sales Tax Subvention

As described above a sales tax subvention is a value capture strategy where the developer/property owner provides a certain level of public benefit upfront and a city agrees to provide back a share of sales tax to the developer/property owner in exchange. The amount of the sales tax provided back to the property owner is estimated to equate to upfront public benefit.

¹⁹ HR&A estimated the property tax revenues over 30 years based on projected build out and including 2% inflation of property values, as per Prop. 13 requirements.

The value of the benefit is provided up front by the developer and thus, the public benefit available is calculated based on a private discount rate. Subvention deals have been brokered by the City of Los Angeles and have extended to a maximum of a 25 year period. Typically cities evaluate their future fiscal burden related to new development to inform their decision on the amount of tax subvention. While the subvention package may include a full refund of taxes generated, most subvention packages only include a share of new taxes.

City of Ontario Implications

The following table presents the sales tax subvention opportunity in the 500-Foot Study Area.

Figure 52: Illustrative Value of Sales Tax Subvention in the 500-Foot Study Area

35-Year Sales Tax Subvention Capacity	Rapid Bus	BRT
Full 1% City Sales Tax Increment for 25 years	\$2,870,000	\$3,820,000

Overall Funding Potential Relative to System Cost

The following table presents a benchmark of potential revenues from the Rapid Bus and BRT systems and the projected capital costs of the development of the Ontario segment under evaluation. It should be noted that these revenues represent the upper end of revenue opportunities for these revenue sources.

At the maximum receipt of revenue potential the rapid bus system is estimated to generate more than the anticipated system costs. The dedicated lane BRT potential revenues are not expected to cover the system capital costs for this segment.

Figure 53: Illustrative Funding Capacity Relative to System Costs

Potential Development Funding	Rapid Bus	BRT
Enhanced IFD Revenue Capacity	\$9.5 M	\$13.3 M
Sales Tax Subvention Value	\$2.9 M	\$3.8 M
Cap and Trade	TBD	TBD
Development Revenue Potential	\$12.4 M	\$17.6 M
Segment System Capital Costs	\$4.8 M	\$50M to \$70M
Funding Gap	-	\$32.4 M - \$52.4 M

Appendix A

Appendix Figure 1: Projected Ontario Office Employment

	Model	2011	2012	2013	2014	2015	2020	2025	2035
Estimated Ontario Employment Growth	Growth Factor								
Agriculture, Forestry, Fishing and Hunting	-4.54%	837	799	763	728	695	551	437	275
Mining, Quarrying, and Oil and Gas Extraction	-50.53%	0	0	0	0	0	0	0	0
Utilities	3.52%	631	653	676	700	725	862	1,025	1,449
Construction	1.50%	2,747	2,788	2,830	2,872	2,916	3,141	3,384	3,927
Manufacturing	-3.29%	12,673	12,256	11,852	11,462	11,085	9,376	7,931	5,675
Wholesale Trade	2.12%	10,316	10,535	10,758	10,986	11,219	12,460	13,838	17,068
Retail Trade	1.52%	12,512	12,702	12,896	13,092	13,291	14,333	15,457	17,977
Transportation and Warehousing	2.62%	13,354	13,704	14,063	14,431	14,809	16,854	19,180	24,842
Information	-1.18%	1,948	1,925	1,902	1,880	1,858	1,750	1,649	1,465
Finance and Insurance	2.40%	2,185	2,237	2,291	2,346	2,402	2,705	3,045	3,860
Real Estate and Rental and Leasing	0.50%	1,193	1,199	1,205	1,211	1,217	1,247	1,278	1,343
Professional, Scientific, and Technical Services	4.40%	3,313	3,459	3,611	3,770	3,936	4,881	6,053	9,311
Management of Companies and Enterprises	1.28%	2,178	2,206	2,234	2,263	2,292	2,442	2,603	2,956
Administration & Support, Waste Management and Remediation	1.75%	9,689	9,858	10,031	10,206	10,385	11,326	12,351	14,690
Educational Services	0.89%	4,854	4,897	4,941	4,985	5,030	5,259	5,498	6,010
Health Care and Social Assistance	4.98%	3,580	3,758	3,945	4,142	4,348	5,544	7,069	11,494
Arts, Entertainment, and Recreation	1.61%	716	728	739	751	763	827	896	1,051
Accommodation and Food Services	1.06%	6,543	6,612	6,683	6,754	6,825	7,196	7,586	8,431
Other Services (excluding Public Administration)	1.72%	2,945	2,996	3,047	3,099	3,152	3,432	3,737	4,431
Public Administration	2.64%	934	959	984	1,010	1,037	1,181	1,345	1,745
Total		93,148	94,272	95,452	96,689	97,985	105,367	114,364	137,997

Source: US Census on the Map, CA EDD 2020 Projections, and HR&A

Appendix Figure 2: 2012 San Bernardino Taxable Sales Data

Type of Business	San Bernardino County	
2012 Households	614,640	
Taxable Sales by Type of Business	(000's)	Per Household Sales
Retail and Food Services		
Motor Vehicle and Parts Dealers	\$3,511,089	\$5,712
Auto. Parts, Accessories and Tire Stores	\$476,283	\$775
Furniture and Home Furnishings Stores	\$435,093	\$708
Electronics and Appliance Stores	\$473,174	\$770
Bldg. Matrl. And Garden Equip. and Supplies	\$1,247,091	\$2,029
Food and Beverage Stores	\$1,177,132	\$1,915
Gasoline Stations	\$3,748,749	\$6,099
Clothing and Clothing Accessories Stores	\$1,489,626	\$2,424
General Merchandise Stores	\$2,986,332	\$4,859
Health and Personal Care Stores	\$482,082	\$784
Food Services and Drinking Places	\$2,461,365	\$4,005
Non-Store Retailers	\$170,320	\$277
Other Retail Group	\$1,798,884	\$2,927
Total Retail and Food Services	\$19,980,937	\$32,508
All Other Outlets	\$9,550,983	\$15,539
Totals All Outlets	\$29,531,921	\$48,048

Source: CA State Board of Equalization

Appendix Figure 3: Worker Spending Estimate

	Annual Demand Per Worker
Bldg Materials, Garden Equip. & Supply Stores	\$ -
Grocery Stores	\$ 127
Specialty Food Stores	\$ -
Beer, Wine & Liquor Stores	\$ -
Furniture & Home Furnishings Stores	\$ -
Electronics & Appliance Stores	\$ 96
Clothing & Clothing Accessories Stores	\$ 78
Sporting Goods, Hobby, Book & Music Stores	\$ 30
General Merchandise Stores	\$ 148
Full-Service Restaurants	\$ 107
Limited-Service Eating Places	\$ 102
Special Food Services	\$ -
Drinking Places - Alcoholic Beverages	\$ 18
Health & Personal Care Stores	\$ 99
Miscellaneous Store Retailers	\$ 121
TOTAL	\$ 926

Source: Office Worker Retail Spending in a Digital Age Report and HR&A

Appendix B

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