



Economic Benefits Analysis Technical Report

BROADWAY URBAN CIRCULATOR STUDY

Prepared for



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1.0 Introduction

1.1 Report Purpose

This report evaluates the economic benefits of the Broadway Circulator project, including both streetcar and enhanced bus alternatives. The study is intended to help City of Oakland staff, project partners, elected officials, the business community, residents and other stakeholders understand the range of economic benefits that might be achieved from a downtown circulator and to compare the potential benefits of the streetcar and enhanced bus alternatives. A summary of the findings from the analysis is available in a separate report.

In addition to the two transit options (enhanced bus and streetcar), three alignments are currently being considered for the Broadway Circulator project. The following alignments and transit options are included in the economic benefits analysis:

- **Jack London Square to 27th Street alignment** – enhanced bus and streetcar scenarios;
- **Jack London Square to MacArthur BART alignment** – enhanced bus and streetcar scenarios; and
- **Jack London Square to Rockridge BART alignment** – enhanced bus scenario.

The analysis estimates future development, property values, retail and restaurant sales, hotel revenue, associated tax revenue and jobs between 2014 and 2040. It focuses on properties and businesses within three blocks, or about a quarter-mile, of the proposed alignment, corresponding to an area that is considered to be within easy walking distance of the streetcar.

For each transit scenario, the economic benefits are measured in relation to a “baseline” growth scenario, which represents a “no new transit” future that includes the assumption that the existing Broadway Shuttle (or B Shuttle) is discontinued.¹ This allows the benefits to be expressed as an incremental impact separate from expected general economic growth. The baseline growth scenario was based on historic trends for office, residential, retail, and hotel development and activity within a quarter-mile of the circulator alignments, regional growth projections and current planned or proposed development in the area.

The economic benefits measured in the analysis generally accrue to three groups:

- **Property owners** benefit from increased property values and improved development potential resulting from improved access and connectivity. Existing properties are expected to experience an increase in value one year before the new transit begins service, while new development will accrue gradually over time as more projects are built.
- **Business owners** benefit from additional revenue for both retail businesses and hotels along the transit alignment. The benefits are expected to begin upon the transit’s opening, as it facilitates access to businesses by workers, residents, shoppers, conventioners and other visitors.

¹ The analysis assumes that the B Shuttle is discontinued because there is no guaranteed funding source to ensure that the current service continues.

- **Local government** benefits from the additional property tax, property transfer tax, sales tax, transient occupancy tax, and business license tax revenues that result from the increases to property values, retail sales, hotel revenues, and other business activity in the area.

All of the above benefits are also associated with an increase in jobs, a benefit that accrues to the general public. Transit is also associated with other economic development benefits and environmental, health and safety benefits that accrue to the transit riders and/or the community-at-large.

1.2 Report Organization

Following this introduction, the report is organized into the following sections:

Section II, Summary of Results, summarizes the streetcar and enhanced bus benefits to property owners, business owners and local government.

Section III, Overview of Streetcar Benefits, provides a framework for understanding the kinds of economic benefits that transit can provide to the study area.

Section IV, Existing Conditions, describes the existing land use patterns, retail and hotel performance, and development opportunities in the study area.

Section V, Benefits to Property Owners, provides estimates of future property value growth in the study area, with and without a streetcar or enhanced bus.

Section VI, Benefits to Business Owners, provides estimates of retail sales and hotel revenue growth in the study area, with and without a streetcar or enhanced bus.

Section VII, Benefits to Local Government, provides estimates of future property tax revenue, sales tax revenue and transient occupancy tax (TOT) revenue from the study area, with and without a streetcar or enhanced bus.

Section VIII, Other Benefits, provides estimates of future jobs, with and without a streetcar or enhanced bus.

Appendix: Analysis Methodology, provides background on methodology and assumptions for the analysis and detailed projections for all major categories of economic benefits.

2.0 Summary of Results

This section summarizes the results of the Broadway Circulator economic benefits analysis. (A separate report summarizing the findings from the analysis is also available.) The analysis projects future development, property values, retail sales, hotel revenue and associated tax revenues between 2014 and 2040, with and without a streetcar or enhanced bus. The impact of each circulator alignment is compared against a baseline growth scenario that represents expected conditions in the absence of a new transit investment. The baseline scenario varies with each alignment, since each alignment incorporates different geographies with unique characteristics.

Figure 1 summarizes the projected cumulative economic benefits generated under each transit and alignment scenario through 2040. Total benefits are shown for the baseline, streetcar, and enhanced bus scenarios, as well as the specific benefit estimated to be attributable to transit (the amount in addition to expected baseline growth).

Figure 1: Cumulative Baseline, Streetcar, and Enhanced Bus Benefits, 2014-2040, by Alignment and Transit Type (2014 dollars)

	Baseline without Transit			Benefit Over Baseline Total	
	Total	Streetcar Total	Enhanced Bus Total	Streetcar	Enhanced Bus
Jack London Square to 27th Street					
Property Value Growth over Existing	\$2,044,881,000	\$2,384,218,000	\$2,248,006,000	\$339,337,000	\$203,125,000
Cumulative Retail Sales	\$13,379,198,000	\$13,800,128,000	\$13,595,969,000	\$420,930,000	\$216,771,000
Cumulative Hotel Revenue	\$1,279,422,000	\$1,403,776,000	\$1,353,620,000	\$124,354,000	\$74,198,000
Cumulative Oakland Revenue	\$905,138,000	\$981,069,000	\$949,846,000	\$75,931,000	\$44,708,000
<i>Cumulative Property Tax Revenue</i>	\$246,139,000	\$264,086,000	\$256,769,000	\$17,947,000	\$10,630,000
<i>Cumulative City Sales Tax Revenue</i>	\$121,482,000	\$125,214,000	\$123,413,000	\$3,732,000	\$1,931,000
<i>Cumulative Hotel Tax Revenue (TOT)</i>	\$179,119,000	\$196,529,000	\$189,507,000	\$17,410,000	\$10,388,000
<i>Cumulative Business License Tax Revenue</i>	\$2,891,000	\$3,589,000	\$3,268,000	\$698,000	\$377,000
<i>Cumulative Property Transfer Tax Revenue</i>	\$355,507,000	\$391,652,000	\$376,889,000	\$36,145,000	\$21,382,000
Job Growth over Existing	8,160	9,310	8,840	1,150	680
Jack London Square to MacArthur BART					
Property Value Growth over Existing	\$2,875,593,000	\$3,317,148,000	\$3,139,976,000	\$441,555,000	\$264,383,000
Cumulative Retail Sales	\$19,060,927,000	\$19,651,426,000	\$19,360,610,000	\$590,499,000	\$299,683,000
Cumulative Hotel Revenue	\$1,279,422,000	\$1,408,523,000	\$1,356,365,000	\$129,101,000	\$76,943,000
Cumulative Oakland Revenue	\$1,105,717,000	\$1,194,638,000	\$1,157,918,000	\$88,921,000	\$52,201,000
<i>Cumulative Property Tax Revenue</i>	\$306,018,000	\$327,718,000	\$318,864,000	\$21,700,000	\$12,846,000
<i>Cumulative City Sales Tax Revenue</i>	\$176,135,000	\$181,321,000	\$178,777,000	\$5,186,000	\$2,642,000
<i>Cumulative Hotel Tax Revenue (TOT)</i>	\$179,119,000	\$197,193,000	\$189,891,000	\$18,074,000	\$10,772,000
<i>Cumulative Business License Tax Revenue</i>	\$4,061,000	\$4,969,000	\$4,542,000	\$908,000	\$481,000
<i>Cumulative Property Transfer Tax Revenue</i>	\$440,384,000	\$483,438,000	\$465,844,000	\$43,054,000	\$25,460,000
Job Growth over Existing	9,110	10,410	9,880	1,300	770
Jack London Square to Rockridge BART					
Property Value Growth over Existing	\$3,521,331,000	n/a	\$3,813,643,000	n/a	\$292,312,000
Cumulative Retail Sales	\$22,692,174,000	n/a	\$23,185,197,000	n/a	\$493,023,000
Cumulative Hotel Revenue	\$1,279,422,000	n/a	\$1,359,109,000	n/a	\$79,687,000
Cumulative Oakland Revenue	\$1,280,162,000	n/a	\$1,340,963,000	n/a	\$60,801,000
<i>Cumulative Property Tax Revenue</i>	\$421,627,000	n/a	\$439,492,000	n/a	\$17,865,000
<i>Cumulative City Sales Tax Revenue</i>	\$201,808,000	n/a	\$206,179,000	n/a	\$4,371,000
<i>Cumulative Hotel Tax Revenue (TOT)</i>	\$179,119,000	n/a	\$190,275,000	n/a	\$11,156,000
<i>Cumulative Business License Tax Revenue</i>	\$4,750,000	n/a	\$5,440,000	n/a	\$690,000
<i>Cumulative Property Transfer Tax Revenue</i>	\$472,857,000	n/a	\$499,576,000	n/a	\$26,719,000
Job Growth over Existing	9,410	n/a	10,240	n/a	830

Source: Strategic Economics, 2014.

2.1 Property Owner Benefits

Property owners will benefit from enhanced property values adjacent to the circulator, as well as enhanced development potential. The estimated benefits are detailed below.

2.1.1 Development Potential

Figure 2 shows the estimated increase in new development between 2014 and 2040 for all alignment and circulator options. Baseline growth was based on the historic capture of development within a quarter-mile of the circulator alignments, and informed by the location and amount of planned or proposed development in the area. The streetcar and enhanced bus development increases (relative to the baseline) assume an increased capture of regional growth upon opening of the circulator. The impact of the streetcar is assumed to be greater than the enhanced bus due to its higher projected ridership, higher visibility, and increased perception of permanence among developers, residents, and business owners.

Figure 2: Growth in Development, 2014 to 2040 (rounded)

	Growth without Transit Improvements	Growth with Streetcar	Growth with Enhanced Bus	Streetcar Benefit over Baseline Growth	Enhanced Bus Benefit over Baseline Growth
Jack London Square to 27th Street					
Residential Units	6,970	7,720	7,420	750	450
Office Square Feet	2,107,000	2,360,000	2,259,000	253,000	152,000
Retail Square Feet	396,000	463,000	431,000	67,000	35,000
Hotel Rooms	730	780	760	50	30
Jack London Square to MacArthur BART					
Residential Units	8,130	9,000	8,650	870	520
Office Square Feet	2,296,000	2,572,000	2,462,000	276,000	166,000
Retail Square Feet	560,000	654,000	609,000	94,000	49,000
Hotel Rooms	730	800	770	70	40
Jack London Square to Rockridge BART					
Residential Units	8,240	n/a	8,770	n/a	530
Office Square Feet	2,335,000	n/a	2,503,000	n/a	168,000
Retail Square Feet	671,000	n/a	750,000	n/a	79,000
Hotel Rooms	730	n/a	780	n/a	50

Source: Strategic Economics, 2014.

2.1.2 Property Values

The estimated property value impacts from the Broadway Circulator are shown in Figure 3. As of 2040, a streetcar is projected to generate a total increase in property value of \$339 million to \$442 million depending on the alignment. An enhanced bus is projected to generate \$203 million to \$292 million depending on the alignment. These impacts result from additional residential, office, retail, and hotel development throughout the study area, plus a one-time increase in value for existing properties generated immediately prior to the opening of new transit.

Figure 3: Streetcar Benefit to Property Value as of 2040 (2014 dollars)

	Streetcar Benefit	Enhanced Bus Benefit
JLS to 27th Street	\$339,337,000	\$203,125,000
JLS to MacArthur BART	\$441,555,000	\$264,383,000
JLS to Rockridge BART	n/a	\$292,312,000

Source: Strategic Economics, 2014.

2.2 Business Owner Benefits

Local business owners will benefit from a circulator through increased retail sales and hotel revenues. The estimated impacts are described below.

2.2.1 Retail Sales

The circulator will increase retail sales by improving customer circulation along its corridor, thereby increasing access to spending opportunities for residents, workers, visitors, and other local and regional shoppers. Figure 4 summarizes the benefit to retail sales by alignment and transit mode in 2040. With a streetcar, additional retail sales are projected to range from \$23.5 to \$33.0 million annually in 2040, depending on the alignment. With an enhanced bus, additional retail sales are projected to range from \$12.3 to \$27.8 million annually in 2040, depending on the alignment.

Figure 4: Projected Annual Benefit to Retail Sales in 2040 (2014 dollars)

	Streetcar Benefit	Enhanced Bus Benefit
JLS to 27th Street	\$23,460,000	\$12,304,000
JLS to MacArthur BART	\$33,011,000	\$17,120,000
JLS to Rockridge BART	n/a	\$27,774,000

Source: Strategic Economics, 2014.

2.2.2 Hotel Revenues

The Broadway Circulator will make Oakland more appealing for tourists, business travelers, conventioners, and other visitors, who will find it easier to explore Oakland. This increased appeal will translate to additional hotel demand along the corridor. Figure 5 summarizes the increased annual hotel revenue by alignment and transit mode by 2040. With a streetcar, additional hotel revenue is projected to range from \$7.9 to \$8.3 million annually in 2040, depending on the alignment. With an enhanced bus, additional hotel revenue is projected to range from \$4.7 to \$5.2 million annually in 2040, depending on the alignment.

Figure 5: Projected Annual Benefit to Hotel Sales in 2040 (2014 dollars)

	Streetcar Benefit	Enhanced Bus Benefit
JLS to 27th Street	\$7,873,000	\$4,683,000
JLS to MacArthur BART	\$8,334,000	\$4,950,000
JLS to Rockridge BART	n/a	\$5,217,000

Source: Strategic Economics, 2014.

2.3 Local Government Benefits

The economic benefits described above will also result in increased tax revenues for the City of Oakland. Figure 6 summarizes the estimated annual benefits accruing to the city (above the baseline scenarios) in 2040, including property tax, property transfer tax, business license tax, transient occupancy tax (TOT), and sales tax revenue.

Figure 6: Projected Annual Benefit to City Tax Revenues in 2040 (2014 dollars)

	Streetcar Benefit	Enhanced Bus Benefit
Jack London Square to 27th Street		
Annual Oakland Revenue	\$5,703,000	\$3,365,000
Property Tax Revenue	\$1,503,000	\$890,000
Sales Tax Revenue	\$206,000	\$108,000
TOT Revenue	\$1,102,000	\$656,000
Business License Tax Revenue	\$41,000	\$23,000
Property Transfer Tax Revenue	\$2,851,000	\$1,688,000
Jack London Square to MacArthur BART		
Annual Oakland Revenue	\$6,666,000	\$3,926,000
Property Tax Revenue	\$1,792,000	\$1,061,000
Sales Tax Revenue	\$286,000	\$149,000
TOT Revenue	\$1,167,000	\$693,000
Business License Tax Revenue	\$53,000	\$29,000
Property Transfer Tax Revenue	\$3,368,000	\$1,994,000
Jack London Square to Rockridge BART		
Annual Oakland Revenue	n/a	\$4,548,000
Property Tax Revenue	n/a	\$1,466,000
Sales Tax Revenue	n/a	\$243,000
TOT Revenue	n/a	\$730,000
Business License Tax Revenue	n/a	\$40,000
Property Transfer Tax Revenue	n/a	\$2,069,000

Source: Strategic Economics, 2014.

2.4 Job Attraction

Figure 7 shows projected additional jobs in 2040 associated with new development in each of the circulator options (above and beyond baseline projections). As shown, all of the transit scenarios are expected to result in increased jobs located along the streetcar or enhanced bus route, although jobs impacts are significantly higher in the streetcar scenarios than they are in the enhanced bus scenarios.

Figure 7: Increase in Jobs over Baseline Growth, 2014-2040

	Streetcar Benefit	Enhanced Bus Benefit
JLS to 27th Street	1,150	680
JLS to MacArthur BART	1,290	770
JLS to Rockridge BART	n/a	830

Source: Strategic Economics, 2014.

3.0 Circulator Economic Benefits and Methodology Overview

This section introduces the expected kinds of economic benefits that might be generated by the Broadway Circulator project and provides a general overview of the methodology used to calculate those benefits.

3.1 Streetcar and Bus Economic Development Impacts

Urban circulators, particularly streetcar projects, are attracting increased interest in the US because they are viewed as offering the potential to contribute to neighborhood economic development as well as mobility. Circulators typically serve a limited area with multiple activity centers, providing a convenient way for tourists, employees, residents and other visitors to travel between multiple destinations along the line. In contrast with light rail and heavy rail transit systems, which are designed for longer trips, the smaller size and greater maneuverability of urban circulators allows for closer integration with the surrounding urban environment. Another important function of many circulators is in making the “last mile” connection for commuters who need access to regional public transit, such as BART.

3.1.1 Literature Review

To understand the range of potential economic benefits associated with transit circulator projects, Strategic Economics reviewed prior studies related to streetcar and bus impacts, as well as general literature on the effects of transit on property values and real estate development. The findings are summarized below.

3.1.1.1 Streetcar Impacts

Although modern streetcars are a relatively new phenomenon in U.S. cities, recent studies of Portland, Seattle and Tampa provide strong evidence that streetcars can generate new development, increased property values, increased retail sales and increased visitation. Studies of pre- and post-streetcar development in Portland have established that greater intensity of development has occurred along the alignment following the streetcar’s announcement in 1997 and ensuing opening in 2001. Development since 1997 within one block of the streetcar has achieved over 90 percent of allowable floor-area ratios (FAR), compared to approximately 35 percent prior to 1997.² In Tampa, the formerly-isolated Channelside District has gained connectivity to downtown via the streetcar, which is credited with enabling the redevelopment of numerous properties into condos and high-rise apartments.³ In terms of property values, analysis of county assessor’s parcel data has shown that properties along the streetcar alignments in Portland, Seattle and Tampa have all shown greater increases in value compared to properties elsewhere in the city over the same time period.⁴ Case studies of these cities also attribute the

² E.D. Hovee and Rick Gustafson, “Streetcar-Development Linkage: The Portland Streetcar Loop,” presentation given at TRB/APTA Light Rail & Streetcar Conference, 2012.

<http://onlinepubs.trb.org/onlinepubs/conferences/2012/LRT/RGustafson.pdf>

³ The Brookings Institution, HDR, Reconnecting America and RCLCO, “Value Capture and Tax-Increment Financing Options for Streetcar Construction,” June 2009.

<http://www.reconnectingamerica.org/assets/Uploads/brookingsvalueaddedtif2009.pdf>

⁴ The Brookings Institution et. al., “Value Capture and Tax-Increment Financing Options for Streetcar Construction”.

proliferation of retail businesses in Portland’s Pearl District and Tampa’s increased competitiveness in attracting conventions to the streetcar.

3.1.1.2 Bus Impacts

Although most studies of transit impacts are focused on rail projects, some research has also concluded that BRT and bus lines can also promote similar types of economic activity. For example, recent studies of Pittsburgh and Boston’s bus rapid transit (BRT) systems found that all else being equal, a single-family home located 100 feet away from a Pittsburgh East Busway station is worth approximately \$9,745 more than a property located 1,000 feet away,⁵ while a condo located 100 feet away from a Boston Silver Line station is worth \$45 per square foot more than a condo located 1,000 feet away.⁶

While the perceived permanence of streetcar systems are often credited with helping to attract private development, there is also evidence that bus circulators can offer similar types of benefits.⁷ An early study of new BRT lines in Cleveland, Ohio, Eugene, Oregon and Kansas City, Missouri found significant amounts of new public and private investment underway, including new development by hospitals and universities in Cleveland and Eugene and a \$150 million federal grant for urban reinvestment in Kansas City. The study concluded that BRT projects with dedicated right-of-ways and other substantial physical infrastructure can serve as focal points for attracting new development, particularly if located near major institutions and/or employment centers and paired with supportive land use policies and development incentives.⁸ A comparative study of 21 North American light rail and bus rapid transit lines also found that transit lines located adjacent to downtowns or other major destinations had the strongest impact on development, while lines located adjacent to highways or other barriers had a more limited impact.⁹ This supports the idea that a downtown circulator is likely to have significant impacts on development.

Previous studies do not offer clear conclusions about the specific difference in the level of benefits that might be achieved via a streetcar versus an enhanced bus investment. Transit projects vary considerably in terms of their design features, quality of service, integration with other transit modes, and other factors, making it challenging to isolate the relative impacts of different transit modes. Furthermore, no comparative studies have been conducted to show the relative benefit of different technologies in the same location. In general, studies suggest that investments in fixed infrastructure such as rail or a dedicated bus lane are more likely to impact development. As described in greater detail in the appendix,

⁵ Victoria A. Perk, Martin Catalá, *Land Use Impacts of Bus Rapid Transit: Effects of BRT Station Proximity on Property Values along the Pittsburgh Martin Luther King, Jr. East Busway*.

⁶ Perk, “Land Use & Property Value Impacts of BRT.”

⁷ Walter Hook, Stephanie Lotshaw, and Annie Weinstock, *More Development for Your Transit Dollar: An Analysis of 21 North American Transit Corridors* (Institute for Transportation & Development Policy, September 2013), http://www.itdp.org/documents/ITDP_MORE_DEVELOPMENT_924.pdf.

⁸ United States Government Accountability Office, *BRT: Projects Improve Transit Service and Can Contribute to Economic Development*.

⁹ Walter Hook, Stephanie Lotshaw, and Annie Weinstock, *More Development for Your Transit Dollar: An Analysis of 21 North American Transit Corridors* (Institute for Transportation & Development Policy, September 2013), http://www.itdp.org/documents/ITDP_MORE_DEVELOPMENT_924.pdf.

for the purpose of this analysis we assumed that a streetcar would have a relatively higher impact than an enhanced bus on economic activity due to the higher capital investment and higher projected ridership.

3.2 Expected Economic Benefits of the Broadway Circulator

While the results of the studies described above indicate that streetcar and enhanced bus projects have generated a variety of economic impacts in US cities, it is also clear that the benefits of any one specific transit project will vary depending on local policy, land use patterns, market conditions and other factors. In fact, one recent study found that government support for TOD – as evidenced by regulatory changes, marketing and financial support -- is the strongest predictor of economic development outcomes.¹⁰

The major categories of expected benefits from the Broadway Circulator are discussed below, based on the results of the literature review and interviews with local businesses, employers, residents and other stakeholders. These categories serve as a general framework for the kinds of economic analysis presented in this report.

3.2.1 Increased Retail and Restaurant Sales

The Broadway Circulator will improve access to local shops and restaurants for residents, workers, regional shoppers and tourists. The B Shuttle has already demonstrated the benefit of improved connections between Jack London Square, Downtown and Uptown for local retail and restaurants; business owners report that the transit service has had a positive impact on restaurants and nightlife along the route. An enhanced bus or streetcar will make it easier for downtown workers to visit areas such as Jack London Square, Uptown or Broadway-Valdez during lunch or after work. It will also encourage residents of the circulator alignment to shop and dine in other neighborhoods along the corridor. Visitors will also be able to explore a variety of locations in Oakland easily, gaining exposure to more shopping and dining opportunities than they would otherwise. For example, visitors arriving in Jack London Square by ferry or Amtrak will be able to easily visit Uptown or Old Oakland as well.

By increasing pedestrian and commercial activity, the circulator will also support the regional competitiveness of the Broadway corridor as a destination for dining, nightlife and shopping. A uniquely-branded circulator project provides an opportunity to market the area as a unified shopping and entertainment district.

The appeal and convenience of the circulator for short trips applies not only to people who live or work nearby or who arrive on foot, bike or by transit, but also to those who arrive by car. Drivers will be able to park once and then use the circulator for trips along the alignment, saving the inconvenience and cost of parking and re-parking multiple times in an area where parking can be difficult to find. For instance, friends might meet at Bocanova for happy hour, attend a show at the Fox, and have dinner at Mua before returning to their car. By reducing the need for parking, the circulator enables more efficient use of

¹⁰ Hook et. al., "More Development for Your Transit Dollar."

existing parking resources, which can also facilitate new development on sites that are currently used for surface parking.

3.2.2 Increased Visitation and Hotel Revenue

Urban circulators have been found to positively benefit the tourism and hospitality industry by providing an amenity for conventioners, business travelers and other visitors. In Tampa, Florida, 60 percent of streetcar riders are reportedly visitors who use it to access the Florida Aquarium, the Convention Center, waterfront parks and other popular destinations. In Oakland, a circulator will allow downtown visitors and hotel guests to more easily explore a variety of locations along the route, thus encouraging them spend more time and money in Oakland during their stay. Convenient access to more activities, entertainment and restaurants might also make staying in Oakland more attractive for travelers who would otherwise stay at a hotel in San Francisco. As discussed in the existing conditions section, nearly 40 percent of Oakland’s hotel rooms (excluding economy hotels) are located within three blocks of the Jack London Square to 27th Street alignment.

3.2.3 New Development and Increased Property Values

Circulators can play an important role in attracting new development. Improved transit access increases the value of a location by making it a more desirable place to live or do business. Public and private investment in a high-quality transit system signals to developers that others have made a strong commitment to the neighborhood. Additionally, frequent and reliable transit service can make possible more efficient use of parking facilities or in some cases reduced on-site parking needs for development projects; these efficiencies can have a significant impact on a developer’s bottom line and free up additional space for other (non-parking) uses. For all of these reasons, a circulator can help to accelerate the timing of new development or rehabilitation of existing buildings and increase development activity. The permanence of rail investments is generally believed to have a greater impact on development than bus service. This sentiment was echoed by developers interviewed for this report, however it was also noted that an enhanced bus alternative could also help to make the area more attractive for investment.

As described later in this report, a significant amount of reinvestment and development opportunity exists along all three of the potential Broadway Circulator alignments. It has taken some time for the market to recover from the recent recession, and until recently most types of residential and commercial development were not financially feasible to build.¹¹ A new transit investment could help to accelerate market momentum and enhance the viability of planned development projects. A circulator could also help to shift the market to help implement the visions expressed in the Lake Merritt Station Area Plan and the Broadway Valdez Specific Plan. The Broadway Valdez area in particular can benefit from a “last mile” connection to BART, as well as improved linkages to activity in Uptown, Downtown and Jack London Square (as well as Rockridge or Temescal, depending on the route). This neighborhood has a

¹¹ AECOM, “Downtown Oakland Development Feasibility Study,” prepared for the City of Oakland and the Metropolitan Transportation Commission, November 2013.

considerable amount of development potential and is envisioned as transitioning to become a more vibrant mixed-use neighborhood.

Increased demand for residential and commercial space will lead to higher property values for existing development as well. Property owners will share in the benefits of retail sales growth, as they will be able to obtain higher rents from commercial tenants. Similarly, the convenience and cachet associated with the streetcar or enhanced bus will also translate into higher sales prices or rents for residential units.

3.3 Methodology Overview

This section provides an overview of the key aspects of Strategic Economics' methodology for quantifying the economic benefits of the Broadway Circulator alternatives. Details related to specific types of economic benefits are discussed in later sections of this report.

As described previously, the analysis considers the impact of streetcar and enhanced bus alternatives for three potential alignments: Jack London Square to 27th Street, Jack London Square to MacArthur BART, and Jack London Square to Rockridge BART. To allow for direct comparisons, the analysis assumes that the circulator opens in 2020 in all scenarios analyzed. In reality, it is possible that an enhanced bus could be delivered in a faster time frame than a streetcar project.

Strategic Economics employed a “dynamic” model that projects new development, property value appreciation, retail spending and hotel revenue within the study area for each year from 2014 to 2040. The model is dynamic because it captures changes in the economic benefits over time, contrasted with a “static” model that would only present a snapshot of economic benefits at one future point in time. A dynamic model allows for a more nuanced analysis of the cumulative effects of the circulator over time. After the opening of the circulator, some economic benefits, such as increased retail sales, will be realized immediately, as increased circulation leads to greater spending at local businesses. Other economic benefits, such as increases in total property value (and resulting tax receipts), will accrue more incrementally, as new businesses and development are absorbed into the study area. As more residents and employees locate in the study area, they will also contribute to additional retail sales.

As mentioned in the introduction, the analysis estimates future economic activity along each alignment under a baseline scenario with no new transit, a streetcar scenario, and an enhanced bus scenario. Due to uncertainty surrounding future funding for the B shuttle, the baseline projections assumes that the service no longer exists. It is also important to note that these types of impacts cannot be projected with great precision; the results are intended to reflect a reasonable estimate of the scale of expected impacts for each transit option and alignment.

4.0 Existing Conditions

This section provides background information on existing development patterns, types of retail sales, hotel revenue, and opportunity sites in the streetcar/enhanced bus alignment study areas. These existing conditions form the base of value and activity that will be enhanced through improved connectivity, and they therefore influence the type and scale of economic benefits generated in by the streetcar or enhanced bus in the various transit options studied.

4.1 Development Patterns

Following is a description of each of the three route alignment options studied, noting major destinations and general land use characteristics of each study area. The alignment options are shown in the maps in Figure 8 through Figure 10.

4.1.1 Jack London Square to 27th Street Route

The route alignment from Jack London Square to 27th Street was chosen to represent a possible first phase of the new transit's construction and operations, with a likely final terminus farther north.

Jack London Square is a regional destination for retail, entertainment, and dining. This once largely industrial area is experiencing an ongoing transformation into a mixed-use neighborhood that includes newer residential buildings and office space, as well as pre-existing industrial operations such as wholesale produce sellers. Jack London Square also offers access to San Francisco and Alameda via the Jack London Square Ferry Terminal, and access to Amtrak's inter-regional passenger rail service.

The streetcar or enhanced bus would help bridge a longstanding connectivity gap between Jack London Square and Downtown Oakland. The I-880 overpass and 6th Street form a block-long barrier that discourages pedestrian circulation. This barrier is further exacerbated by a lack of pedestrian-oriented destinations on adjacent blocks.

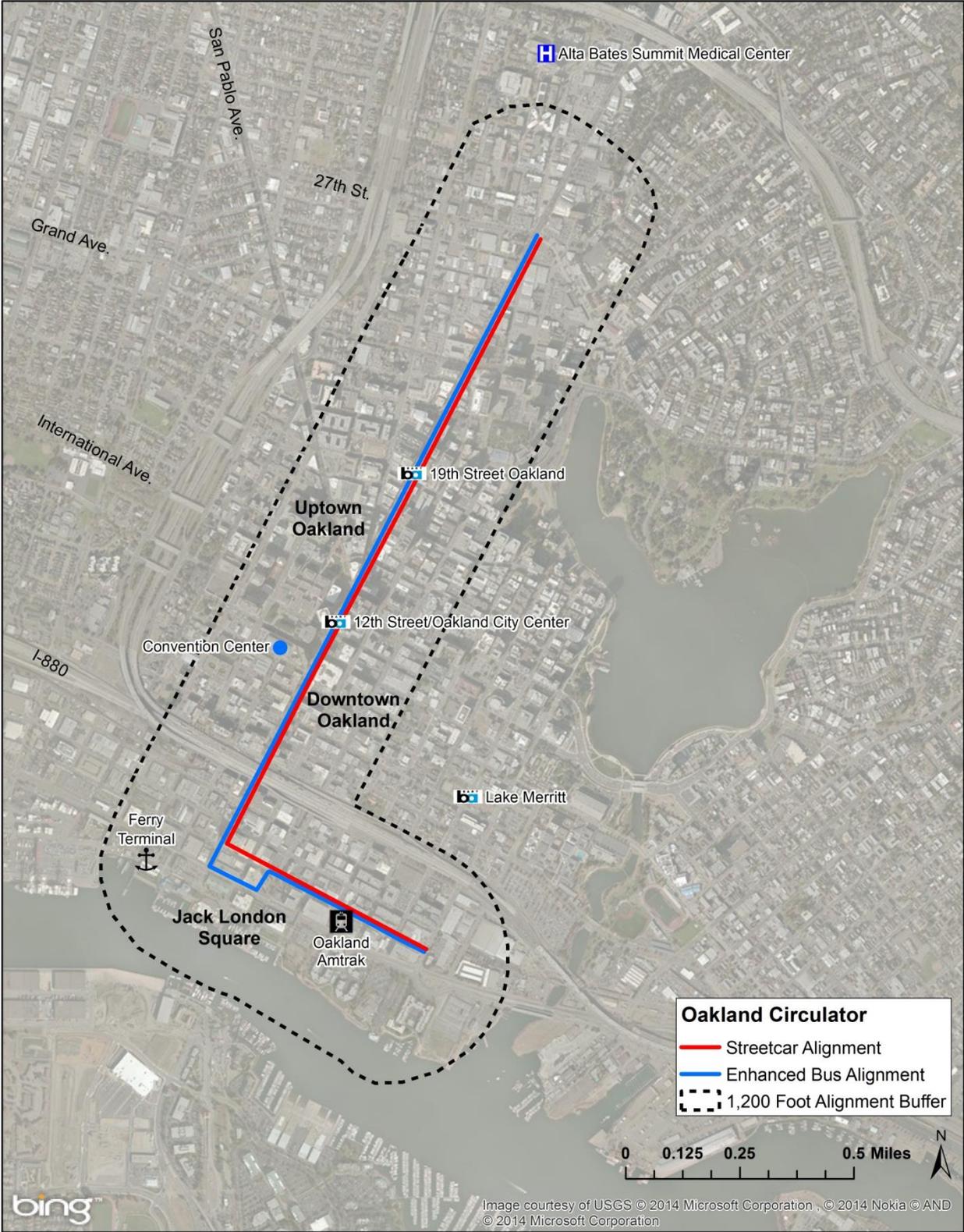
Downtown Oakland is a major regional office destination, civic center, and entertainment destination, and generates much of the economic activity that a streetcar or enhanced bus would leverage. To the southwest, the Old Oakland area features a concentration of restaurants and nightlife. To the southeast, the Chinatown neighborhood is a vibrant neighborhood and a regional destination for shopping and dining. The center of Downtown is the primary central business district of the East Bay, with a concentration of class A, B, and C office space and the city's Civic Center. Regional transit access is a key asset of Downtown Oakland, provided via the 12th St. Oakland City Center BART station, the 19th St. Oakland BART station, and numerous AC Transit bus lines that converge in the area. Business representatives interviewed for this study typically cited this regional transit access as a major factor in locating in Downtown Oakland, along with lower rents compared to San Francisco and other major office nodes in the region and a desire to be part of the "hip" environment in Oakland.

Moving north, Downtown transitions to the Uptown neighborhood in which the Broadway Circulator streetcar or enhanced bus would connect to a concentration of new and planned residential and office developments (including The Hive and renovation of the historic Sears building). A concentration of bars,

restaurants, and coffee shops in this area has emerged, creating a vibrant new nightlife district anchored by the Fox Theater and Paramount Theatre to the south.

The Jack London Square to 27th Street option terminates in the Broadway-Valdez Specific Plan area, which stretches from Grand Avenue to I-580. This area includes numerous auto dealerships and service centers, as well as the Downtown Oakland YMCA, several churches, restaurants and other retail. The plan envisions development of a mixed-use urban neighborhood that includes a greater amount of destination and local-serving retail, while at the same time retaining existing automobile dealerships.

Figure 8: Jack London Square to 27th Street Route Alignment and 1,200 Foot Buffer Study Area



Sources: City of Oakland, 2014; Strategic Economics, 2014.

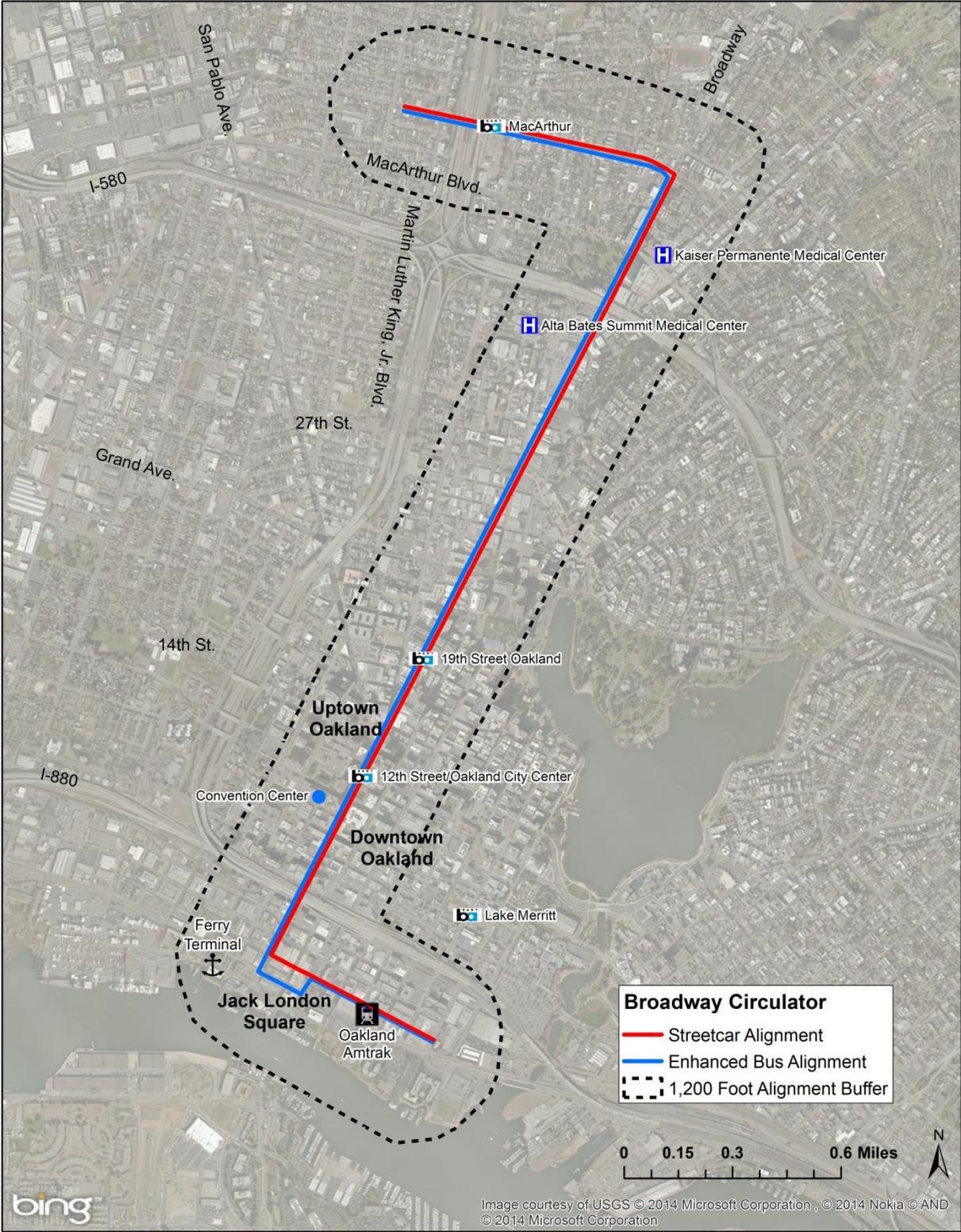
4.1.2 Jack London Square to MacArthur BART Route Alignment

The Jack London Square to MacArthur BART alignment was analyzed to compare the potential benefits of adding a streetcar or enhanced bus. This alignment includes all of the same subareas described in the alignment terminating at 27th Street, but also includes Broadway to 40th Street and 40th Street to the MacArthur BART station.

The additional Broadway segment in the MacArthur BART alignment primarily features automobile-related uses and medical uses, with mixed residential properties on nearby blocks. The southern portion of the segment is a continuation of auto row, and primarily features automobile dealerships, repair shops, and parts supply stores. Mosswood Park is located immediately northwest of I-580. Alta Bates Summit Medical Center and medical offices are located south of I-580, while Kaiser Oakland Medical Center is located north of I-580. Together, these hospitals and medical office uses comprise a major destination for workers, visitors, and patients. The hospitals benefit from proximity to MacArthur BART, and run a variety of shuttle services to and from the station. Both hospitals have recently completed major new construction projects.

The 40th Street segment to the MacArthur BART station includes a mix of two- to four-story residential buildings and relatively low-density commercial uses. The MacArthur BART Station development is currently under construction on the former BART parking lot. When completed, the project will include a multi-level parking garage on MacArthur Boulevard, 624 apartments, and retail and community space. The 40th Street corridor and surrounding neighborhood is also seeing an influx of investment in the form of renovated buildings and new local retailers and restaurants.

Figure 9: Jack London Square to MacArthur BART Route Alignment and 1,200 Foot Buffer Study Area



Sources: City of Oakland, 2014; Strategic Economics, 2014.

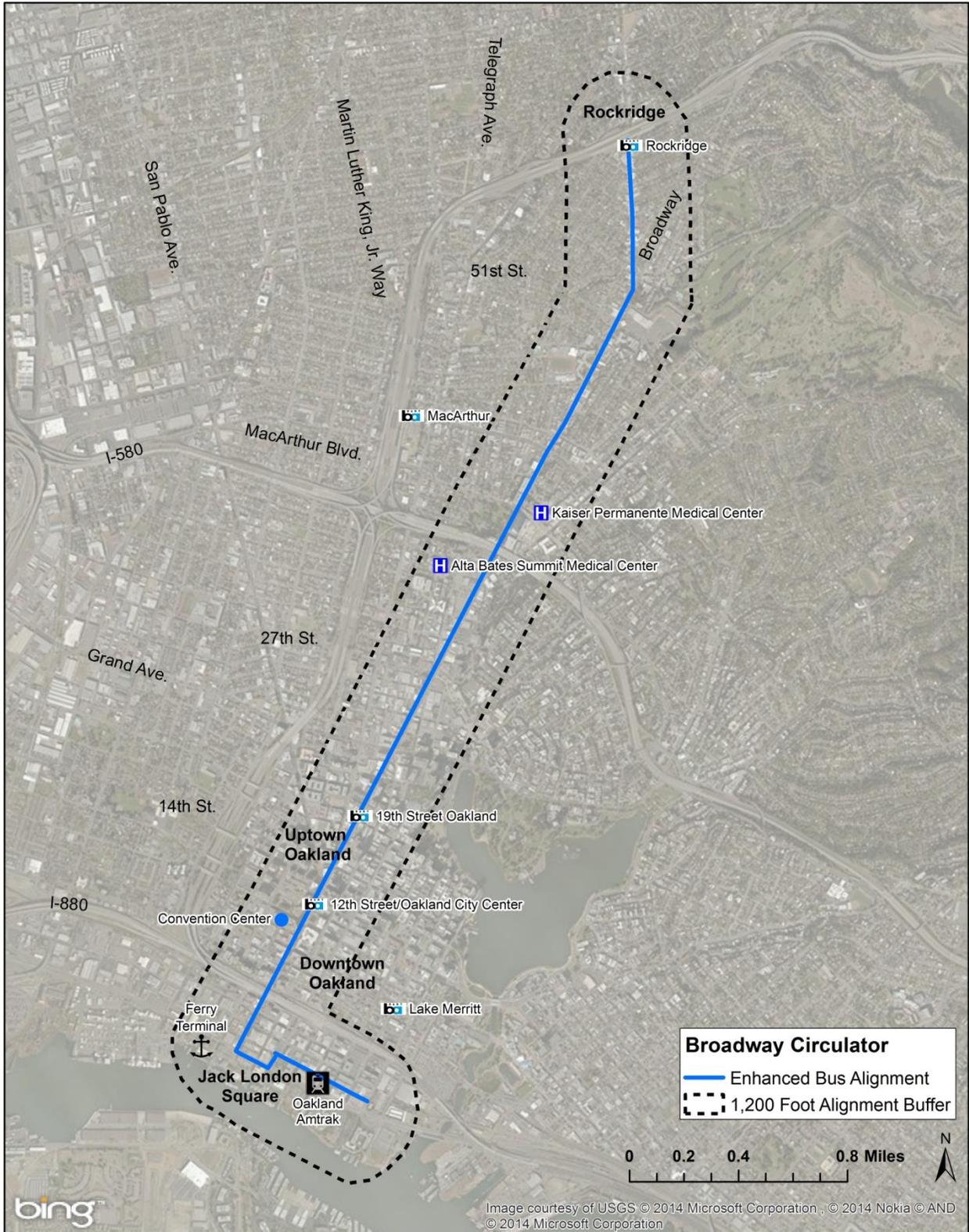
4.1.3 Jack London Square to Rockridge BART Route Alignment

The alignment running from Jack London Square to MacArthur BART was only evaluated as an enhanced bus alternative. College Avenue was determined to be too narrow to accommodate streetcar operations. This alignment duplicates the route to MacArthur BART, but instead of turning onto 40th Street continues to travel north on Broadway and College Avenue.

The Broadway portion of the route north of 40th Street contains a mix of commercial buildings, automobile dealerships, and Oakland Technical High School. The route passes the Rockridge Shopping Center at Pleasant Valley Avenue, just before turning northwest onto College Avenue. Rockridge Shopping Center is currently being redeveloped and will include a Safeway grocery store, office, retail, and restaurant uses.

The Rockridge BART alignment terminates in the Rockridge shopping district. This district features a major concentration of high-end retail, restaurants, and bars surrounded by high-value single-family and multi-family homes. This area generally has very high property values, but few development opportunity sites. The Safeway at College Avenue and Claremont Avenue is currently being redeveloped and significantly expanded.

Figure 10: Jack London Square to Rockridge BART Route Alignment and 1,200 Buffer Study Area



Sources: City of Oakland, 2014; Strategic Economics, 2014.

4.1.4 Population and Employment

The tables in Figure 11 through Figure 12 show population, housing, and employment trends in each of the alignment study areas. The vast majority of employment is encompassed within the Jack London Square to 27th Street area. However, extending the corridor to either MacArthur or Rockridge BART would nearly double the number of households served by the circulator. The route terminating at 27th Street has experienced rapid growth in housing and population since 2000 due to new development in Jack London Square, Downtown, and Uptown, while other areas have grown more slowly.

Figure 11: Population and Housing Growth by Alignment Study Area

	2000	2008-2012 Estimate	Percent Growth
JLS to 27th Street			
Population	10,063	11,960	19%
Housing Units	5,751	7,637	33%
JLS to MacArthur BART			
Population	19,159	21,025	10%
Housing Units	10,561	12,748	21%
JLS to Rockridge BART			
Population	20,620	22,712	10%
Housing Units	11,450	13,695	20%

Source: U.S. Census Decennial Census 2000 and American Community Survey 2008-2012 estimates; Strategic Economics, 2014.

Figure 12: Employment by Alignment Study Area

	2011
JLS to 27th Street	51,473
JLS to MacArthur BART	65,496
JLS to Rockridge BART	67,962

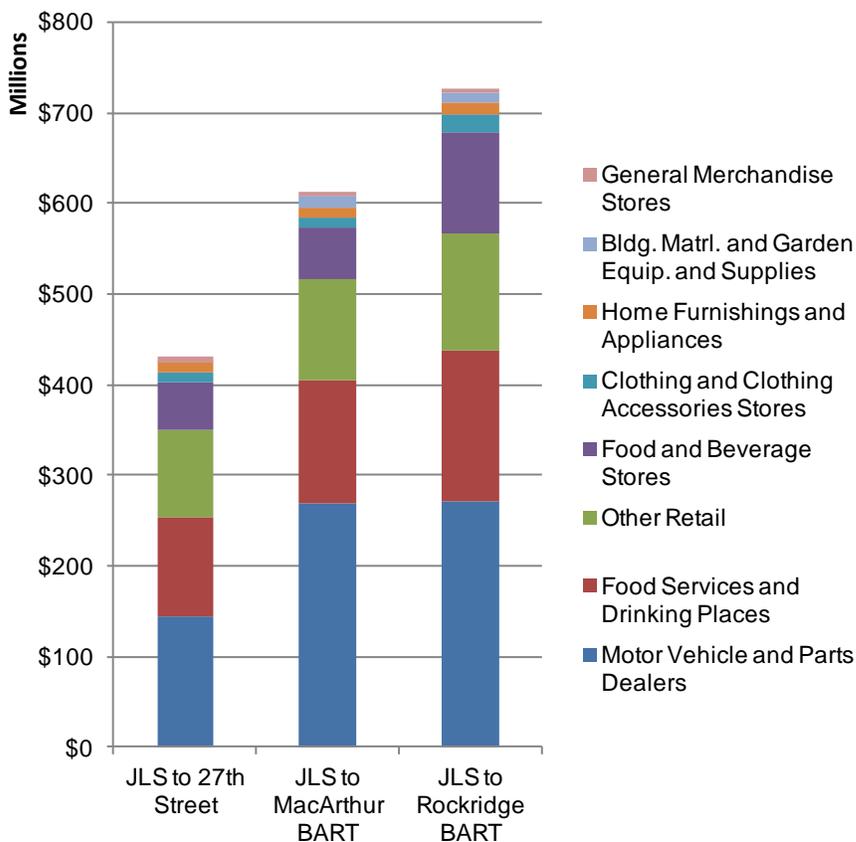
Source: U.S. Census Longitudinal Employer-Household Dynamics, 2014; Strategic Economics, 2014.

4.2 Retail and Restaurant Sales

The three circulator study areas pass through a wide variety of retail and restaurant districts. The Jack London Square to 27th Street segment is dominated by dining, drinking, and entertainment uses. Farther north, auto dealerships drive large sales volumes. Meanwhile, the Rockridge area is a major shopping destination, offering a diverse mix of food sales, dining and drinking establishments, and other retailers. Figure 13 shows the estimated volume and composition of sales for each alignment. Strategic Economics estimated these sales using sales tax receipt data (see the Methodology section for a detailed explanation

of the methodology used). As shown, motor vehicles parts and sales constitute a major portion of sales, particularly in the alignment options that extend to MacArthur BART and Rockridge BART.

Figure 13: Estimated 2013 Retail Sales by Category and Alignment Study Area (2014 dollars)



Source: City of Oakland, 2014; Strategic Economics, 2014.

Retail vacancy rates are currently relatively low in the corridor, ranging from 3 to 7 percent.¹² Data from the City of Oakland shows that retail sales in all study areas have steadily increased since 2011. As of 2012, the study areas terminating at 27th Street, MacArthur BART, and Rockridge BART comprised 12, 14, and 19 percent of *non-automotive* citywide retail sales, respectively.

4.3 Hotel Performance

The combined alignment study areas include a total of 1,382 hotel rooms, of which 1,115 are mid-scale or better quality. All of these mid-scale or better hotels are located in Jack London Square or Downtown. Downtown hotels such as the Marriott or Washington Inn provide easy access to the Oakland Convention Center, Downtown offices, and to the region via BART or freeway. Jack London Square hotels include the Waterfront Hotel and the Inn at Jack London Square.

¹² Based on data from CoStar.

Strategic Economics focused its hotel demand analysis on the mid-scale and better market segment since it is unlikely a new economy hotel would be constructed in the corridor. Oakland is currently experiencing strong hotel demand, with mid-scale and better hotels in Downtown and Jack London Square experiencing average occupancy rates of 71 percent.¹³ Occupancy rates of 65 to 70 percent typically signal that the market is approaching a point where additional hotel construction is likely.

Oakland levies transient occupancy tax on hotel stays at a rate of 14 percent. Hotels in Downtown and Jack London Square generated \$5.4 million in transient occupancy tax revenue in 2012; revenues have been steadily increasing since at least 2009.

4.4 Development and Redevelopment Opportunities

To understand the scale of development (or redevelopment) potential in the three circulator study areas, Strategic Economics worked with Oakland planning and economic development staff to identify properties that may redevelop over time. Strategic Economics analyzed Alameda County assessor data to identify vacant sites (with no existing structures) and “underutilized” sites. Underutilized sites are properties with an improvement-to-land value ratio less than one, according to assessor data.¹⁴

The development opportunity site list was further refined to exclude single family homes and publicly-owned parcels, as well as sites deemed unlikely to redevelop based on input from City staff.¹⁵

As shown in Figure 14, significant development opportunity sites exist in all route alignment study areas.

Figure 14: Vacant and Underutilized Properties by Alignment Study Area

	Parcels	Acres
JLS to 27th Street	586	309
JLS to MacArthur BART	881	362
JLS to Rockridge BART	965	390

Source: Alameda County Assessor, 2014; City of Oakland, 2014; Strategic Economics, 2014.

¹³ STR Global.

¹⁴ The land value and improvement value are two components that determine a parcel’s assessed value. The “improvement to land value ratio” is a simple measure commonly used to analyze the economic utility of a parcel. If the ratio is greater than 1, the improvements on the site have more value than the land, whereas if the ratio is less than 1, the land is more valuable than the on-site improvements.

¹⁵ Publicly-owned parcels have no assessed value, yet some may be potential development opportunity sites. The study areas include large amounts of publicly-owned land, including parks, civic buildings, former Redevelopment Agency properties, and Port of Oakland properties in Jack London Square. Strategic Economics found that future development is unlikely to exceed development capacity on privately-owned sites alone, and therefore did not attempt to quantify additional development capacity from publicly-owned sites.

5.0 Benefits to Property Owners

Strategic Economics quantified the potential benefit of a Broadway Circulator to property owners by modeling growth in property value between 2014 and 2040. Property value growth in each corridor study area was estimated under a “baseline” scenario without new transit, as well as scenarios with a streetcar or enhanced bus. This analysis incorporated assumptions about the average value of new development, as well as expected future property value growth. These assumptions are detailed in the Appendix.

5.1 Value of New Development

Strategic Economics estimated property value based on projected growth in the corridor study areas. Figure 15 shows projected development between 2014 and 2040 without transit improvements, with the streetcar, and with the enhanced bus. A detailed description of the methodology for estimating future growth projections is included in the Methodology section of this report.

Figure 15: Growth in Development, 2014 to 2040 (rounded)

	Growth without Transit Improvements	Growth with Streetcar	Growth with Enhanced Bus	Streetcar Benefit over Baseline Growth	Enhanced Bus Benefit over Baseline Growth
Jack London Square to 27th Street					
Residential Units	6,970	7,720	7,420	750	450
Office Square Feet	2,107,000	2,360,000	2,259,000	253,000	152,000
Retail Square Feet	396,000	463,000	431,000	67,000	35,000
Hotel Rooms	730	780	760	50	30
Jack London Square to MacArthur BART					
Residential Units	8,130	9,000	8,650	870	520
Office Square Feet	2,296,000	2,572,000	2,462,000	276,000	166,000
Retail Square Feet	560,000	654,000	609,000	94,000	49,000
Hotel Rooms	730	800	770	70	40
Jack London Square to Rockridge BART					
Residential Units	8,240	n/a	8,770	n/a	530
Office Square Feet	2,335,000	n/a	2,503,000	n/a	168,000
Retail Square Feet	671,000	n/a	750,000	n/a	79,000
Hotel Rooms	730	n/a	780	n/a	50

Source: Strategic Economics, 2014.

Figure 16 shows the projected total value from *new* development in the study areas between 2014 and 2040, with and without the streetcar and/or enhanced bus. The total benefit as of 2040 ranges from \$34 million for an enhanced bus connection along the Jack London Square to 27th Street corridor to \$66 million for a streetcar connection along the Jack London Square to MacArthur BART corridor.

Figure 16: Projected Value of New Development as of 2040 (2014 Dollars)

	Projected Value in 2040			Benefit over Baseline	
	Baseline	Streetcar	Enhanced Bus	Streetcar Benefit	Enhanced Bus Benefit
JLS to 27th Street	\$301,531,000	\$358,371,000	\$335,158,000	\$56,840,000	\$33,627,000
JLS to MacArthur BART	\$350,145,000	\$415,735,000	\$388,949,000	\$65,590,000	\$38,804,000
JLS to Rockridge BART	\$356,706,000	n/a	\$396,022,000	n/a	\$39,316,000

Source: Strategic Economics, 2014.

5.2 Value of Existing Properties

Figure 17 shows the current and projected value of existing properties in each of the corridor study areas. The 2014 value is based on the current assessed value of existing property adjusted by a factor to better reflect market value. In addition to ordinary market appreciation, all existing properties receive a one-time transit-driven value increase in the year before the streetcar or enhanced bus opens (2019).

Figure 17: Current and Projected Value of Existing Development in the Study Areas (2014 Dollars)

	Current Value (2014 dollars)	Projected Value in 2040			Benefit over Baseline	
		Baseline without Transit	Streetcar	Enhanced Bus	Streetcar Benefit	Enhanced Bus Benefit
JLS to 27th Street	\$4,473,472,000	\$6,367,124,000	\$6,649,620,000	\$6,536,621,000	\$282,496,000	\$169,497,000
JLS to MacArthur BART	\$5,654,447,000	\$8,354,906,000	\$8,730,870,000	\$8,580,484,000	\$375,964,000	\$225,578,000
JLS to Rockridge BART	\$5,819,488,000	\$9,162,884,000	\$9,487,847,000	\$9,415,881,000	\$324,963,000	\$252,997,000

Source: Strategic Economics, 2014.

5.3 Total Value Increase

Figure 18 shows the current and projected total property value in the study areas, including both existing and new development.

Figure 18: Current and Projected Total Property Value in the Study Area (2014 Dollars)

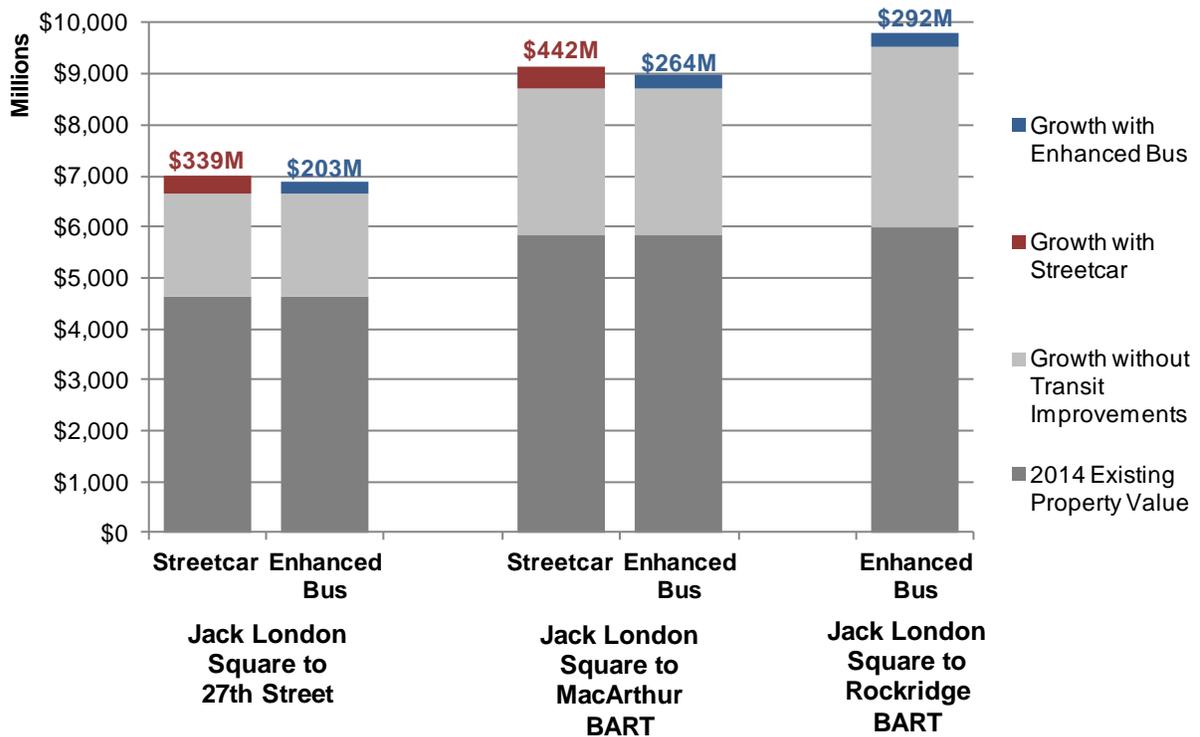
	Current Value (2014 dollars)	Projected Value in 2040			Benefit over Baseline	
		Baseline without Transit	Streetcar	Enhanced Bus	Streetcar Benefit	Enhanced Bus Benefit
JLS to 27th Street	\$4,623,773,000	\$6,668,654,000	\$7,007,991,000	\$6,871,779,000	\$339,337,000	\$203,125,000
JLS to MacArthur BART	\$5,829,457,000	\$8,705,050,000	\$9,146,605,000	\$8,969,433,000	\$441,555,000	\$264,383,000
JLS to Rockridge BART	\$5,819,488,000	\$9,162,884,000	\$9,487,847,000	\$9,415,881,000	\$324,963,000	\$252,997,000

Source: Strategic Economics, 2014.

Figure 19 shows the current and projected property value for all study areas, highlighting the projected amount of streetcar and enhanced bus benefit. As shown, the benefit driven by the streetcar and enhanced bus is relatively small compared to total expected baseline growth. Despite this, the streetcar is likely to

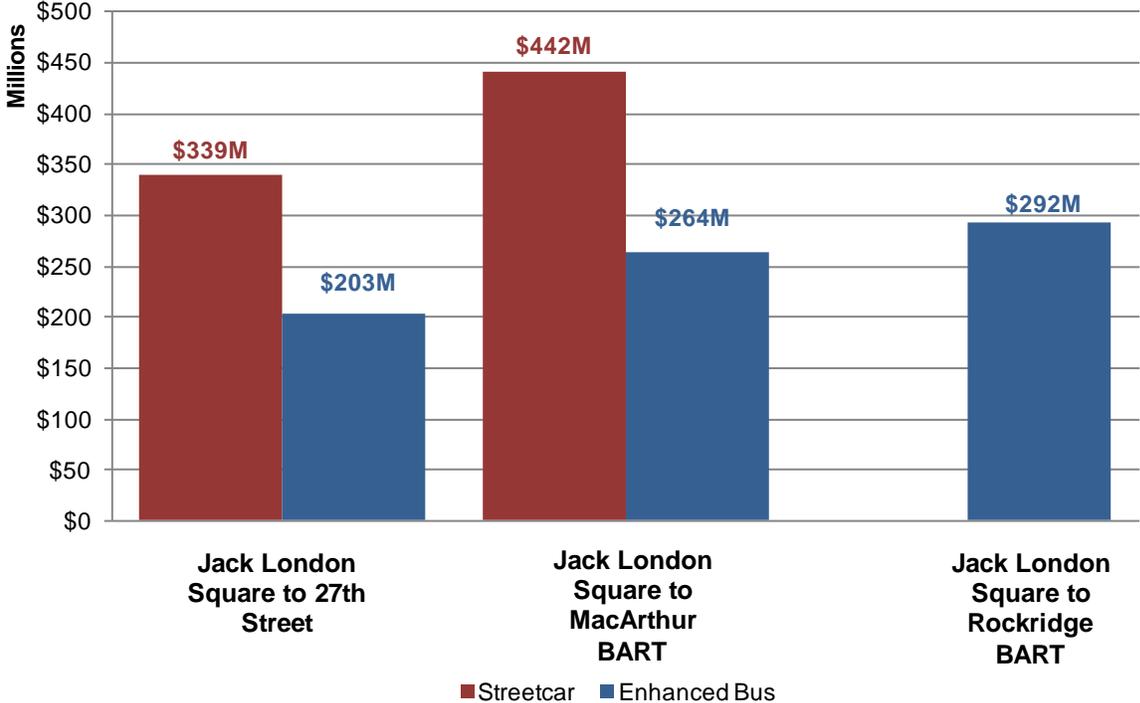
generate between \$339 million and \$442 million of additional property value, while the enhanced bus may generate between \$203 million and \$292 million of additional property value.

Figure 19: Current and Projected Property Value in Study Areas (2014 dollars)



Source: Strategic Economics, 2014.

Figure 20: Transit-Driven Property Value Benefit above Baseline Growth, 2040 (2014 Dollars)



Source: Strategic Economics, 2014.

6.0 Benefits to Business Owners

This section describes benefits for business owners, including increased spending at retailers, restaurants, and hotels.

6.1 Retail and Restaurant Sales

The new transit investment is expected to increase the likelihood that existing residents, workers, visitors and tourists will visit stores and restaurants that they can easily access by transit. New residents, workers and other visitors will also contribute to increased retail and restaurant sales. To quantify the benefit of the streetcar or enhanced bus to local businesses, Strategic Economics projected annual spending in the study area from 2014 to 2040, with and without the streetcar or enhanced bus. The analysis included all retail spending, but not business-to-business spending.

Spending was estimated separately for the following categories:

- Existing and new residents in the alignment study areas;
- Existing and new workers in the alignment study areas;
- Existing and new visitors to the alignment study areas, including business travelers and tourists; and
- Other residents of Oakland and other parts of the region.

Details regarding the methodology are presented in the Appendix.

6.1.1 Total Retail and Restaurant Sales Increase

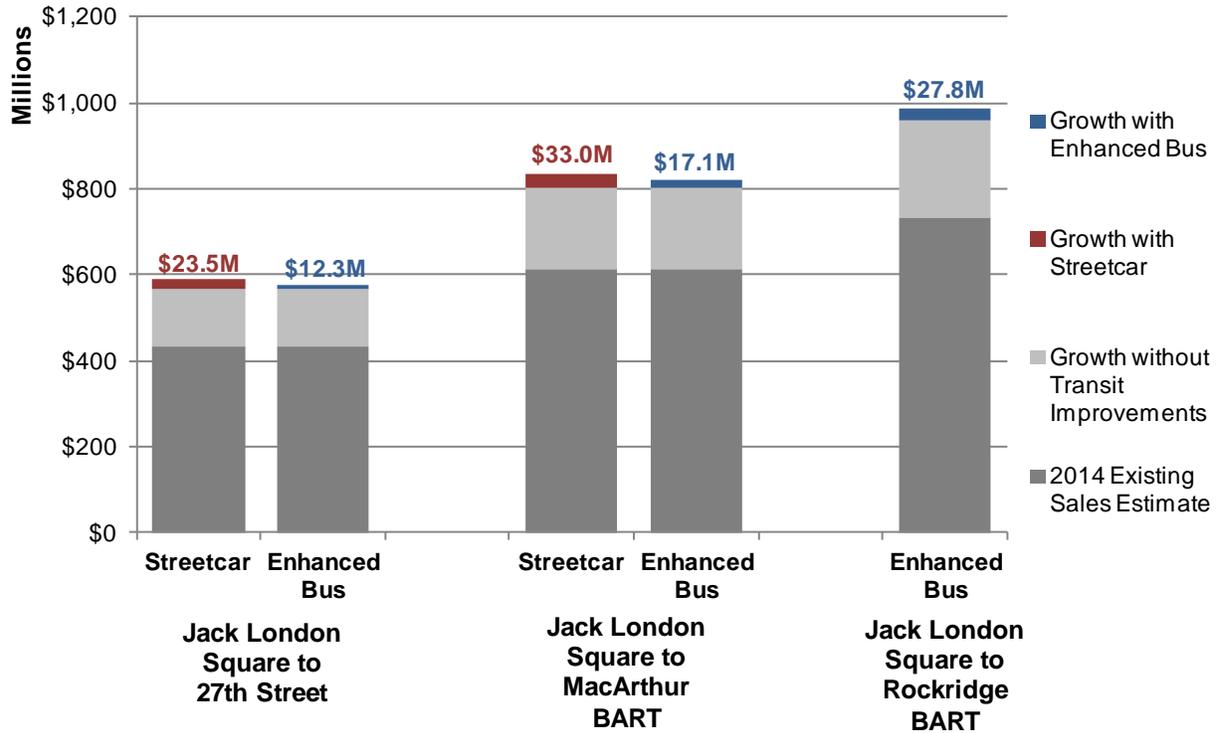
Figure 21 summarizes the retail sales projections for the study area, including current annual retail sales for 2014 and projected new annual retail sales as of 2040. The benefit in addition to the baseline sales growth is shown in the two right columns. Projected sales and benefit are also depicted graphically in Figure 22. The overall retail benefit is higher in the longer corridor options due to the inclusion of additional sales generators and the added value created by linking additional destinations.

Figure 21: Projected Annual Retail Sales in the Route Alignment Study Areas (2014 Dollars)

	Current Estimated Annual Sales (2014)	Projected 2040 Sales			Benefit over Baseline	
		Baseline without Transit	Streetcar	Enhanced Bus	Streetcar	Enhanced Bus
JLS to 27th Street	\$430,769,000	\$564,811,000	\$588,271,000	\$577,115,000	\$23,460,000	\$12,304,000
JLS to MacArthur BART	\$614,331,000	\$803,843,000	\$836,854,000	\$820,963,000	\$33,011,000	\$17,120,000
JLS to Rockridge BART	\$730,695,000	\$957,556,000	\$1,009,956,000	\$985,330,000	\$52,400,000	\$27,774,000

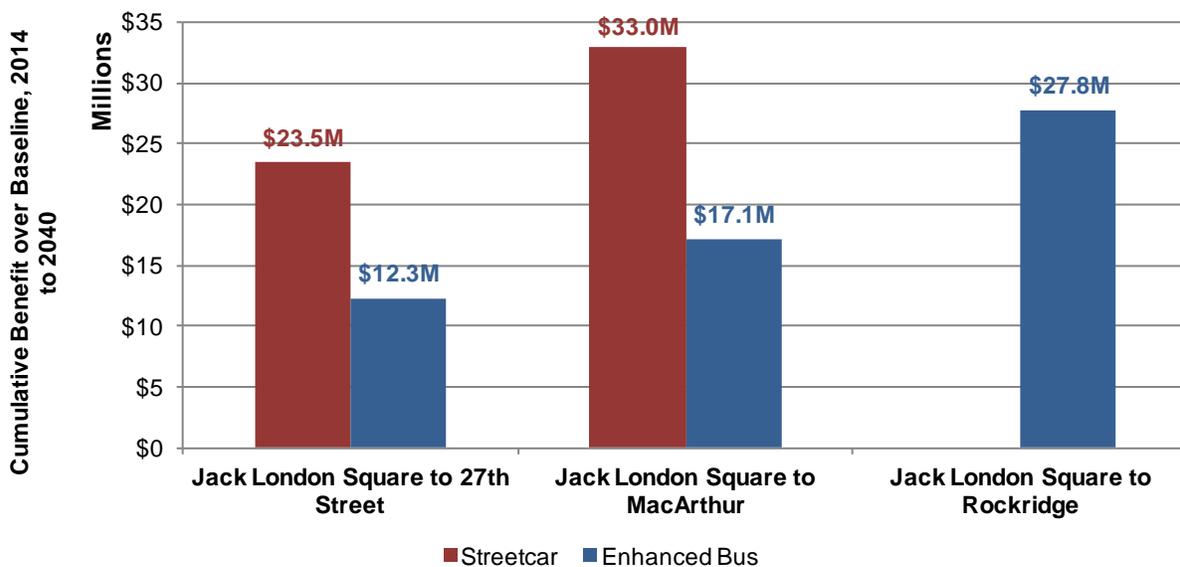
Source: Strategic Economics, 2014.

Figure 22: Projected Annual Retail Sales, 2014-2040 (2014 Dollars)



Source: Strategic Economics, 2014.

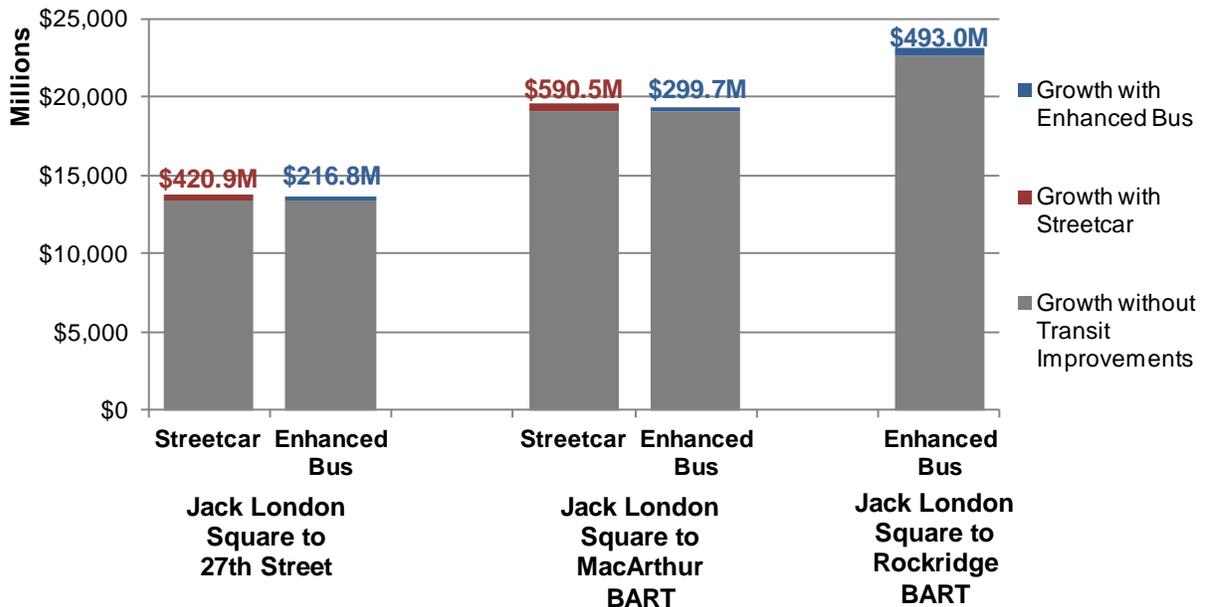
Figure 23: Annual Streetcar and Enhanced Bus Benefit to Retail Sales in the Alignment Study Areas, as of 2040 (2014 dollars)



Source: Strategic Economics, 2014.

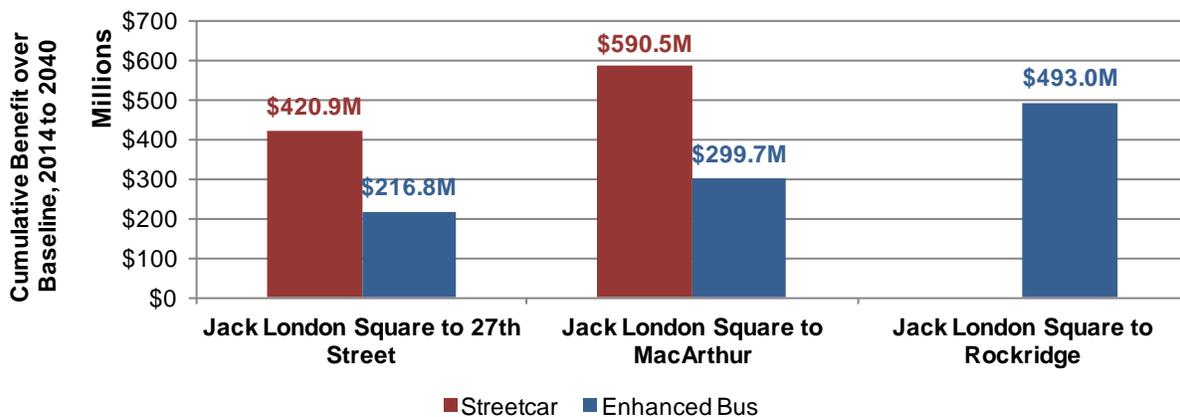
Figure 24 and Figure 25 illustrate the streetcar and enhanced bus benefits in cumulative terms, adding up the transit-related components of annual retail sales in each year between 2014 and 2040.

Figure 24: Cumulative Retail Sales in the Alignment Study Areas, 2014-2040, including Growth without Transit Improvements (2014 dollars)



Source: Strategic Economics, 2014.

Figure 25: Cumulative Streetcar and Enhanced Bus Benefit to Retail Sales in the Alignment Study Areas, 2014-2040 (2014 Dollars)



Source: Strategic Economics, 2014.

6.2 Hotel Revenue

As discussed earlier in this report, urban circulators have been found to positively benefit the tourism and hospitality industry. The Broadway Circulator will make it easier for tourists and convention and business

visitors to explore and enjoy dining, entertainment and shopping within the corridor. The more convenient access is expected to encourage visitors to stay an extra night when visiting Oakland, or to stay in Oakland when they might otherwise stay elsewhere. The convenience and accessibility that hotels along the streetcar alignment will be able to offer their customers is also expected to have an impact on room rates. This translates into increased demand for hotel rooms and the potential for higher room rates, thus increasing hotel revenues for study area hotels and stimulating additional hotel development.

6.2.1 Hotel Demand

A hotel market generally approaches a shortfall of supply when overall occupancy rates reach about 70 percent. The occupancy rate for midscale or better hotels in downtown Oakland and the Jack London Square area has been above 70 percent since 2012 and was over 75 percent for the period from January through July of 2014.¹⁶ That occupancy rate is an indicator of enough hotel demand to support the addition of new hotel rooms to the market. Therefore Strategic Economics assumed that additional hotel demand within the study area would result in new hotel rooms.

To quantify the benefit of the streetcar or enhanced bus to hotels, Strategic Economics used market data on the study area’s current share of the regional hotel market and estimates of potential capture rates of future demand to project annual demand for hotel rooms from 2014 to 2040, with and without a new circulator. Because a streetcar or enhanced bus would contribute to increased competitiveness of the study area as a destination, the overall demand for hotel rooms is expected to increase starting in 2020, the year the streetcar opens.

Figure 26 summarizes the projected demand for hotel rooms by alignment and transit scenario. Under the baseline scenario, demand for an additional 730 hotel rooms is projected for the period from 2014 to 2040. Under the streetcar scenario, demand for a total of 780 to 800 hotel rooms is projected, for a benefit over the baseline of 50 to 70 rooms, depending on the alignment. Demand for a total of 760 to 780 hotel rooms, or a benefit of 30 to 50 rooms is projected under the enhanced bus, depending on the alignment.

Figure 26: Projected Hotel Rooms by Alignment and Transit Scenario

	Baseline without			Benefit Over Baseline	
	Transit	Streetcar	Enhanced Bus	Streetcar	Enhanced Bus
JLS to 27th Street	730	780	760	50	30
JLS to MacArthur BART	730	800	770	70	40
JLS to Rockridge BART	730	n/a	780	n/a	50

Sources: STR Global, 2014; Strategic Economics, 2013.

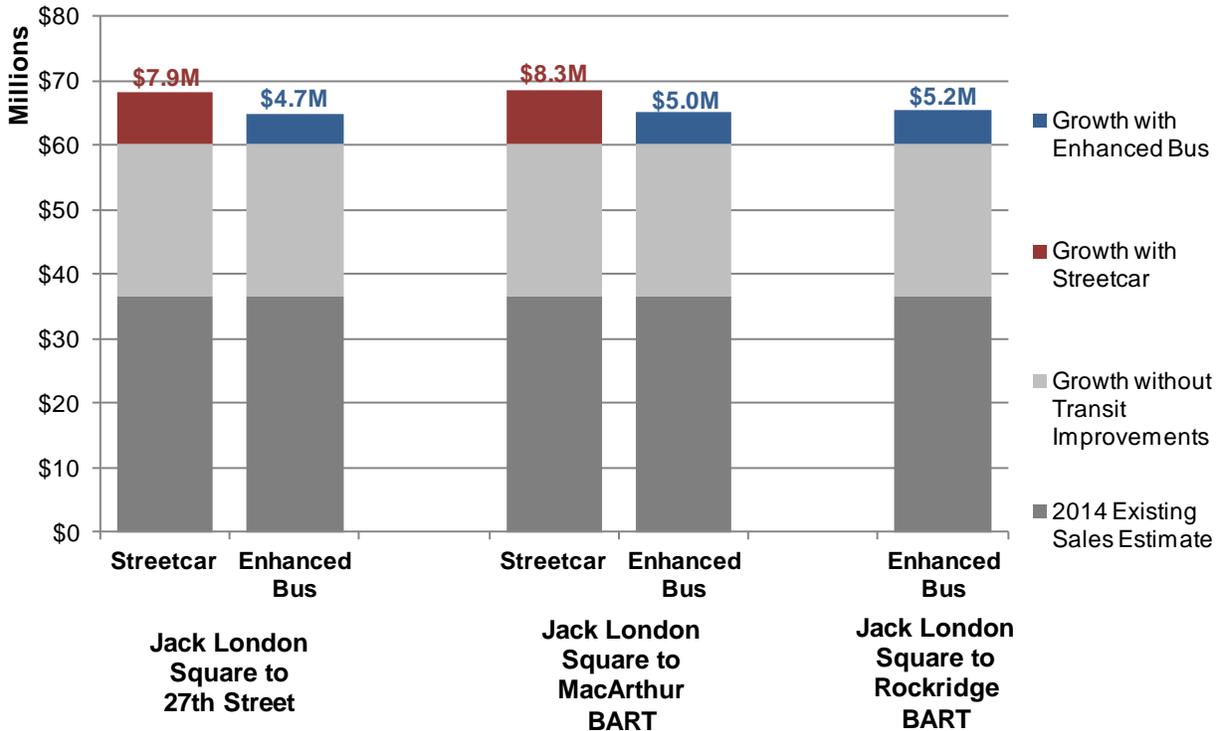
¹⁶ Oakland Hotel Selected Properties Trend Report, STR Global, 2014.

6.2.2 Results

To quantify the benefit of the streetcar and enhanced bus to local hotels, Strategic Economics used the projected demand for hotel rooms and assumptions on room rates to calculate annual study area hotel revenue from 2014 to 2040, with and without new transit. Figure 27 summarizes the hotel revenue projections by alignment and transit scenario, showing estimated annual hotel revenue for 2014 and projected new hotel revenue in 2040.

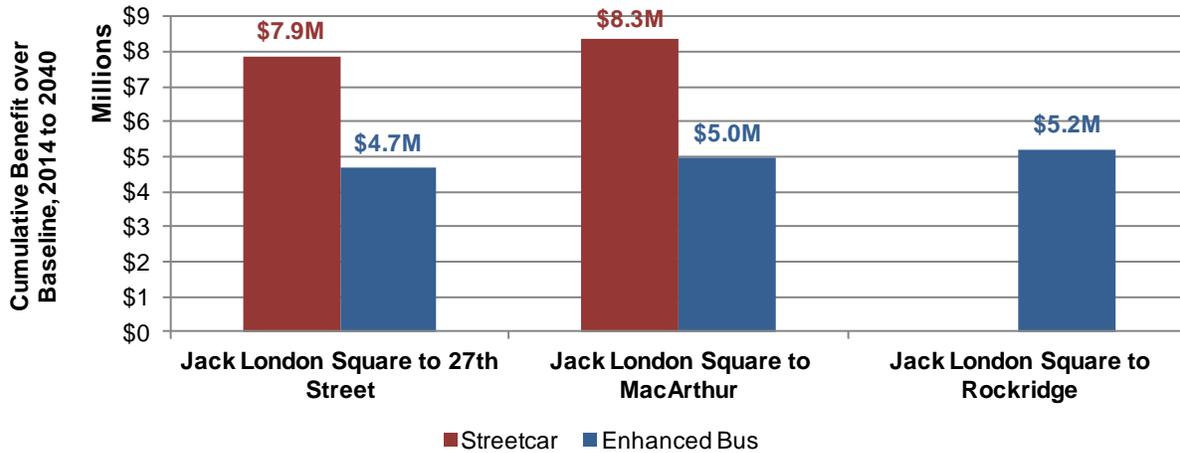
The projected benefit of a streetcar to hotel revenue ranges from \$7.9 to \$8.3 million annually in 2040, depending on the alignment. The projected benefit of an enhanced bus ranges from \$4.7 to \$5.2 million annually in 2040, depending on the alignment. Notably, the hotel benefits do not vary tremendously between corridor alternatives because most of the benefit to hotels is achieved by the connection made to the Jack London Square to 27th Street alignment.

Figure 27: Current and Projected Annual Hotel Revenue by Alignment and Transit Scenario, 2014-2040 (2014 dollars)



Sources: City of Oakland, 2014; Strategic Economics, 2014.

Figure 28: Annual Streetcar and Enhanced Bus Benefit to Hotel Revenue in the Alignment Study Areas, as of 2040 (2014 dollars)



Sources: City of Oakland, 2014; Strategic Economics, 2014.

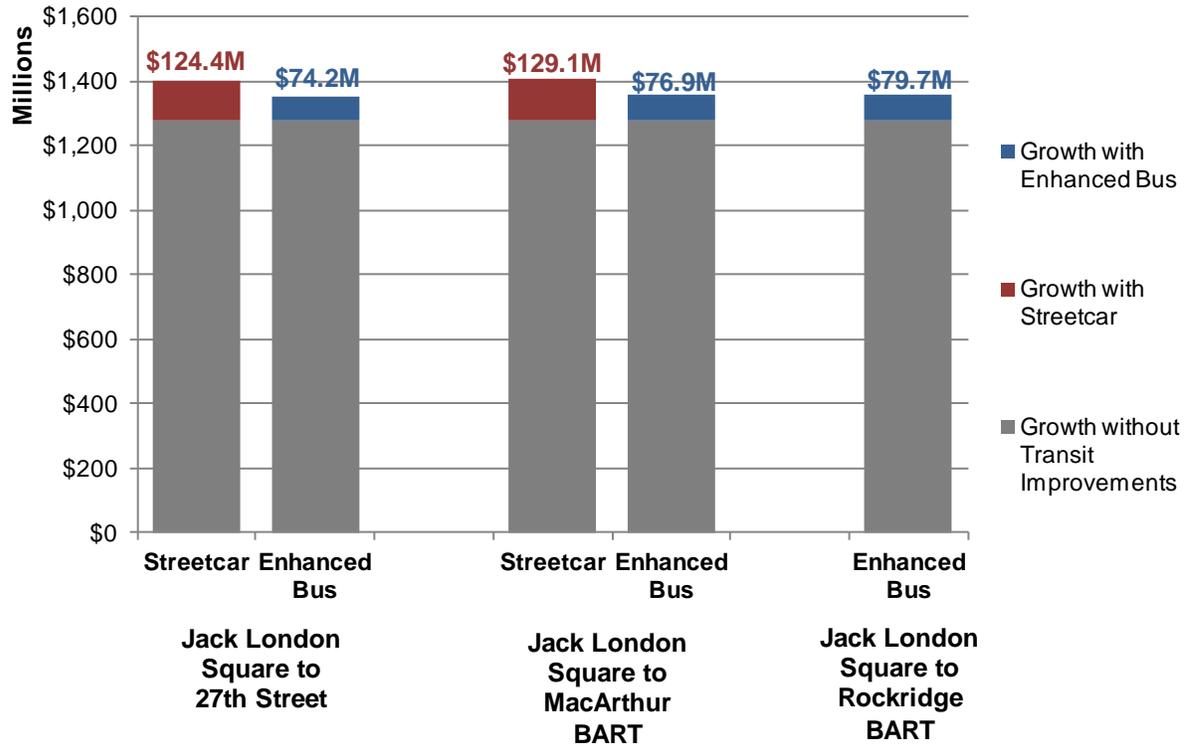
Figure 29 and Figure 30 show the projected impacts in cumulative terms. Under the streetcar scenario, the cumulative hotel revenue is projected to range from \$124.4 to \$129.1 million from 2014 to 2040, depending on the alignment. Under the enhanced bus scenario, cumulative hotel revenue is projected to range from \$74.2 to \$79.7 million from 2014 to 2040, depending on the alignment.

Figure 29: Cumulative Hotel Revenue from 2014 to 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit Total	Streetcar Total	Enhanced Bus Total	Benefit Over Baseline Total	
				Streetcar	Enhanced Bus
JLS to 27th Street	\$1,279,422,000	\$1,403,776,000	\$1,353,620,000	\$124,354,000	\$74,198,000
JLS to MacArthur BART	\$1,279,422,000	\$1,408,523,000	\$1,356,365,000	\$129,101,000	\$76,943,000
JLS to Rockridge BART	\$1,279,422,000	n/a	\$1,359,109,000	n/a	\$79,687,000

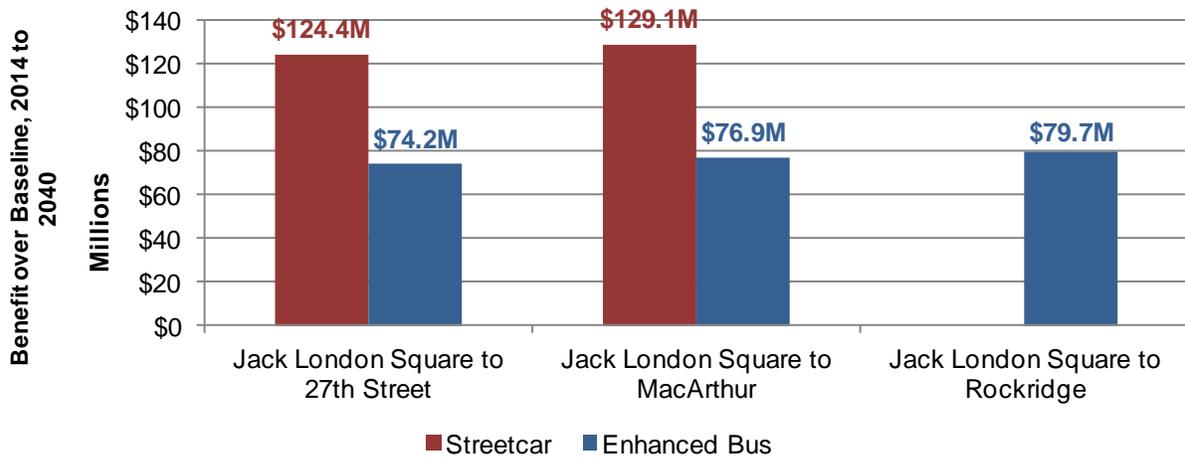
Sources: City of Oakland, 2014; Strategic Economics, 2014.

Figure 30: Cumulative Hotel Revenue from 2014 to 2040 by Alignment and Transit Scenario (2014 dollars)



Sources: City of Oakland, 2014; Strategic Economics, 2014.

Figure 31: Cumulative Streetcar and Enhanced Bus Benefit to Hotel Revenues in the Alignment Study Areas, 2014 to 2040 (2014 Dollars)



Sources: City of Oakland, 2014; Strategic Economics, 2014.

7.0 Streetcar Benefits to Local Government

The economic benefits described in the previous sections will also generate tax revenues for the City of Oakland. This section describes the potential tax benefits associated with the Broadway Circulator, including property tax, property transfer tax, sales tax, transient occupancy tax, and business tax revenue.

7.1 Property Tax Revenue

Increased property value along the Broadway Circulator alignment will translate into additional property tax revenue for local governments. Per Proposition 13, the base property tax rate is one percent of assessed property value. The tax revenue is distributed by the county auditor by tax rate area (TRA) among multiple local government entities, including the county, cities, public schools, community college districts, and special districts.

For areas that lie within a former redevelopment area, property tax revenues are distributed differently; the revenues are first used for existing obligations associated with the former redevelopment area, with the remaining (or “residual”) revenues being allocated among specific taxing entities as previously determined under agreements between the taxing entities and the state. The study areas corresponding to the Jack London Square to 27th Street and Jack London Square to MacArthur BART alignments are almost entirely within former redevelopment areas and the analysis assumes that all property tax revenues in those areas are allocated as described above. It is also important to note that the City Council passed a requirement that 25 percent of Oakland’s share of residual property tax revenues will be allocated to affordable housing beginning in fiscal year 2015-16, which is roughly equivalent to the proportion of redevelopment revenues Oakland was spending on affordable housing prior to its dissolution.

Strategic Economics projected annual property tax revenue that would be received by the City of Oakland for each year from 2014 to 2040. Property tax revenues do not grow at the same rate as property value because Proposition 13 limits the increase in assessed value of a property to 2 percent annually, unless a property is sold. The model assumes that residential properties will be sold, or “turn over,” on average every ten years and that commercial properties will turn over on average every 20 years.¹⁷ Future assessed values are reported in 2014 dollars using a discount rate of 2.5 percent.

For those areas outside of the former redevelopment areas, the City of Oakland receives 28 percent of the base one-percent property tax, which doesn’t include special assessments and special taxes.¹⁸ For those areas located within former redevelopment areas, it was necessary to estimate the proportion of future property tax revenues to be allocated to the city’s general fund. In the former redevelopment areas a significant portion of future property tax revenues have already been obligated for the purposes of redevelopment and will therefore be used to repay those obligations first before the residual amount in

¹⁷ The turnover rate is the percentage of property expected to sell each year. Actual turnover rates were not available, so the analysis used general assumptions based on industry standards and Strategic Economics’ past experience.

¹⁸ This share is based on data provided by the Alameda County Auditor-Controller Agency and reflects the required shift of property tax revenue to state educational revenue augmentation funds (ERAF).

distributed among taxing entities. Based on analysis of available information on the city’s recognized obligations payment schedule and the city’s residual share of revenues, Oakland’s share of the residual property tax revenue is estimated to be 11 percent of the one percent tax rate.

Figure 32 shows projected annual property tax revenues in 2040 by alignment and transit scenario, with the increased benefit due to the streetcar or enhanced bus listed in the two columns on the far right. In the streetcar scenarios, additional property tax revenue is projected to range from \$1.5 to \$1.8 million annually in 2040, depending on the alignment. Under the enhanced bus scenarios, additional property tax revenue is projected to range from \$890,000 to \$1.5 million annually in 2040, depending on the alignment.

Figure 32: Projected Annual Property Tax Revenue in 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit	Streetcar	Enhanced Bus	Benefit Over Baseline	
				Streetcar	Enhanced Bus
JLS to 27th Street	\$14,509,000	\$16,012,000	\$15,399,000	\$1,503,000	\$890,000
JLS to MacArthur BART	\$17,908,000	\$19,700,000	\$18,969,000	\$1,792,000	\$1,061,000
JLS to Rockridge BART	\$25,223,000	n/a	\$26,689,000	n/a	\$1,466,000

Sources: City of Oakland, 2014; Alameda County Auditor-Controller Agency, 2014; Strategic Economics, 2014.

The cumulative benefit to property tax revenue between 2014 and 2040 is shown in Figure 33. Under the streetcar scenario, the additional property tax revenue is projected to range from \$17.9 to \$21.7 million from 2014 to 2040, depending on the alignment. Under the enhanced bus scenario, cumulative property tax revenue is projected to range from \$10.6 to \$17.9 million from 2014 to 2040, depending on the alignment.

Figure 33: Cumulative Property Tax Revenue from 2014 to 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit Total	Streetcar	Enhanced Bus	Benefit Over Baseline Total	
				Streetcar	Enhanced Bus
JLS to 27th Street	\$246,139,000	\$264,086,000	\$256,769,000	\$17,947,000	\$10,630,000
JLS to MacArthur BART	\$306,018,000	\$327,718,000	\$318,864,000	\$21,700,000	\$12,846,000
JLS to Rockridge BART	\$421,627,000	n/a	\$439,492,000	n/a	\$17,865,000

Sources: City of Oakland, 2014; Alameda County Auditor-Controller Agency, 2014; Strategic Economics, 2014.

As noted previously, 25 percent of Oakland’s share of residual property tax revenues in former redevelopment areas will be allocated to affordable housing beginning in fiscal year 2015-16, meaning that about 25 percent of property tax revenues received by the City of Oakland for the JLS to 27th Street or JLS to MacArthur BART alignments would be required to be spent on affordable housing.

7.2 Property Transfer Tax Revenues

Similar to property tax revenue, the increased property value resulting from the new Broadway Circulator will translate into additional property transfer tax revenue for the city. In Oakland, property transfer taxes, which are due upon sale of a property, are assessed at 1.5 percent of the sales value of properties. Annual property transfer tax revenues were calculated by multiplying the assessed value by the average turnover rate (to estimate the value of property sold annually), and then by the transfer tax rate. As discussed in the previous section, the model assumes that residential properties will turn over on average every ten years and that commercial properties will turn over on average every 20 years.

Strategic Economics projected annual revenue from property transfer tax received by the City of Oakland for each year from 2014 to 2040. Figure 34 shows projected annual property transfer tax revenues in 2040 by alignment and transit scenario, with the benefits associated with a streetcar or enhanced bus listed in the two columns on the far right. With a streetcar, additional property transfer tax revenue is projected to range from \$2.9 to \$3.4 million annually by 2040, depending on the alignment. Under the enhanced bus scenarios, additional property transfer tax revenue is projected to range from \$1.7 to \$2.1 million annually in 2040, depending on the alignment.

Figure 34: Projected Annual Property Transfer Tax Revenue in 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit	Benefit Over Baseline		Streetcar	Enhanced Bus
		Streetcar	Enhanced Bus		
JLS to 27th Street	\$22,286,000	\$25,137,000	\$23,974,000	\$2,851,000	\$1,688,000
JLS to MacArthur BART	\$27,343,000	\$30,711,000	\$29,337,000	\$3,368,000	\$1,994,000
JLS to Rockridge BART	\$29,260,000	n/a	\$31,329,000	n/a	\$2,069,000

Sources: City of Oakland, 2014; Alameda County Clerk-Recorder's Office, 2014; Strategic Economics, 2014.

The cumulative increase in property transfer tax revenue between 2014 and 2040 is shown in Figure 35. With a streetcar, the total additional property transfer tax revenue is projected to range from \$36.2 to \$43.1 million from 2014 to 2040, depending on the alignment. With an enhanced bus, cumulative property tax revenue is projected to range from \$21.4 to \$26.7 million from 2014 to 2040, depending on the alignment.

Figure 35: Cumulative Property Transfer Tax Revenue from 2014 to 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit Total	Benefit Over Baseline Total		Streetcar	Enhanced Bus
		Streetcar	Enhanced Bus		
JLS to 27th Street	\$355,507,000	\$391,652,000	\$376,889,000	\$36,145,000	\$21,382,000
JLS to MacArthur BART	\$440,384,000	\$483,438,000	\$465,844,000	\$43,054,000	\$25,460,000
JLS to Rockridge BART	\$472,857,000	n/a	\$499,576,000	n/a	\$26,719,000

Sources: City of Oakland, 2014; Alameda County Alameda County Clerk-Recorder's Office, 2014; Strategic Economics, 2014.

7.3 Sales Tax Revenue

Under California’s Bradley Burns Uniform Local Sales and Use Tax Law, an amount equivalent to one percent of retail sales is allocated to the city in which the sale occurs.¹⁹ Increased spending in the study area will therefore translate into higher annual sales tax revenue for Oakland. Strategic Economics projected annual sales tax revenue that the city will receive from 2014 to 2040.

Figure 36 shows projected annual sales tax revenue for each transit scenario, with the incremental benefit resulting from a streetcar or enhanced bus listed in the two columns on the far right. These amounts are calculated by subtracting the baseline scenario from the streetcar and enhanced bus scenarios respectively. With a streetcar, additional sales tax revenue is projected to range from \$206,000 to \$286,000 annually by 2040, depending on the alignment. With an enhanced bus, additional sales tax revenue is projected to range from \$108,000 to \$243,000 annually in 2040, depending on the alignment.

Figure 36: Projected Annual Sales Tax Revenue in 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit	Benefit Over Baseline			
		Streetcar	Enhanced Bus		
JLS to 27th Street	\$5,123,000	\$5,329,000	\$5,231,000	\$206,000	\$108,000
JLS to MacArthur BART	\$7,400,000	\$7,686,000	\$7,549,000	\$286,000	\$149,000
JLS to Rockridge BART	\$8,518,000	n/a	\$8,761,000	n/a	\$243,000

Sources: City of Oakland, 2014; HdL, 2014; Strategic Economics, 2014.

The cumulative increased sales tax revenue between 2014 and 2040 is shown in Figure 37. With a streetcar, the additional sales tax revenue is projected to range from \$3.7 to \$5.2 million from 2014 to 2040, depending on the alignment. With an enhanced bus, cumulative sales tax revenue is projected to range from \$1.9 to \$4.4 million from 2014 to 2040, depending on the alignment.

Figure 37: Cumulative Sales Tax Revenue from 2014 to 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit Total	Benefit Over Baseline Total			
		Streetcar	Enhanced Bus		
JLS to 27th Street	\$121,482,000	\$125,214,000	\$123,413,000	\$3,732,000	\$1,931,000
JLS to MacArthur BART	\$176,135,000	\$181,321,000	\$178,777,000	\$5,186,000	\$2,642,000
JLS to Rockridge BART	\$201,808,000	n/a	\$206,179,000	n/a	\$4,371,000

Sources: City of Oakland, 2014; HdL, 2014; Strategic Economics, 2014.

¹⁹ Since the approval of Proposition 57 in 2004, cities actually receive only three-quarters of the local Bradley Burns sales tax, with the remaining quarter-cent used by the state to repay deficit financing bonds. To replace the diverted local sales taxes the state initiated a series of revenue exchanges commonly referred to as the “triple flip, using property taxes from the county Educational Revenue Augmentation Funds (ERAF). Because the City of Oakland reports that it receives 0.95 percent of retail sales as sales tax revenue, that amount was used in this analysis.

7.4 Transient Occupancy Tax Revenue

Increased spending at hotels will translate into higher annual transient occupancy tax (TOT) revenue for the city. Strategic Economics projected TOT revenue for each year from 2014 to 2040 based on Oakland’s current rate of 14 percent. The projected annual TOT revenue is shown in Figure 38. The two columns on the right list the benefit associated specifically with new transit. With a streetcar, additional TOT revenue is projected to range from \$1.1 to \$1.2 million annually in 2040, depending on the alignment. With an enhanced bus, additional TOT revenue is projected to range from \$656,000 to \$730,000 annually in 2040, depending on the alignment.

Figure 38: Projected Annual TOT Revenue in 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit			Benefit Over Baseline	
		Streetcar	Enhanced Bus	Streetcar	Enhanced Bus
JLS to 27th Street	\$8,440,000	\$9,542,000	\$9,096,000	\$1,102,000	\$656,000
JLS to MacArthur BART	\$8,440,000	\$9,607,000	\$9,133,000	\$1,167,000	\$693,000
JLS to Rockridge BART	\$8,440,000	n/a	\$9,170,000	n/a	\$730,000

Sources: City of Oakland, 2014; Strategic Economics, 2014.

The cumulative benefit to TOT revenue between 2014 and 2040 is shown in Figure 39. With a streetcar, the total additional TOT revenue is projected to range from \$17.4 to \$18.1 million, depending on the alignment. With an enhanced bus, the city will receive between \$10.4 and \$11.2 million in TOT revenue depending on the alignment.

Figure 39: Cumulative TOT Revenue from 2014 to 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit Total			Benefit Over Baseline Total	
		Streetcar	Enhanced Bus	Streetcar	Enhanced Bus
JLS to 27th Street	\$179,119,000	\$196,529,000	\$189,507,000	\$17,410,000	\$10,388,000
JLS to MacArthur BART	\$179,119,000	\$197,193,000	\$189,891,000	\$18,074,000	\$10,772,000
JLS to Rockridge BART	\$179,119,000	n/a	\$190,275,000	n/a	\$11,156,000

Sources: City of Oakland, 2014; Strategic Economics, 2014.

7.5 Business Tax Revenue

Increased business activity will translate into higher annual business tax revenue for the city. All businesses within the city, including commercial, industrial, and residential property owners, stores, restaurants, wholesalers, manufacturers, and hotels, are required to pay the Oakland business tax, which is primarily based on gross receipts. Strategic Economics estimated growth in business tax revenue for the city business tax categories of retailers, grocers, automobile dealers, and hotels. A weighted average rate

of 0.11 percent was applied to retail sales, grocers, and automobile dealers, while the city’s rate of 0.18 percent was applied to hotel sales.²⁰

Strategic Economics projected annual business tax revenue for each year from 2014 to 2040 based on projected sales and hotel revenue. The projected annual business tax revenue is shown in Figure 40. The two columns on the right list the benefit over the baseline scenario. These amounts are calculated by subtracting the projection for the baseline scenario from the projections for the streetcar and enhanced bus scenarios.

Under the streetcar scenario, additional business tax revenue is projected to range from \$41,000 to \$53,000 annually in 2040, depending on the alignment. Under the enhanced bus scenario, additional business tax revenue is projected to range from \$23,000 to \$40,000 annually in 2040, depending on the alignment.

Figure 40: Projected Annual Business Tax Revenue in 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit	Streetcar	Enhanced Bus	Benefit Over Baseline	
				Streetcar	Enhanced Bus
JLS to 27th Street	\$199,000	\$240,000	\$222,000	\$41,000	\$23,000
JLS to MacArthur BART	\$267,000	\$320,000	\$296,000	\$53,000	\$29,000
JLS to Rockridge BART	\$303,000	n/a	\$343,000	n/a	\$40,000

Sources: City of Oakland, 2014; Strategic Economics, 2014.

The cumulative benefit to business tax revenue between 2014 and 2040 is shown in Figure 41. With a streetcar, the additional business tax revenue is projected to range from \$698,000 to \$908,000 from 2014 to 2040, depending on the alignment. With an enhanced bus, cumulative business tax revenue is projected to range from \$377,000 to \$690,000 from 2014 to 2040, depending on the alignment.

Figure 41: Cumulative Business Tax Revenue from 2014 to 2040 by Alignment and Transit Scenario (2014 dollars)

	Baseline without Transit Total	Streetcar	Enhanced Bus	Benefit Over Baseline Total	
				Streetcar	Enhanced Bus
JLS to 27th Street	\$2,891,000	\$3,589,000	\$3,268,000	\$698,000	\$377,000
JLS to MacArthur BART	\$4,061,000	\$4,969,000	\$4,542,000	\$908,000	\$481,000
JLS to Rockridge BART	\$4,750,000	n/a	\$5,440,000	n/a	\$690,000

Sources: City of Oakland, 2014; Strategic Economics, 2014.

²⁰ Oakland’s business tax rates translate to 0.12 percent of retail sales and automobile dealer sales, 0.06 percent for grocery sales, and 0.18 percent for hotel sales. Business tax data were only available for these categories and wholesale sales along major commercial streets in the study area.

7.6 Summary of Tax Revenues

Figure 42 summarizes the estimated annual benefits accruing to the city (above the baseline scenarios) in 2040, including property tax, property transfer tax, business license tax, TOT, and sales tax revenue. As shown in the figure, the annual tax benefit under the streetcar scenario is projected to range from \$5.7 to \$6.7 million in 2040, depending on the alignment. Under the enhanced bus scenario, the annual tax benefit is projected to range from \$3.4 to \$4.5 million in 2040, depending on the alignment.

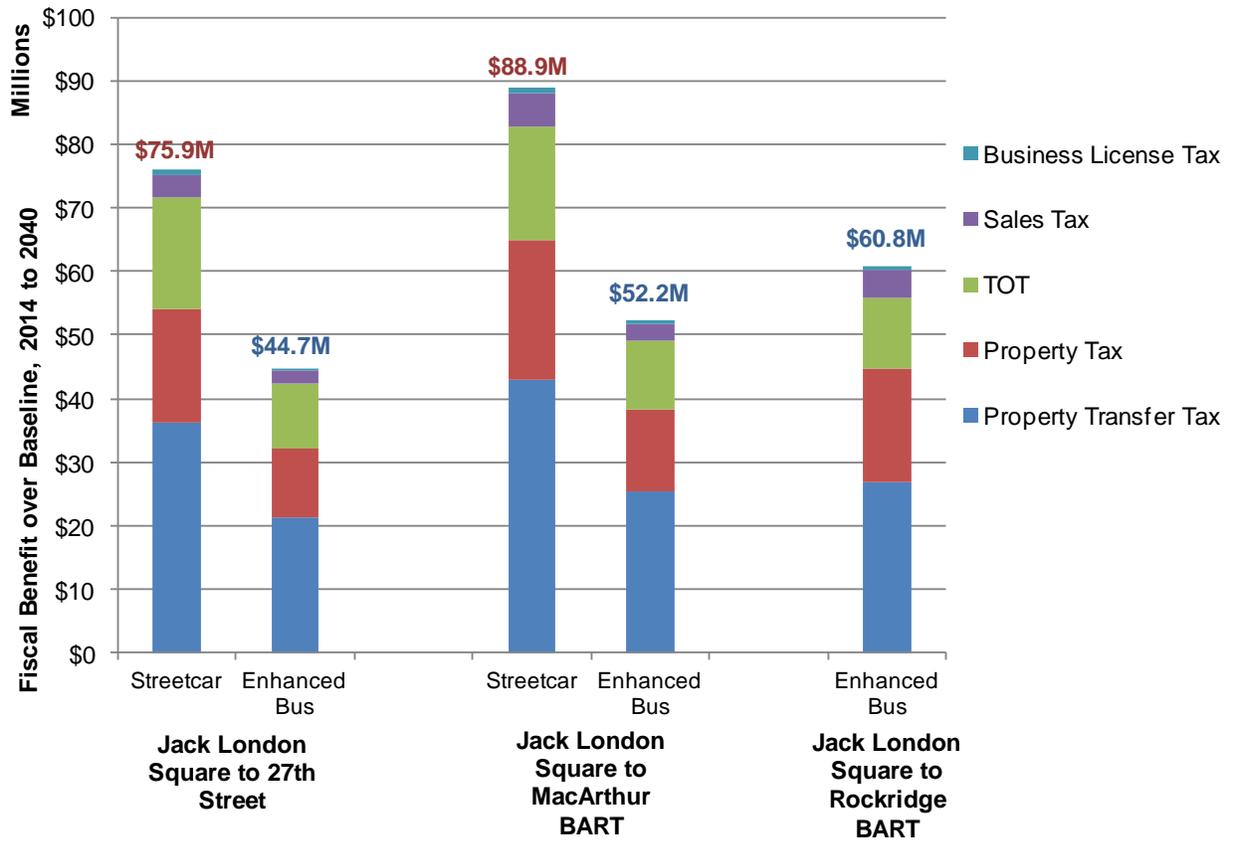
Figure 43 shows the cumulative tax benefits to the City of Oakland between 2014 and 2040. With a streetcar, the additional tax revenue is projected to range from \$75.9 to \$88.9 million from 2014 to 2040, depending on the alignment. With an enhanced bus, cumulative tax revenue is projected to range from \$44.7 to \$60.8 million from 2014 to 2040, depending on the alignment.

Figure 42: Projected Annual Tax Revenue in 2040 by Revenue Source, Alignment and Transit Scenario (2014 dollars)



Source: Strategic Economics, 2014.

Figure 43: Cumulative Tax Revenue from 2014 to 2040 by Revenue Source, Alignment and Transit Scenario (2014 dollars)



Source: Strategic Economics, 2014.

8.0 Other Benefits

Strategic Economics estimated the additional office, retail and hotel job growth likely to occur in the route alignment study areas as a result of the introduction of the Broadway Circulator alternatives. Jobs were estimated based on application of job density assumptions to growth in development. These density assumptions are shown in Figure 44.

Figure 44. Job Density Assumptions

Job Type	Value
Office (SF per job)	250
Retail (SF per job)	700
Hotel (rooms per job)	1.25

Source: Strategic Economics, 2014.

Figure 45 shows estimated job growth projections in 2040, including the streetcar or enhanced bus benefit generated by additional job attraction to the study areas. As shown, the benefit is greatest in the Jack London Square to 27th Street segment, which contains the greatest concentration of jobs among the route alignment study areas.

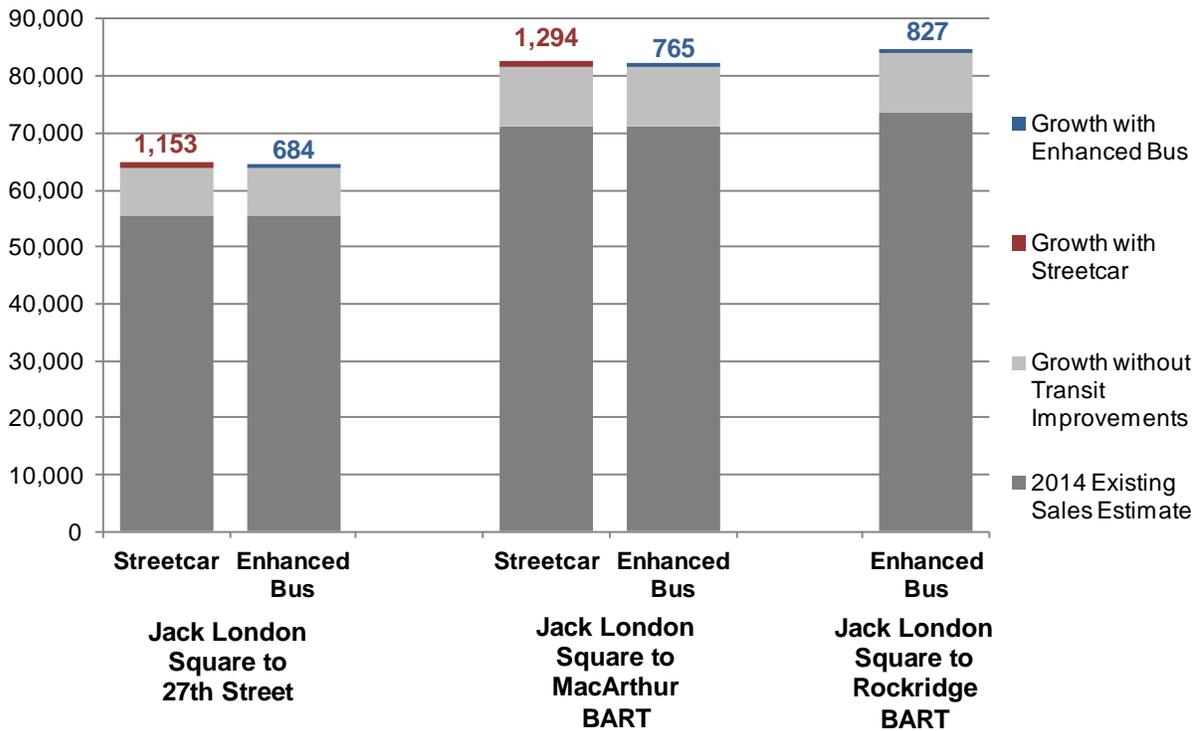
Figure 45. Projected 2040 Jobs in the Route Alignment Study Areas

	Total Jobs in 2014	Projected 2040 Job Growth: Office, Retail, Hotel			Benefit over Baseline	
		Baseline	Streetcar	Enhanced Bus	Streetcar Benefit	Enhanced Bus Benefit
JLS to 27th Street	55,540	8,160	9,310	8,840	1,150	680
JLS to MacArthur BART	71,100	9,110	10,410	9,880	1,300	770
JLS to Rockridge BART	73,690	9,410	n/a	10,240	n/a	830

Source: Strategic Economics, 2014.

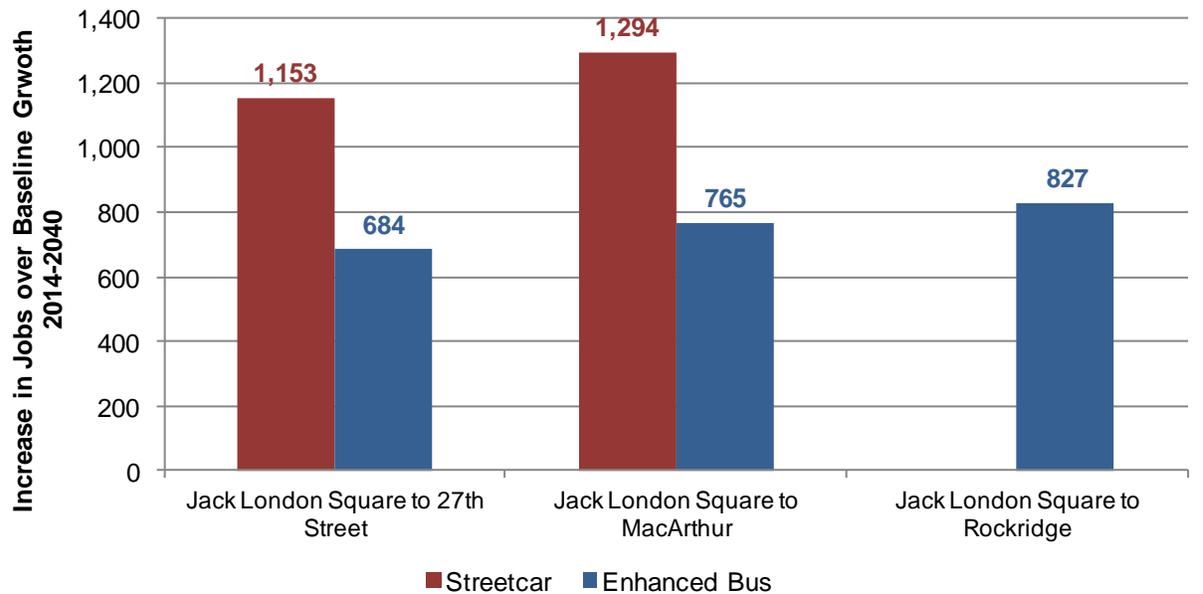
Figure 46 depicts the impacts graphically, while Figure 47 shows the number of jobs resulting from the streetcar or enhanced bus by 2040.

Figure 46. Projected Job Growth in the Route Alignment Study Areas



Source: Strategic Economics, 2014.

Figure 47. Streetcar and Enhanced Bus 2040 Job Growth Benefit over Baseline Growth in the Alignment Study Areas



Source: Strategic Economics, 2014.

9.0 Appendix: Methodology and Assumptions

This appendix provides additional technical details on Strategic Economics’ methodology for estimating the economic benefits of introducing a streetcar and/or enhanced bus to the study areas. The appendix covers development projections, job projections, property values, retail sales, hotel sales, and business tax revenues. It concludes with detailed charts and tables describing the results.

9.1 Model Overview

Strategic Economics estimated the benefits of streetcar and enhanced bus introduction using a “dynamic” model that calculated benefits for each year between 2014 and 2040. Results were inflation-adjusted – as necessary – and reported in 2014 dollars. This allowed results to be reported and compared in both annual and cumulative terms.

The reported benefits provide an order-of-magnitude comparison between streetcar and enhanced bus benefits. These calculations were estimated based on the best available data and research, and Strategic Economics’ experience and professional judgment. Since actual benefits may vary from these estimates, the exact benefit numbers should be viewed as an approximate projection, and should be used primarily as a means of comparing relative benefits of the streetcar and enhanced bus relative to each other and the baseline growth scenario.

9.1.1 Growth Scenarios

Strategic Economics analyzed and compared the following growth scenarios and route alignments.

“Baseline” Growth

The “baseline growth” scenario represents a future without a Broadway Circulator or other significant transit improvements. The baseline growth scenario also assumes that the B Shuttle bus service does not exist, since its future funding is uncertain. The purpose of this scenario is to allow for calculation of the incremental benefit resulting from a streetcar or enhanced bus (separate from general economic growth). Baseline growth was separately estimated for all three route alignment options (Jack London Square to 27th Street, Jack London Square to MacArthur BART, and Jack London Square to Rockridge BART).

Streetcar

The economic benefits of a streetcar were estimated for the Jack London Square to 27th Street and Jack London Square to MacArthur BART route alignments. The streetcar was assumed to open in 2020. Streetcar service would include modern streetcar vehicles running on rails in mixed traffic, with overhead power lines. Service would be frequent, and other capital investments in iconic station infrastructure would also occur. Since streetcars require significant capital investment and result in the creation of highly visible and permanent infrastructure and have been found to generate significant development and other benefits in the few studies that have been conducted, the streetcar was assumed to generate higher economic benefits compared to the enhanced bus.

Enhanced Bus

The economic benefits of an enhanced bus were estimated for all three alignments (Jack London Square to 27th Street, Jack London Square to MacArthur BART, and Jack London Square to Rockridge BART). In order to create a direct comparison to the streetcar, the enhanced bus was estimated to open in 2020 – the same year as the streetcar. The enhanced bus would run in mixed-traffic, include investments in iconic station infrastructure, offer frequent service, and receive priority at intersections.

9.2 Development Projections

Strategic Economics projected new residential, office, retail, and hotel development in the alignment study areas from 2014 to 2040, with and without a streetcar and/or enhanced bus. These projections formed the basis of estimates of future property value. New households and office workers associated with new development were also factored into future retail demand projections.

9.2.1 Residential Development

Strategic Economics estimated future residential development based on examinations of recent trends, planned development, and regional growth projections. New units were assumed to be added gradually over time, since it is not possible to project the timing or size of new residential project openings. Figure 48 summarizes the residential development projections for the study areas under the baseline, streetcar, and enhanced bus scenarios.

Figure 48. Projected Residential Development, 2014-2040 (Units)

	New Residential Development			Benefit over Baseline	
	Baseline Growth without Transit Improvements	Streetcar	Enhanced Bus	Streetcar	Enhanced
					Bus
JLS-27th Street	6,970	7,720	7,420	750	450
JLS-MacArthur BART	8,130	9,000	8,650	870	520
JLS-Rockridge BART	8,240	n/a	8,770	n/a	530

Source: Strategic Economics, 2014.

In the period from 2014 to 2040, the baseline scenario includes a total of 6,970 new residential units in the study area terminating at 27th Street, 8,130 units in the study area terminating at MacArthur BART, and 8,240 units in the study area terminating at Rockridge BART. Strategic Economics arrived at these unit counts after reviewing historic housing growth trends in the corridor and region since 2000, examining the study areas’ capture of regional housing growth in the nine-county Bay Area since 2000, and examining growth projections to 2040 produced by the Association of Bay Area Governments (ABAG) as part of Plan Bay Area.

Strategic Economics also examined recently completed and planned residential projects in the study areas to determine whether housing growth was likely to continue at a strong pace, and the locations and types

of housing being constructed. A total of approximately 3,000 units are currently proposed for the corridor study area terminating at 27th Street. Approximately 1,100 additional units are proposed in the study area terminating at MacArthur BART, or an additional 700 in the study area terminating at Rockridge BART. It will take a number of years for these units to be constructed – if they are built – but they provide compelling support for future residential growth in the baseline growth scenario.

The streetcar and enhanced bus are expected to increase the desirability of residential development in the study areas, increasing the study areas’ capture of regional household growth. Strategic Economics assumed that the streetcar benefit would increase capture of regional growth by approximately 10 percent, and that the enhanced bus would achieve approximately 60 percent of the streetcar benefit (based primarily on the enhanced bus’ relatively lower ridership projections compared to the streetcar).

Figure 49 shows the assumed study area capture rates of future housing growth projections for the nine-county Bay Area region. ABAG projects approximately 580,500 additional housing units will be constructed in the Bay Area between 2014 and 2040.

Figure 49. Capture Rates of Future Regional Housing Growth, 2014-2040

	Baseline Growth without Transit Improvements	Streetcar	Enhanced Bus
JLS-27th Street	1.2%	1.3%	1.3%
JLS-MacArthur BART	1.4%	1.6%	1.5%
JLS-Rockridge BART	1.4%	1.6%	1.5%

Source: Strategic Economics, 2014.

9.2.2 Office Development

Following a methodology similar to the residential development projections, Strategic Economics estimated the amount of new office development that will occur in the study areas with and without a streetcar and/or enhanced bus. These estimates were based on examinations of recent employment growth trends, planned development, and regional growth projections. New office square feet were added gradually over time in the model, since it is not possible to project the timing or size of new office building openings. Figure 50 summarizes the office development projections for the study areas under the baseline, streetcar and enhanced bus scenarios.

Figure 50. Projected Office Development, 2014-2040 (Square Feet)

	New Office Development, 2014-2040			Benefit over Baseline	
	Baseline Growth without Transit Improvements	Streetcar	Enhanced Bus	Streetcar Benefit	Enhanced Bus Benefit
JLS-27th Street	2,107,000	2,360,000	2,259,000	253,000	152,000
JLS-MacArthur BART	2,296,000	2,572,000	2,462,000	276,000	166,000
JLS-Rockridge BART	2,335,000	n/a	2,503,000	n/a	168,000

Source: Strategic Economics, 2014.

In the baseline growth scenario, the study areas are projected to add between 2.1 million to 2.3 million square feet of new office space between 2014 and 2040. Minimal office development has occurred in Downtown Oakland recently, although approximately half a million square feet of space are currently proposed and companies have begun to reinvest in existing, often vacant, office properties. A number of trends suggest that Downtown Oakland is poised to capture an increasing share of the region’s demand for office space: the area is becoming increasingly attractive as a result of growth in entertainment, dining, and housing options, easy regional access via BART, and its positioning as a low-cost alternative to the high-cost San Francisco office market. San Francisco itself may soon exceed allowable development limits under Proposition M, creating further incentive for growth to spillover into Downtown Oakland.

Given these trends, Strategic Economics calculated baseline office growth based on the study areas’ potential capture rates of future office-based employment growth in the region, then translated employment to square feet based on employee-to-space ratios and subtracted approximately 300,000 square feet to account for the existing vacant space that must be absorbed to reduce vacancy rates to 10 percent (per data from CoStar).

Based on industry sector projections from ABAG, Strategic Economics projected that approximately 689,552 new jobs will be created between 2014 and 2040 in largely office-based industry sectors in the nine-county Bay Area. Strategic Economics also examined corridor and nine-county office-based industry employment data from the U.S. Census Longitudinal Employer-Household Dynamics (LEHD) dataset to calculate each study areas’ share of existing regional jobs in office-based employment sectors. These rates were reduced (to account for trends and likely ability to capture additional development in the study areas) and applied to the ABAG employment growth projections to determine future capture rates of employees in the study areas. The Jack London Square to 27th Street growth capture rate was reduced to 50 percent of existing capture rates (according to LEHD), while the other corridor segments were reduced to 40 percent of existing capture rates. This difference accounts for the likelihood that most office development will occur in Downtown Oakland, and the additional corridor areas will drive marginal additional office growth within their boundaries and in Downtown Oakland.

In the streetcar and enhanced bus scenarios, the study areas were assumed to increase their shares of regional employment growth, reflecting the idea that over the longer term the transit would help to improve the desirability of the study area as a location for new office development relative to other places in the Bay Area region. Strategic Economics assumed that the study areas would experience a 12 percent increase in capture of regional office employment/development growth compared to the baseline growth projection. The enhanced bus was assumed to achieve 60 percent of the streetcar benefit, based primarily on the approximate relative difference in ridership between the two transit modes.

Figure 51. Capture Rates of Future Regional Office-Based Employment Growth, 2014-2040

	Baseline Growth without Transit Improvements	Streetcar	Enhanced Bus
JLS-27th Street	1.2%	1.4%	1.3%
JLS-MacArthur BART	1.3%	1.5%	1.4%
JLS-Rockridge BART	1.4%	1.5%	1.5%

Source: Strategic Economics, 2014.

9.2.3 Retail Development

New retail development in the study area was estimated based on retail sales projections for the study area, which are described in the retail and restaurant sales methodology section later in this appendix. The projections included assumptions about increased spending by new residents, employees, visitors, and other local and regional residents. The supportable square footage of new retail space associated with these sales was estimated by applying an estimated \$350 of sales per square foot at retail establishments. New retail square feet were added gradually over time in the model, rather than in increments that represent individual store openings. The retail development projections for each scenario are summarized in Figure 52.

Figure 52. Projected Retail Development, 2014-2040 (Square Feet)

	New Retail Development			Benefit over Baseline	
	Baseline Growth without Transit Improvements	Streetcar	Enhanced Bus	Streetcar Benefit	Enhanced Bus Benefit
JLS-27th Street	396,000	463,000	431,000	67,000	35,000
JLS-MacArthur BART	560,000	654,000	609,000	94,000	49,000
JLS-Rockridge BART	671,000	n/a	750,000	n/a	79,000

Source: Strategic Economics, 2014.

As shown, baseline retail development growth ranges from approximately 400,000 to 670,000 square feet. The baseline scenario includes new demand from existing and new residents, workers, regional shoppers, and visitors. This wide range is partly driven by the large base of retail existing in the Rockridge neighborhood and high potential for additional retail development in the Broadway-Valdez Specific Plan

area. No vacancy was subtracted from the baseline retail development growth since data from CoStar shows retail vacancy rates of less than 10 percent in the study areas.

In the streetcar and enhanced bus scenarios, increased retail spending associated with the transit projects translates into additional retail development. As shown in Figure 52, the streetcar scenarios include an additional 67,000 and 94,000 square feet of retail, while the enhanced bus scenarios include just over half as much additional retail.

9.2.4 Hotel Development

New hotel development in the study area was estimated based on hotel sales projections for the study area, which are described in the hotel sales results and methodology sections. The number of new hotel rooms associated with these sales was estimated based on daily and annualized room rates and occupancy at mid-scale and better hotels in the study areas, as reported by STR Global (a hotel market data provider). New hotel rooms were added gradually over time in the model, instead of being clustered to represent individual hotel openings.

Figure 53. Projected Hotel Development, 2014-2040 (Rooms)

	New Hotel Development			Benefit over Baseline	
	Baseline Growth	Streetcar	Enhanced Bus	Streetcar	Enhanced Bus
JLS-27th Street	730	780	760	50	30
JLS-MacArthur BART	730	800	770	70	40
JLS-Rockridge BART	730	n/a	780	n/a	50

Source: Strategic Economics, 2014.

As shown, an additional 730 rooms are projected to be added in the baseline growth scenario for all alignment study areas. The number of rooms was calculated based on an average nightly rate of \$126 and existing occupancy rate of 71 percent in the study areas. The baseline growth does not vary between alignments because all new hotel development is assumed to occur in Downtown Oakland, Jack London Square, and possibly Uptown (all of which are included in the Jack London Square to 27th Street alignment). Currently all mid-scale and better hotels in the study areas are located in Downtown or Jack London Square.

Demand for hotel rooms in the study areas is projected to increase by approximately 50 to 70 rooms in the streetcar scenarios or 30 to 50 rooms in the enhanced bus scenarios. These rooms are likely to still be located in Downtown, but their addition is a result of the added appeal created by the additional activity created by the streetcar or enhanced bus, and the additional access provided to other areas of the city. These additional rooms were calculated based on the existing occupancy rate of 71 percent in the study areas, and an average nightly rate of \$139 in the streetcar scenarios or \$134 in the enhanced bus scenarios (since the transit is expected to increase room revenues after opening).

9.3 Property Values

Strategic Economics researched residential, office, and retail market conditions to develop assumptions about the current average market value of new development. These assumptions are summarized in Figure 54. The market value of new residential units was estimated based on recent sales prices of newer condominiums in the study areas and the capitalized value of new apartment projects in the study areas. The apartments, office, and retail space were valued based on an income capitalization method that determines value per square foot based on lease rates, vacancy rates, operating expenses, and a capitalization rate. These inputs were determined via review of local broker market reports, CoStar market data, and research into recent comparable projects in or near the study areas.

Figure 54. Value of New Development (2014 Dollars)

Land Use	Value
Residential (per Unit)	\$476,600
Office (per SF)	\$343
Retail (per SF)	\$328

Source: Strategic Economics, 2014.

Property values were assumed to grow at an average rate of 5.5 percent per year for residential properties and 3 percent per year for commercial properties. These appreciation rates apply to the value of existing development as well as the value of new development. Future property values are reported in 2014 dollars using a discount rate of 2.5 percent.

Both new and existing properties in the study areas were assumed to increase in value as a result of the streetcar or enhanced bus project benefits. This increase in property value was modeled as taking place in 2019, the year before the transit was assumed to open; studies have found that property value increases typically occur before the new service opens. Figure 55 summarizes the percentage boosts to property value used in the model. The enhanced bus property value benefit is 60 percent of the streetcar benefit, based on approximate differences in expected ridership between the services.

Figure 55. Property Value Increase Upon Circulator Opening

	Streetcar	Enhanced Bus
Residential Development	5.00%	3.00%
Commercial Development	4.00%	2.40%

Source: Strategic Economics, 2014.

9.4 Retail and Restaurant Spending

This section presents the detailed methodology and assumptions used to project retail spending by different categories of shoppers.

9.4.1 Estimated Retail Sales

All of the retail sales estimates rely on analysis of historic sales tax receipts data provided by HdL and the City of Oakland for 2008 to 2013. Tax receipts were clustered into categories of sales and gross receipts were calculated using assumptions about the proportion of taxable sales in each category (Figure 56). Gas stations were excluded from the analysis.

Figure 56: Retail Sales Categories and Taxable Sales Assumptions

Retail Category	Percent Taxable
Motor Vehicle and Parts Dealers	100%
Building Materials, Garden Equipment and Supplies	100%
Clothing and Clothing Accessories Stores	100%
Electronics and Appliance Stores	100%
Food and Beverage Stores	35%
Food Services and Drinking Places	100%
Furniture and Home Furnishings Stores	100%
General Merchandise	100%
Health and Personal Care Stores	75%
Miscellaneous Store Retailers	100%
Non-Store Retailers	75%
Sporting Goods, Hobby, Book and Music Stores	100%

Source: HdL, City of Oakland, Strategic Economics.

These categories were subsequently simplified by combining the following categories as “Other Retail”:

- Electronics and Appliance Stores
- Health and Personal Care Stores

- Miscellaneous Store Retailers
- Non-Store Retailers
- Sporting Goods, Hobby, Book and Music Stores.

9.4.2 Spending by Households and Workers

Strategic Economics estimated average annual per capita retail spending by residents of the alignments based on sales tax receipts in Alameda County as reported by the California Board of Equalization (the most recent full year of data available was 2012). Total retail sales for the County was estimated using the same assumptions about taxable sales described in the section above. The estimate of total retail sales was further adjusted to remove estimated spending by visitors to the county using estimates from Dean Runyon, and then translated to per capita retail sales. The resulting average per-capita estimate was not adjusted for income because according to data from the US Census current household incomes in the corridors studied are similar to average household income in the County. The model assumes that new residents are assumed to spend 25 percent more in the study areas since their incomes are likely to be higher than existing residents (these new residents are expected to live in new housing units built in the corridor, which will have higher average rents and sales prices).

The estimated amount of retail spending by workers in each corridor option was calculated based on information from a national survey conducted in 2011 by the International Council of Shopping Centers (ICSC)²¹.

Average annual spending by workers and residents was estimated using a range of capture rates for different retail categories and alignments, taking into account the retail mix along each potential alignment. For example, the Jack London Square to MacArthur BART alignment includes significantly less food stores and other retail than the Jack London Square to Rockridge BART alignment. The impact of the enhanced bus was estimated as 60 percent of the estimated streetcar impact. Figure 57 shows the capture rates used in each scenario, and Figure 58 shows the associated dollar amounts. The baseline and transit benefit spending amounts are different for each route alignment because the mix of retail – and therefore the relative total level of spending captured within a given study area – varies.

²¹ Michael P. Niemera and John Connolly, “Office-Worker Retail Spending in a Digital Age,” International Council of Shopping Centers, 2012, http://www.icsc.org/srch/rsrch/wp/USSC_Class_091305.pdf

Figure 57: Capture of Resident and Worker Spending by Study Area

	Baseline	Streetcar	Enhanced Bus
JLS-27th Street			
Residents	12%	17%	22%
Workers	20%	23%	26%
JLS-MacArthur BART			
Residents	12%	18%	23%
Workers	21%	24%	27%
JLS-Rockridge BART			
Residents	12%	n/a	23%
Workers	21%	n/a	27%

Source: Strategic Economics, 2014.

Figure 58: Average Annual Resident and Worker Retail Spending by Study Area, and Spending Increase after Transit Opens (2014 Dollars)

	Baseline	Streetcar Benefit	Enhanced Bus Benefit
JLS-27th Street			
Existing Residents	\$1,160	\$61	\$36
New Residents	\$1,450	\$76	\$46
Workers	\$902	\$42	\$25
JLS-MacArthur BART			
Existing Residents	\$1,651	\$85	\$51
New Residents	\$2,064	\$106	\$64
Workers	\$1,027	\$57	\$34
JLS-Rockridge BART			
Existing Residents	\$2,149	n/a	\$92
New Residents	\$2,687	n/a	\$115
Workers	\$1,146	n/a	\$46

Source: Strategic Economics, 2014.

9.4.3 Visitors

Strategic Economics estimated regional visitor spending based on spending data from Dean Runyan. The corridor capture of this spending for each alignment study area was calculated as a share of total

spending. These capture rates were adjusted in the streetcar and enhanced bus scenarios to account for increased capture of visitor spending after the transit opens.

Figure 60 shows the estimated base amount of visitor sales in each alignment study area. Baseline visitor sales were assumed to grow at 3.5 percent annually. Visitor sales were assumed to experience a one-time spending increase upon opening of transit service. This benefit was 9 percent in the streetcar scenarios and 4.5 percent in the enhanced bus scenarios.

Figure 59: Area Assumed Capture Rates of Regional Visitor Spending

	Baseline	Enhanced	
		Bus	Streetcar
JLS-27th Street	7.3%	8.7%	11.1%
JLS-MacArthur BART	7.7%	9.2%	12.0%
JLS-Rockridge BART	7.6%	n/a	11.7%

Source: Strategic Economics, 2014.

Figure 60: 2014 Baseline Visitor Spending by Alignment Study Area

	2014 Spending
JLS-27th Street	\$46,389,812
JLS-MacArthur BART	\$55,002,388
JLS-Rockridge BART	\$70,329,388

Source: Strategic Economics, 2014.

9.4.4 Other Local and Regional Shoppers

After accounting for spending by people who work or live in the transit alignments, and visitor spending, the remaining 72 to 74 percent of current study area retail sales are attributable to other residents of Oakland and the surrounding area. The baseline spending for this category is shown in Figure 61.

As with visitor spending, the transit-driven benefit for this category of retail sales is modeled as an increase in the year that the transit begins operation, with an annual growth rate applied in subsequent years. Other retail spending in the study areas was assumed to grow at 3.5 percent annually in the baseline scenarios without new transit. The increased capture rates are shown in Figure 62. These increases seem relatively low because a high proportion of existing retail spending in the corridor is auto sales, which is not expected to be impacted by new transit. Auto sales represent between 43 and 56 percent of spending by other regional shoppers depending on the transit alignment study area.

Figure 61: 2014 Baseline Other Retail Spending by Alignment Study Area

	2014 Spending
JLS - 27th Street	\$320,211,647
JLS - MacArthur BART	\$451,368,381
JLS - Rockridge BART	\$524,734,019

Source: Strategic Economics, 2014.

Figure 62: 2014 Percent Increase in Other Retail Spending by Alignment Study Area

	Streetcar	Enhanced Bus
JLS - 27th Street	2.6%	1.5%
JLS - MacArthur BART	2.5%	1.5%
JLS - Rockridge BART	3.9%	2.3%

Source: Strategic Economics, 2014.

9.5 Hotels

9.5.1 Hotel Demand

Strategic Economics used market data provided by STR Global to calculate the study area’s historic share of hotel rooms in the regional market (defined as Alameda, Contra Costa, and San Francisco counties). The study area currently accounts for two percent of the supply of hotel rooms in the region.

Under the baseline growth scenario the model assumes that the study area captures two percent of regional hotel demand, which is consistent with the study area’s current share of hotel rooms.

9.5.2 Room Rates

Figure 63 summarizes the room rate assumptions used in the model. Average room rates for the baseline scenario are based on the current average room rate for hotel rooms (excluding economy hotels) within the study area. As shown in the figure, room rates for hotels under the streetcar scenario reflect a 10 percent transit premium, while room rates under the enhanced bus scenario reflect a 6 percent premium.

Figure 63: Room Rate Assumptions

	Baseline	Streetcar	Enhanced Bus
Transit Premium	n/a	10%	6%
Average Room Rate	\$126	\$139	\$134

Sources: STR Global, 2014; Strategic Economics, 2013.